HPA
HEALTH POLICY ANALYSIS

UNSW
Centre for Big Data
Research in Health

CHERE
CENTRE FOR HEALTH ECONOMICS
RESEARCH AND EVALUATION

Australian Government
Department of Health

Evaluation of the Health Care Homes trial

Final evaluation report

Volume 2: Main report

Revision history

Version	Date	Modification
0.1	28 March 2022	Initial draft.
0.2	4 April 2022	Incorporating initial comments from the Department of Health
0.3	20 May 2022	Incorporating comments from the Evaluation Working Group (EWG)
1.0	29 July 2022	Final report, incorporating comments from the Department of Health

Suggested citation: Pearse, J.[1], Mazevska, D.[1], McElduff, P.[1], Stone, C.[1], Tuccia, J.[1], Cho, O.[1], Mitchell, S.[1], McElduff, B.[1], Tran, D. T.[2], Falster, M. O.[2], Pearson, S.[2], Jorm, L.[2], Yu, S.[3], Naghsh Nejadm, M.[3], van Gool, K.[3], Wright, M.[3], Hall, J.[3], Bower, M.,[4] Dunbar, J.[5], Henryks, J., Rosen, R.[6], & Smyth, T. (2022). *Health Care Homes trial final evaluation report, Volume 2: Main report. Health Policy Analysis*. Commissioned by the Australian Government Department of Health.

[1] Health Policy Analysis; [2] Centre for Big Data Research in Health (CBDRH), University of NSW; [3] Centre for Health Economics Research and Evaluation (CHERE), University of Technology; [4] Flinders University; [5] Deakin University; [6] Nuffield Trust London.

Acknowledgements: Additional collaborators included: Prof. Robyn McDermott, James Cook University; Dr Kathryn Mack McDonald, Stanford University/Johns Hopkins University; Dr Steve Sutch, Sutch Consulting International Ltd; Charles Dove and Anna Lethborg Social Research Centre, Australian National University. The evaluation was also guided by the HCH Evaluation Working Group (see Volume 3 Appendix 1). The evaluation team acknowledges the contribution of the many participants in the HCH trial, including patients and carers, practices, practice staff, and the Primary Health Networks (PHNs), who generously shared their experiences and insights through surveys and interviews. The PHNs also provided other valuable support for the evaluation, as did the Australian Medical Services Alliance Northern Territory (AMSANT).

Disclaimer: In accordance with Health Policy Analysis' policy, we are obliged to advise that neither Health Policy Analysis nor any employee nor sub-contractor undertakes responsibility in any way whatsoever to any person or organisation (other than the Australian Government Department of Health) in respect of information set out in this report, including any errors or omissions therein, arising through negligence or otherwise however caused.

Health Policy Analysis Pty Ltd

Suite 101, 30 Atchison Street, St Leonards NSW 2065

PO Box 403, St Leonards NSW 1590

ABN: 54 105 830 920

ACN: 105 830 920

www.healthpolicy.com.au

Phone: +61 2 8065 6491

Contents

1. *Introduction* *1*
   Overview of the HCH trial 1
   Overview of the evaluation 4
   Evaluation design 5
   Program theory 7
2. *HCH practices* *9*
   Reasons for practices withdrawing 12
3. *HCH patients* *15*
   Tier changes 17
   Patient withdrawals 17

Key evaluation question 1: How was the HCH model implemented and what were the barriers and enablers? *20*

4. *HCH trial initiation* *21*
   Background 21
   Practice selection 23
   Program governance 24
   Program infrastructure 25
   HCH assurance and compliance 28
5. *Training and support* *32*
6. *Risk stratification* *39*
   Software implementation 41
   Predictive risk model (PRM) 42
   HARP assessment 42
   Review of tier allocation 45
   Training on the RST 48
   Analysis of data from the tool 49
7. *Patient enrolment* *52*
   Overview of the enrolment process 53
   Practice experiences with enrolment 54
   Suggestions to improve enrolment 61
8. *Bundled payment* *62*
   Overview 63
   Practice and PHN perspectives on the bundled payment 66

Key evaluation question 2: How does the HCH model change the way practices approach chronic disease management? *76*

9. *Practice early implementation challenges* *77*
   Program timeframes 77
   Practice understanding of HCH 78
   Buy-in from practice staff 79
   Information technology 80
   Concurrent initiatives impacting the HCH trial 81
10. *Practice model of care changes* *83*
   Practice self-assessment of HCH capabilities 114
11. *Shared care planning tools* *128*

How practices selected a shared care planning tool 129
Implementing tools within practices 130
Suggestions for improving shared care planning tools 135
Contribution of My Health Record to sharing information 136
12. HCH in Aboriginal Community Controlled Health Services 137
Context 138
Motivations to join HCH 139
Initiation and implementation 139
Training and support 139
Patient enrolment 140
Risk stratification tool 141
Shared care planning 142
HCH model 144
Implementation enablers and barriers 146
Bundled payment 148
COVID-19 impacts 149
Impact of HCH on practice staff 149
Patient experiences 150
Pharmacy services 152
ACCHS staff suggestions for HCH 153
13. Effects of location, size, ownership or patient volume 155
Rural and remote vs metropolitan-based practices 155
Small vs large practices 159
Corporate vs independently-owned practices 160
Practices with high vs low patient enrolments 161
14. Staff experience 162
Overview 162
General practitioners 167
Receptionists and administrative staff 169
Practice managers 170
Key evaluation question 3: Do patients enrolled in HCH experience better quality care? 172
15. Changes to chronic disease management 173
Measuring changes in chronic disease management 174
Impact of COVID-19 175
Encounters with health care providers within the practice 175
Monitoring of clinical measures 179
Monitoring of risk factor information 183
Immunisation against influenza 186
Changes in blood pressure, glycaemic control and renal function 187
16. Patient and carer experience 193
Patient experience of practices before HCH 194
Recruitment to HCH 195
Patient experiences with HCH 198
Patient suggestions for HCH 214
17. Patient-reported outcomes 216
General rating of patient's overall health 217
General rating of patient's mental and emotional health 217

Health-related quality of life 218
Self-reported emergency department and hospital utilisation 219
18. Patient outcomes: Linked data 220
Measuring changes in patient outcomes using linked data 221
Utilisation of primary care services 221
Utilisation of other Medicare-funded services 229
Utilisation of medicines 236
Utilisation of hospital services 239
Entry to residential aged care facilities 244
Serious cardiovascular events and mortality 245
Key evaluation question 4: What are the financial effects of the HCH model on governments, providers and individuals? 247
19. Financial impacts of HCH 248
Impact on practices 249
Impact on government 252
Impact on patients 255
Key evaluation questions 5–8: Community pharmacy trial? 259
20. Community Pharmacy in HCH Trial – set-up 260
Establishment of the trial 260
Trial design 261
Payments to pharmacies 263
Launch of the Community Pharmacy in HCH Trial 263
Training and support 266
IT set-up 271
21. Community Pharmacy in HCH Trial – pharmacy and patient participation 277
Pharmacies 278
Patients 279
Patient follow-up 280
Services provided by community pharmacies 282
Impact of patient tier and level of service delivery 285
Impact of COVID 286
Community pharmacists' experience with the trial 288
Cost of the community pharmacy trial 289
22. Community Pharmacy in HCH Trial – patient outcomes 290
HCH patient reception to receiving pharmacy services 292
Patient outcomes 293
Pharmacists' perceptions about patient outcomes 300
23. Community Pharmacy in HCH Trial – engagement between HCH practices and community pharmacies 305
Patient referrals 306
Communications between pharmacies and general practices 310
Pharmacist medication recommendations to GPs 312
Practice perspectives on the community pharmacy trial 314
24. Analysis of implementation issues 318
Characteristics of the intervention 321
The outer setting 325
The inner setting 329

Characteristics of individuals 337
Process 338
25. Conclusion *339*
26. Key lessons *341*
Laying the foundations 341
Engaging patients, carers and families 343
Change within practices 344
Risk stratification 345
Bundled payment 347
Shared care planning 348
Community pharmacy 348
Evaluation 349
Attachment 1: Responses to evaluation questions *351*
Key evaluation question 1: How was the HCH model implemented and what were the barriers and enablers? 351
Key evaluation question 2: How does the HCH model change the way practices approach chronic disease management? 357
Key evaluation question 3: Do patients enrolled in HCH experience better quality care? 365
Key evaluation question 4: What are the financial effects of the HCH model on governments, providers and individuals? 373
Key evaluation questions 5–8: Community pharmacy trial 375
References *379*

1 Introduction

This document is the final evaluation report of the Health Care Homes Trial (HCH trial). This volume is one of three featuring the findings of the evaluation. Table 1 describes the volumes.

Table 1: Final evaluation report volumes

Volume	Description
Volume 1 Summary report	Summarises the findings of the evaluation.
Volume 2 Main report	Presents the findings from the evaluation.
Volume 3 Methods and data supplement	Further details on evaluation methods, data sources and quality issues and additional analyses.

This report incorporates and builds on the findings reported in previous evaluation reports.[1,2]

Overview of the HCH trial

The HCH trial started on 1 October 2017 and ended on 30 June 2021. HCH was developed to reflect the recommendations of the Primary Health Care Advisory Group (PHCAG).[3] It incorporated elements of the patient-centred medical home (PCMH), focusing on coordinated and comprehensive primary care that is responsive to patients' needs and preferences. The key features of the intervention were:

- Voluntary enrolment of patients to a general practice – their health care home – nominating a GP as their preferred clinician.
- Tools to identify patients at risk of hospitalisation and stratify them to a complexity tier.
- A bundled payment for every enrolled patient based on their tier (for services relating to the patient's chronic conditions), replacing Medicare fee-for-service.
- Training resources to support transformation of practices towards the HCH model.
- Facilitation for practices to transform, provided by Primary Health Network (PHN) practice facilitators.

[1] Health Policy Analysis. (2019b). *Evaluation of the Health Care Homes program – Interim evaluation report 2019*. https://www1.health.gov.au/internet/main/publishing.nsf/Content/Evaluation-of-the-Health-Care-Homes-Program

[2] Health Policy Analysis. (2020). *Evaluation of the Health Care Homes program – Interim evaluation report 2020*. https://www1.health.gov.au/internet/main/publishing.nsf/Content/Evaluation-of-the-Health-Care-Homes-Program

[3] Primary Health Care Advisory Group. (2015). *Better Outcomes for People with Chronic and Complex Health Conditions: Final Report*. http://www.health.gov.au/internet/main/publishing.nsf/Content/primary-phcag-report

- Use of electronic shared care planning tools, giving authorised health professionals and patients access to up-to-date electronic medical records.

These features are consistent with the 10 building blocks of high-performing primary care[4] and the quadruple aims: improving patient health, enhancing patient experience, reducing health care costs and improving the work life of providers and staff,[5,6] which underpin the PCMH.

Participating practices implemented different models, but common to all models was the intention to:[7 (p. 4)]

- **Involve patients, families and their carers as partners** in their care. Patients are activated to maximise their knowledge, skills and confidence to manage their health, aided by technology and with the support of a health care team.
- Provide **enhanced access** to care in-hours (including to practice nurses and other staff), which may include support by telephone, email or videoconferencing, and effective access to after-hours advice or care.
- Provide **flexible service delivery and team-based care** that supports integrated patient care across the continuum of the health system through shared information and care planning.
- Deliver **high-quality and safe** care. Care planning and clinical decisions are guided by evidence-based patient health care pathways, appropriate to the patient's needs.

Practices from 10 PHNs across Australia participated in the trial. The 10 PHNs were selected to maximise geographic and socio-economic diversity amongst the populations represented and leverage chronic disease programs operating in the regions. Practices within the PHNs were selected following an expression of interest issued in late 2016. One of the Department of Health's considerations in selecting practices was to ensure a mix of locations, practice size, ownership status and staffing levels. This was so the model could be tested in different contexts.

The Department initially recruited 200 practices and announced the successful practices in mid-2017. Not all practices that were selected proceeded with the trial. Some also withdrew soon after joining the trial. Practices continued to be recruited until mid-2018 to replenish practices that didn't proceed or that withdrew early. Participating practices received a $10,000 grant to help with implementing the model.

---

[4] Bodenheimer, T., Ghorob, A., Willard-Grace, R., & Grumbach, K. (2014). The 10 Building Blocks of High-Performing Primary Care. *Annals of family medicine, 12*(2), 166-171.
[5] Berwick, D. M., Nolan, T. W., & Whittington, J. (2008). The triple aim: care, health, and cost. *Health Aff (Millwood), 27*(3), 759-769.
[6] Bodenheimer, T., & Sinsky, C. (2014). From triple to quadruple aim: care of the patient requires care of the provider. *Ann Fam Med, 12*(6), 573-576.
[7] Primary Health Care Advisory Group. (2015). *Better Outcomes for People with Chronic and Complex Health Conditions: Final Report*.
http://www.health.gov.au/internet/main/publishing.nsf/Content/primary-phcag-report.

The trial was originally intended to run between October 2017 and June 2019, with patients enrolled up to December 2018. An extension was announced in the second half of 2018, with patient enrolment extended to June 2019 and the trial to June 2021.

A risk stratification tool (RST) was commissioned by the Department and practices had to use this to identify patients suitable for enrolling in the program and to allocate them to a tier for payment purposes.

Practices received a bundled payment for each patient, with the amount determined by the patient's tier. There were three tiers, where tier 3 was the most complex and had the highest payment. The bundled payment was intended to cover the costs of care delivered by the practice related to a patient's chronic health conditions. Practices could still bill Medicare for other (acute) conditions and certain other items.

Practices had to develop a care plan jointly with each enrolled patient, and update this regularly. They also had to install and use shared care planning software to develop the care plan and share it with the patient's other health care providers outside of the practice as well as with the patient (and where relevant, their carer/ family).

To support the implementation, the Department commissioned online training modules and supporting materials to be developed. The Department also provided funding to the 10 participating PHNs to support practices and facilitate the implementation of HCH. PHN practice facilitators received training and ongoing support through regular webinars and coaching by a national facilitator.

In August 2018, under the Sixth Community Pharmacy Agreement (6CPA), the Australian Government funded the Community Pharmacy in Health Care Homes Trial (the community pharmacy trial), which supported patients participating in the HCH trial by offering them a range of patient-centred, coordinated medication management services from community pharmacists, including:

- Medication reconciliation and assessing the patient's medicines regimen.
- Identifying potential medication-related issues and agreeing medication management goals.
- Developing a medication management plan (MMP) with the patient and their HCH.
- Providing regular follow-up reviews with the patient.
- Providing additional support services for the more complex patients, such as dose administration aids, blood glucose monitoring, blood pressure monitoring and asthma management planning.

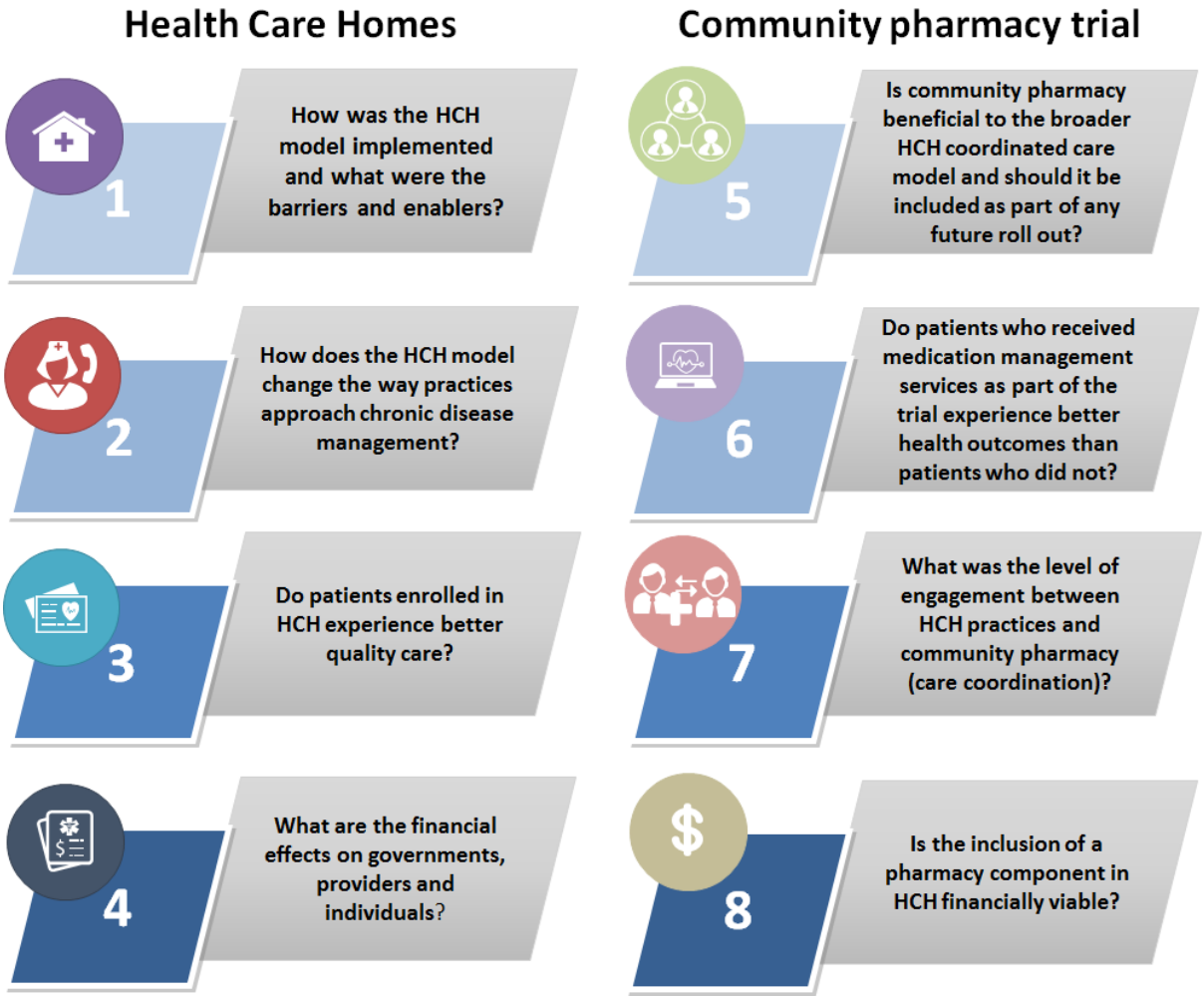
Patients could choose the pharmacy that the practice referred them to.

Overview of the evaluation

The HCH trial, including the community pharmacy trial, was evaluated by a consortium led by Health Policy Analysis (HPA). The consortium included the Centre for Big Data Research in Health (CBDRH, University of New South Wales), the Centre for Health Economics Research and Evaluation (CHERE, University of Technology Sydney) and individual experts from Australia and abroad.

The evaluation methods were detailed in the HCH evaluation plan.[8] Figure 1 shows the key evaluation questions.

Figure 1: Key evaluation questions



[8] Health Policy Analysis. (2019a). *Evaluation of the Health Care Homes program – Evaluation plan (Updated 2019)*. https://www1.health.gov.au/internet/main/publishing.nsf/Content/Evaluation-of-the-Health-Care-Homes-Program. Note that this reference is to the version of the plan that was updated to accommodate the extension of the trial. The updated plan maintained the evaluation approach and measures published in the original plan but added data collection points due to the extension.

Evaluation design

The evaluation used mixed methods. The design was predominantly convergent (that is, quantitative and qualitative data collected separately but compared at the time of analysis to corroborate or expand findings), with some sequential elements (that is, quantitative results informing qualitative data collection or vice-versa, for example, results of practice surveys informing exploration in case study interviews).

The quantitative components used quasi-experimental and before-and-after designs. For the quasi-experimental analyses, selected outcomes for HCH patients were compared with outcomes for equivalent patients from non-HCH practices. Similarly, measures for HCH practices were also compared with non-HCH practices. For the before-and-after analyses, measures for HCH practices and patients were compared before or at the start of the trial with measures after implementation.

Quantitative data sources included extracts from practice clinical management systems and linked data that included Medical Benefits Schedule (MBS) data, Pharmaceutical Benefits (PBS) data, hospitalisations data, emergency department data, residential aged care data and national deaths data.

The qualitative components aimed to provide information about how the trial was implemented, and insights into participants' experiences with the trial. These data were collected through case studies of selected practices that included interviews with the practices, practice staff, practice patients and their carers and other stakeholders.

Table 2 lists the data sources, labelled as "primary" (data collected specifically for the evaluation), and "secondary" (data requested from other sources). The evaluation was split into five "rounds" and primary data collection activities were organised according to these. There were also three "waves" of patient surveys. Table 3 shows the dates relating to key primary data collection activities.

COVID-19 was declared as a pandemic by the World Health Organization (WHO) on 11 March 2020. It affected the last 16 months of the trial. Box 1 outlines the impact of the pandemic on the evaluation.

Box 1: Impact of COVID-19 on the evaluation

Questions about COVID-19 were incorporated into primary data collection and were mainly aimed at understanding the impact of the pandemic on practices' implementation of the HCH model and operations during the pandemic. The impact of the pandemic was also reflected in secondary data sources. These impacts have been analysed in this report.

Evaluation activities were not affected by the pandemic, except that case study interviews in the final data collection round were mostly conducted via tele/videoconference.

Table 2: Evaluation data sources

Data source	Key questions	Collection type	Evaluation report in which data were used and data collection round/period		
			Interim 2019	Interim 2020	Final report 2021
Patient surveys	3, 6	Primary	Wave 1 (baseline)	n.a.	Waves 1, 2 and 3
Practice surveys	1, 2, 4	Primary	R1 R2	R4	R1 R2 R4 R5
Practice staff surveys	1, 2, 4, 5, 7	Primary	R1	n.a.	R1 R5
PHN surveys	1, 2, 4	Primary	R1	R4	R1 R4 R5
PHN interviews	1, 2, 4, 5, 7	Primary	R1 R2	R4	R1 R2 R4 R5
Case studies[1]	2, 4, 5, 6, 7	Primary	R2	R4	R1 R2 R4 R5
HCH program data[2]	1, 4	Secondary	Oct 2017 – Aug 2019	Oct 2017 – Jun 2020	Oct 2017 – June 2021
Community pharmacy Health Outcomes Data	5, 6, 7, 8	Secondary	July 2018 – June 2019	July 2018 – June 2020	July 2018 – June 2021
Risk stratification	2	Secondary	July 2018 – June 2019	July 2018 – June 2020	July 2018 – June 2021
Practice extracts[3]	2, 3	Secondary	To June 2019	To June 2020	To June 2021
Linked data[4]	3, 4	Secondary	n.a.	n.a.	Various[5]

Notes: [1] Case studies include patient interviews/focus groups, practice interviews, related provider interviews (for example, pharmacists, allied health); [2] Data related to the administration of the program from the Department of Health and Services Australia; [3] For some practices, data were obtained two years before the start of the trial, see Volume 3 for details; [4] Includes MBS, PBS, hospital, emergency department, aged care, and fact of death data; [5] See Volume 3 for details.

Table 3: Timing of primary data collection activities

Evaluation round	Practice surveys and staff surveys	PHN surveys	Patient surveys	PHN interviews	Case study interviews
Round 1 (R1)	Dec 2017–Jul 2018 (incl. staff survey)	Aug 2018	Wave 1: Dec 2017–Mar 2019	Jan – Jun 2018	
Round 2 (R2)	Nov 2018–Mar 2019			Nov–Dec 2018	Sept–Oct 2018
Round 4 (R4)	Nov 2019–Mar 2020	Mar–Apr 2020	Wave 2: Dec 2019–Mar 2020	Jul–Oct 2019	Nov 2019–Mar 2020 (incl. NT ACCHS case studies)
Round 5 (R5)	Mar–May 2021 (incl. staff survey)	May–June 2021	Wave 3: Mar–Apr 2021	Mar–Apr 2021	Mar–May 2021 (incl. NT ACCHS case studies)

Program theory

Before the start of the trial, a conceptual model or "program theory" was developed of how the HCH intervention was intended to work (Figure 2). The community pharmacy trial was later incorporated into this. The model was used to guide the evaluation and analyse how infrastructure established for the implementation of HCH contributed to structural and process changes within practices and engagement of patients and outcomes.

The bottom of Figure 2 labelled "1. Elements promoting transformation" includes the infrastructure that was made available to practices and community pharmacies to promote transformation: the risk stratification tool (RST), training and support and bundled payments.

The next level labelled "2. Structural change/transformation" identifies the capabilities that practices were expected to develop to transform to a HCH, including leadership to drive the transformation, introducing flexibility in how resources would be deployed, improving knowledge and skills of staff, identifying quality improvement initiatives, and establishing collaborations with community pharmacists and other providers.

The next level labelled "3. Processes of care" shows improvements that were expected following practices' structural change/ transformation. They included improved access to care and care coordination, engagement of patients and activation (maximising their knowledge, skills and confidence to manage their health), leading to improved adherence to treatment and behavioural changes.

These processes of care were hypothesised to affect outcomes, which are listed in the next level, "4. Outcomes". These included improved health outcomes for patients (defined as improved health-related quality of life, improved life expectancy and improved experience of primary care), and better control of health care costs (brought about by patients being healthier, thereby reducing avoidable health care use, including hospitalisation). These goals align closely with the triple aims of the Institute for Healthcare Improvement (IHI),[9] and the health system goals identified by the World Health Organization in its health systems report framework.[10,11]

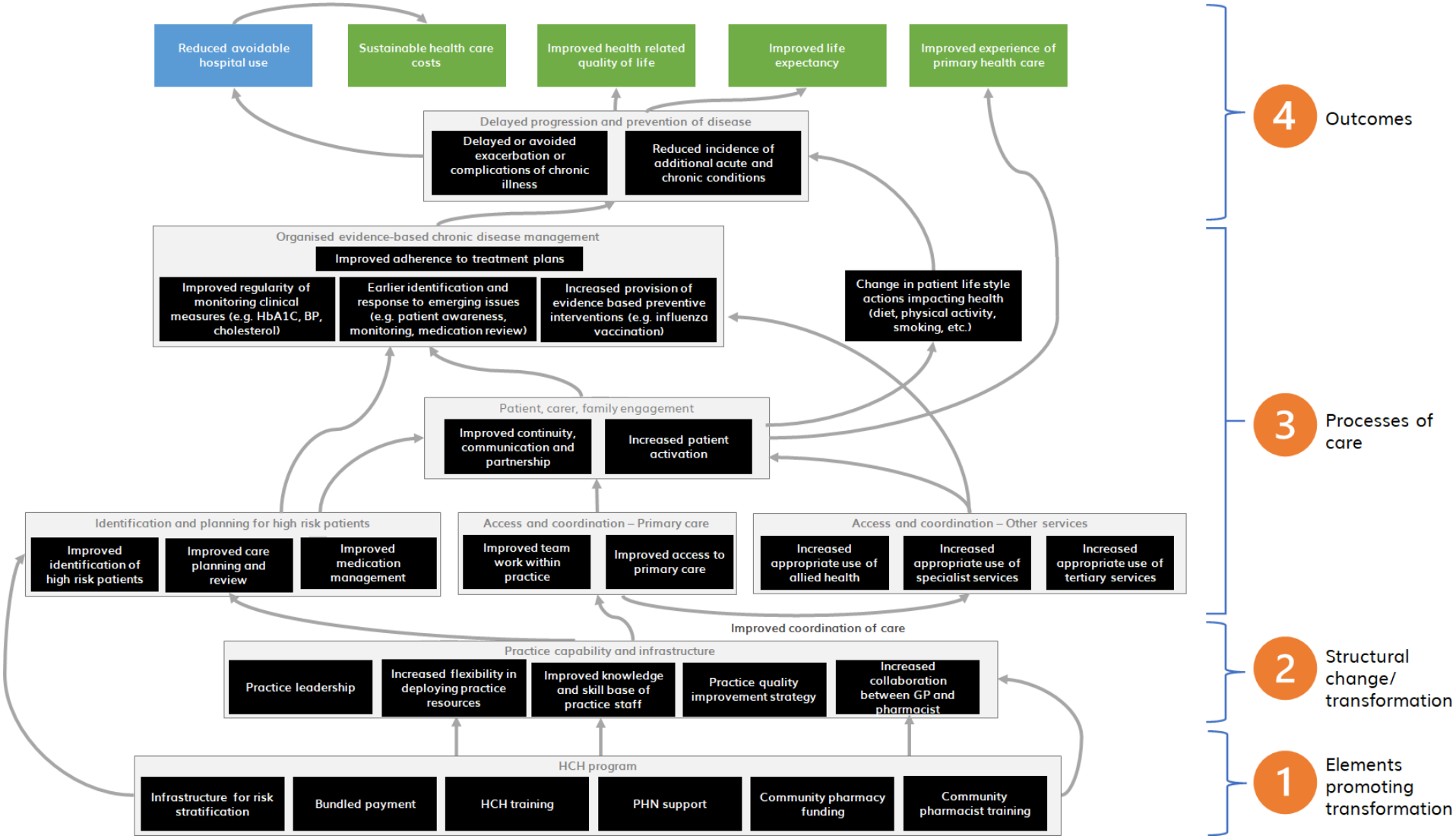
---

[9] Stiefel, M., & Nolan, K. (2012). *A Guide to Measuring the Triple Aim: Population Health, Experience of Care, and Per Capita Cost. IHI Innovation Series white paper*. https://www.jvei.nl/wp-content/uploads/A-Guide-to-Measuring-the-Triple-Aim.pdf

[10] Murray, C. J. L., & Evans, D. B. (2003). Health systems performance assessment: Goals, framework and overview. In C. J. L. Murray & D. B. Evans (Eds.), *Health systems performance assessment: Debates, methids and empiricism* (pp. 3-18). WHO.

[11] World Health Organization. (2000). *The World Health Report 2000. Health Systems: Improving Performance*.

Figure 2: Program theory for HCH (incorporating the community pharmacy trial)



2

HCH practices

Box 2: Chapter summary

Over the course of the HCH trial, 227 practices participated. At the end of the trial on 30 June 2021, 106 practices remained. Most of the 121 practices that withdrew had not enrolled any patients or had enrolled less than 10.

The mean number of patients per practice peaked in July 2019 (the end of the enrolment period). Practices remaining in the trial in June 2021 had enrolled 89 patients on average, although there was considerable variation, with 47% enrolling less than 50 patients and 19% enrolling less than 20 patients.

Practices of a medium size, independently owned, and/or located in a remote and/or most socioeconomically disadvantaged area were less likely to withdraw.

Practices that withdrew early in the trial identified the following as key reasons for not continuing: insufficient information leading to lack of clarity of expectations; concerns with the RST (particularly installing the software); administrative burden of enrolling patients; challenges with distributing the bundled payment amongst staff in the practice; concerns about who would be responsible for patients with a team-based model; and misalignment with their existing practice model.

In the middle stages of the trial, practices that hadn't progressed their HCH model perceived that the transformation that they would need to undergo would be too challenging and withdrew due to this.

In the later stages of the trial, practices withdrew due to lack of certainty about the future of the program. Some practices also cited ongoing frustrations with external providers using the shared care platform and having to provide them with printed copies of patient care plans.

Through all stages of the trial, factors that contributed to practices withdrawing included losing a key person/role from the practice; GP attitudes to the model; lack of a value proposition for GPs and patients; perceptions about the adequacy of the bundled payment; and practice closure or change of ownership.

Despite withdrawing, several practices identified aspects of the model that they would like to maintain or see maintained into the future. These included team care, quality improvement and the bundled payment.

The number of practices that stayed until the end of the trial (30 June 2021) was 106 (labelled as "Active" practices in Table 4).[12] A further 121 practices (53.2%) had participated at some stage but withdrew before the trial ended (labelled as "Withdrawn" practices in Table 4). Most practices that withdrew had not enrolled any patients (n = 62) or had enrolled less than 10 (n = 26) (Table 5). Practices withdrew from the trial at a steady rate until July–August 2019,

[12] Table 4 and Table 5 refer to 'active' and 'withdrawn' practices. 'Active' means the practice was participating in the HCH trial when it closed on 30 June 2021. 'Withdrawn' means that the practice was participating at some stage following October 2017 but had withdrawn before 30 June 2021.

when those that had not enrolled any patients by the end of the enrolment period withdrew (Figure 3).

The mean number of patients per practice peaked in July 2019 (the end of the enrolment period) (Figure 3). The mean number of patients per active practice was 88.6 (Table 5).

Table 4 shows the number of practices by three of the four dimensions used in the selection process for the trial: location, practice size (based on the number of FTE GPs) and practice type (corporately owned, independent or Aboriginal Medical Service).[13]

The Table also includes information on the level of socio-economic disadvantage of the communities in which practices are located, using the Australian Bureau of Statistics (ABS) Index of Relative Socio-economic Disadvantage (IRSD). The index has been grouped into three categories using the deciles of the IRSD.

Table 4: Participation status of practices and number of patients enrolled by active practices, by sampling strata,[1] 30 June 2021

Practice characteristic	Patients in active practices	Practices				
		Active	Withdrawn		Total	Percentage withdrawn
			Patients enrolled	No patients enrolled		
Total	**7,754**	**106**	**59**	**62**	**227**	**53.3%**
Practice size (based on FTE GPs)[2]						
Sole practitioner	460 (5.9%)	11 (10.4%)	9 (15.3%)	8 (12.9%)	28 (12.3%)	60.7%
Small practice	3,028 (39.1%)	53 (50.0%)	30 (50.8%)	29 (46.8%)	112 (49.3%)	52.7%
Medium practice	2,404 (31.0%)	23 (21.7%)	9 (15.3%)	11 (17.7%)	43 (18.9%)	46.5%
Large practice	1,862 (24.0%)	19 (17.9%)	11 (18.6%)	14 (22.6%)	44 (19.4%)	56.8%
Practice ownership						
AMS[3]	1,297 (16.7%)	16 (15.1%)	7 (11.9%)	9 (14.5%)	32 (14.1%)	50.0%
Independent	5,626 (72.6%)	76 (71.7%)	38 (64.4%)	23 (37.1%)	137 (60.4%)	44.5%
Corporate	831 (10.7%)	14 (13.2%)	14 (23.7%)	30 (48.4%)	58 (25.6%)	75.9%
Remoteness (MMM category)[4]						
MMM 1	5,390 (69.5%)	75 (70.8%)	37 (62.7%)	34 (54.8%)	146 (64.3%)	48.6%
MMM 2	329 (4.2%)	8 (7.5%)	15 (25.4%)	11 (17.7%)	34 (15.0%)	76.5%
MMM 3	366 (4.7%)	4 (3.8%)	2 (3.4%)	6 (9.7%)	12 (5.3%)	66.7%
MMM 4 & 5	805 (10.4%)	6 (5.7%)	3 (5.1%)	2 (3.2%)	11 (4.8%)	45.5%
MMM 6 & 7	864 (11.1%)	13 (12.3%)	2 (3.4%)	9 (14.5%)	24 (10.6%)	45.8%
ABS Index of Relative Social Disadvantage						
Deciles 1–3 most disadvantaged	3,202 (41.3%)	44 (41.5%)	23 (39.0%)	25 (40.3%)	92 (40.5%)	52.2%
Deciles 4–7	3,702 (47.7%)	43 (40.6%)	24 (40.7%)	22 (35.5%)	89 (39.2%)	51.7%

[13] Aboriginal Medical Service is used to refer to both Indigenous Health Services and Aboriginal Community Controlled Health Services (ACCHS).

Practice characteristic	Patients in active practices	Practices				
		Active	Withdrawn		Total	Percentage withdrawn
			Patients enrolled	No patients enrolled		
Deciles 8–10 least disadvantaged	850 (11.0%)	19 (17.9%)	12 (20.3%)	15 (24.2%)	46 (20.3%)	58.7%

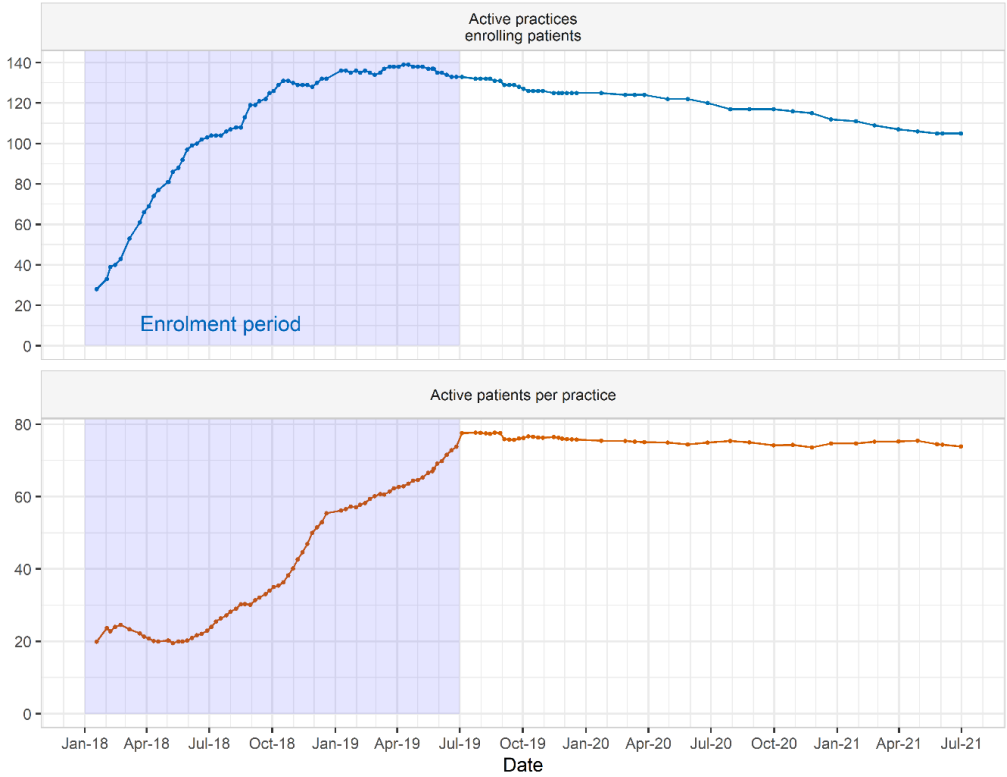
Notes: [1] Does not include strata in dimension relating to range of clinical staff available at the practice; [2] Large practice defined as 8+ FTE GPs, Medium practice defined as 5 to 8 FTE GPs, Small practice defined as <5 FTE GPs; [3] See footnote 13, p. 10; [4] MMM refers to the Modified Monash Model (see footnote 14, p. 12).
Source: Department of Health database of practices, practice surveys and Health Professional Online Services (HPOS) data to 30 June 2021.

Table 5: Practice withdrawal status by maximum number of patients enrolled throughout trial

Maximum patients enrolled	Active practices n (%)	Withdrawn practices n (%)
0	0 (0.0%)	62 (51.2%)
1 to 4	4 (3.8%)	18 (14.9%)
5 to 9	3 (2.8%)	8 (6.6%)
10 to 19	15 (14.2%)	10 (8.3%)
20 to 49	28 (26.4%)	14 (11.6%)
50+	56 (52.8%)	9 (7.4%)
Total	**106 (100.0%)**	**121 (100.0%)**
Mean per practice	88.6	13.7

Source: Health Professional Online Services (HPOS) data to 30 June 2021.

Figure 3: Active practices and mean patients per active practice, January 2018 to June 2021



Source: Health Professional Online Services (HPOS) data to 30 June 2021.

The analysis shows:

- Medium sized practices (5–8 FTE GPs) tended to have a lower rate of withdrawal (46.5%) compared with practices of other sizes.
- Independently owned practices tended to have a lower rate of withdrawal (44.5%) and corporate practices the highest (75.9%).
- Practices located in more remote areas (Modified Monash Model – MMM – categories 4,5,6 and 7)[14] tended to have a lower rate of withdrawal. This was slightly lower than for practices located in major metropolitan areas (48.6%). Rates were high for practice located in regional areas (MMM categories 2 and 3 – 76.5% and 66.7% respectively).
- Practices located in more disadvantaged areas (deciles 1–7, 52%) tended to have a lower rate of withdrawal than those in the least disadvantaged areas (deciles 8–10, 58.7%).

The evaluation aimed to achieve a minimum number of practices – 10 – for each sampling stratum (Measure 1.02.03). Table 4 shows that on 30 June 2021, the minimum number was maintained for all study strata except practices located in areas classified as MMM categories 2 and 3 (8 and 4 active practices respectively) and areas classified as MMM categories 4 and 5 (6 active practices). The evaluation also aimed to ensure that at least 100 patients were enrolled in practices across the sampling stratum (Measure 1.02.04). This target was achieved at the end of the enrolment period (30 June 2019) and maintained on 30 June 2021.

Reasons for practices withdrawing

Through the course of the trial, 43 practices that withdrew either completed a survey or participated in an interview to discuss their reasons for withdrawing. The most common reasons for practices withdrawing in the earlier stages of the trial included:

- **Insufficient information** provided about the program before implementation, resulting in a **lack of clarity of expectations**. PHN practice facilitators also identified an absence of clear expectations at the time practices signed up for the trial.

- **Concerns with the RST**. These included problems **installing the software**, which they were not able to overcome. Some practices were also dissatisfied with the training in the use of the tool, and disappointed with the amount of information they had been able to extract from it, although these factors were not primary reasons for withdrawing. Several practices suggested that they would have remained in the trial if the RST had been easier to use, if it had worked more effectively, and if the training had been better and less time-consuming.

[14] MMM classifies metropolitan, regional, rural and remote areas according to both geographical remoteness and town size. It is intended to enhance the Australian Statistical Geographic Standard, Remoteness Areas (ASGS-RA) used by the Australian Bureau of Statistics (ABS). The classification has been adopted by several Government programs, including the General Practice Rural Incentives Program (GPRIP). MMM 1 aligns fully with the ASGS-RA category of 'Major cities'. MMM 7 relates to the most remote areas.

- Concerns about the **administrative burden of enrolling patients**, specifically the length of time and multiple processes required.
- Difficulties with working out **how to distribute the bundled payment** amongst staff in the practice.
- **Incompatibility of HCH with the practice's "walk in" model**.
- Concerns about **who would be responsible for patients** given the emphasis in the model of delegating tasks from a GP to a practice nurse or medical practice assistant.

In the middle stages of the trial, at about the end of the enrolment period, a few practices found that they hadn't yet enrolled any patients or only enrolled a few patients and hadn't progressed their HCH model. They withdrew as they perceived that the **transformation that they would need to undergo would be too challenging**.

In the last six months of the trial, a small number of practices withdrew due to the **lack of certainty about the future of HCH**. Some practices also cited ongoing **frustrations with external providers using the shared care platform** and having to provide them with printed copies of patient care plans.

Factors that persisted for practices at all stages of the trial that contributed to their withdrawal included:

- **Loss of key people/role and staff turnover**. Key individuals/roles that practices lost that led to their decision to withdraw included GPs, nurses and practice managers. These were often individuals who championed the model. Staff turnover of GPs who were not directly involved in the trial also impacted the capacity of practices to continue. Some practices indicated that turnover of key staff meant the practice lost expertise and knowledge built up in the initial stage of implementation, and that it was too time consuming to train new staff.
- **Lack of commitment or support amongst GPs within the practice**, including those not participating in the trial. In some instances, GPs in the practice did not have a good understanding of the model when the practice signed up to the trial. In many practices only one or two GPs participated in HCH, and other GPs were unable to agree on the merits of the model, eventually leading the practice to withdraw.
- **Perception that the bundled payment was inadequate** for the care required for patients with chronic illnesses. For some practices this issue was compounded by the low volume of enrolments, which meant that they couldn't offset losses for some patients with gains for others.
- **Perception that there was no clear value proposition for their GPs and their patients**.
- **Practice closure or change of ownership**.

Despite withdrawing, practices identified some aspects of the model that they would like to maintain or see maintained into the future:

- **Team care.** A few practices said that they intended to maintain elements of team care and increased patient care responsibilities for non-GP staff. Nurse-led clinics and care coordination were specific examples of initiatives practices developed under HCH and intended to maintain after withdrawal.

- **Quality improvement.** Practices reported an intention to maintain quality improvement measures put in place to facilitate HCH, including data quality measures and reporting of specific measures using practice clinical management software and plugins.

- **Financial model.** While the direct financial benefit to GPs and/or the practice was front of mind for many practices that withdrew, there were examples of practices that thought that the financial model was working well, but withdrew for other reasons:

  "From a financial side the model was working brilliantly, by the end of June we had 4 nursing staff and 5 receptionists, and the daily volume of consultations was normally over 100 and add to this we only had one GP at that time … I was more managing from a financial side and all I can say is that the numbers worked and allowed us to bring on more staff that could support [the GP] and produce great patient-centred outcomes. The only point I need to raise in regard to that side is that the GP didn't take any % of the HCH funding initially, we were postponing that until we had been able to work out that side of the business model. I am sure that in some clinics that could be an issue if you potentially have GPs wanting % of these funds, we were able to allocate it all to the nursing and allied health side and build the team and services up firstly."
  [CFO, Exit survey]

3

HCH patients

Box 3: Chapter summary

Between October 2017 and June 2019, 11,332 patients were enrolled in HCH. Patients were most commonly assigned to tier 2 at enrolment (49% of patients), followed by tier 3 (33%) and tier 1 (18%).

At the trial end on 30 June 2021, 7,742 (68%) patients remained. Of these, 1,053 (13.6%) were re-allocated to a different tier at least once before the trial ended. There were both upward and downward movements in the tiers, with more patients moving to a more complex tier than they were assigned at enrolment.

Patients allocated to tier 3 at enrolment were more than four times as likely to die than patients in tier 1, and 1.6 times as likely to die as patients in tier 2. Older patients, males and patients allocated to a more complex tier at baseline were more likely to die during the follow-up period.

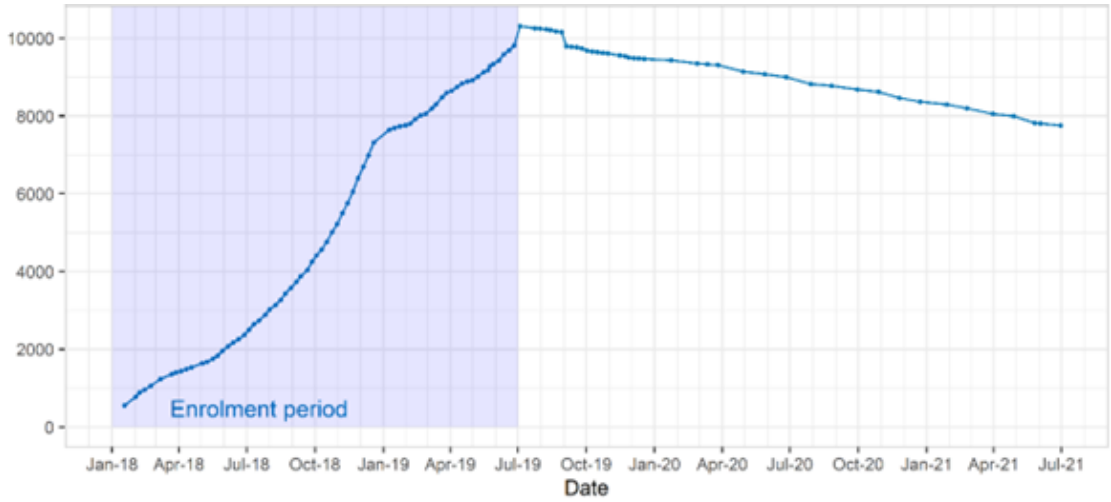
More than one third of patients who withdrew did so because their practice withdrew. Among all patients who enrolled in the trial, 7.3% opted out. In interviews with practices, staff commented that patients who opted out did not understand the HCH model or wanted more time with their GP. Patients who withdrew from the trial for reasons other than their practice withdrawing tended to be slightly older and allocated to a more complex tier on enrolment compared with patients who remained in the trial.

Practices started enrolling patients in the trial from October 2017. Enrolment closed on 30 June 2019. Figure 4 shows the trend in the number of active patients – those who remained in the trial – with the shaded area highlighting the enrolment period. Enrolments increased slowly during the first half of 2018, then more rapidly through to the end of 2018. Enrolments then slowed again, with relatively steady increases through to the end of the enrolment period. From the end of the enrolment period there was a gradual attrition of patients. Table 8 shows the reasons for withdrawal.

At enrolment, patients were assigned to one of three risk tiers, which determined the level of bundled payments made to the practice. Figure 6 (p. 40) describes the characteristics of each tier. The Department of Health estimated that of the population participating in the HCH trial, approximately 9.5% would be tier 3, 45% tier 2, and 46% tier 1.[15] The profile that eventuated was very different to this (Table 6); with most patients were assigned to tier 2 (49%), followed by tier 3 (33%) and tier 1 (18%). Table 6 shows other characteristics of enrolled patients.

[15] Australian Government Department of Health. (2016b). *Factsheet: Stage one modelling* http://www.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes

Figure 4: Number of patients in the HCH trial



Source: Health Professional Online Services (HPOS) data to 30 June 2021.

Table 6: Key characteristics of HCH patients

Characteristic	Patient status[1]		
	Active	Withdrawn	Total
Total patients	**7,742**	**3,590**	**11,332**
Sex[2]			
Female	4,189 (54.1%)	1,909 (53.2%)	6,098 (53.8%)
Male	3,553 (45.9%)	1.681 (46.8%)	5,234 (46.2%)
Age group at enrolment[3]			
0 to 17	134 (1.7%)	37 (1.0%)	171 (1.5%)
8 to 24	167 (2.2%)	46 (1.3%)	213 (1.9%)
25 to 44	971 (12.5%)	276 (7.7%)	1,247 (11.0%)
45 to 64	2,580 (33.3%)	1,089 (30.3%)	3,669 (32.4%)
65 to 74	1,965 (25.4%)	903 (25.2%)	2,868 (25.3%)
75 to 84	1,461 (18.9%)	805 (22.4%)	2,266 (20.0%)
85+	464 (6.0%)	434 (12.1%)	898 (7.9%)
Risk tier at enrolment[3]			
Tier 1	1,427 (18.4%)	585 (16.3%)	2,012 (17.8%)
Tier 2	3,909 (50.5%)	1,665 (46.4%)	5,574 (49.2%)
Tier 3	2,406 (31.1%)	1,340 (37.3%)	3,746 (33.1%)

Notes: [1] "Active" means patients in the trial on 30 June 2021. Withdrawn means patients who were enrolled any time from 1 October 2017 to 30 June 2019 but withdrew before 30 June 2021. [2] Difference between active and withdrawn patients not significant (p=0.365). [3] Difference between active and withdrawn patients is significant (p<0.001).

Source: Health Professional Online Services (HPOS) data to 30 June 2021.

Tier changes

Among the patients who were still in the trial until 30 June 2021, 1,053 (13.6%) were re-allocated to a different tier at least once before 30 June 2021 (Table 7). Of the 1,427 patients allocated to tier 1, 381 (26.7%) moved to a more complex tier. Of patients initially allocated to tier 2, 443 (11.3%) moved to tier 3 and 97 (2.5%) to tier 1. Of patients initially allocated to tier 3, 128 (5.3%) moved to tier 2 and a further 4 (0.2%) to tier 1.

Table 7: Tier changes of patients still in the trial on 30 June 2021

Tier at enrolment	Total patients	Tier at follow-up[1]		
		1	2	3
Tier 1	1,427	1,046 (73.3%)	313 (21.9%)	68 (4.8%)
Tier 2	3,909	97 (2.5%)	3,369 (86.2%)	443 (11.3%)
Tier 3	2,406	4 (0.2%)	128 (5.3%)	2,274 (94.5%)

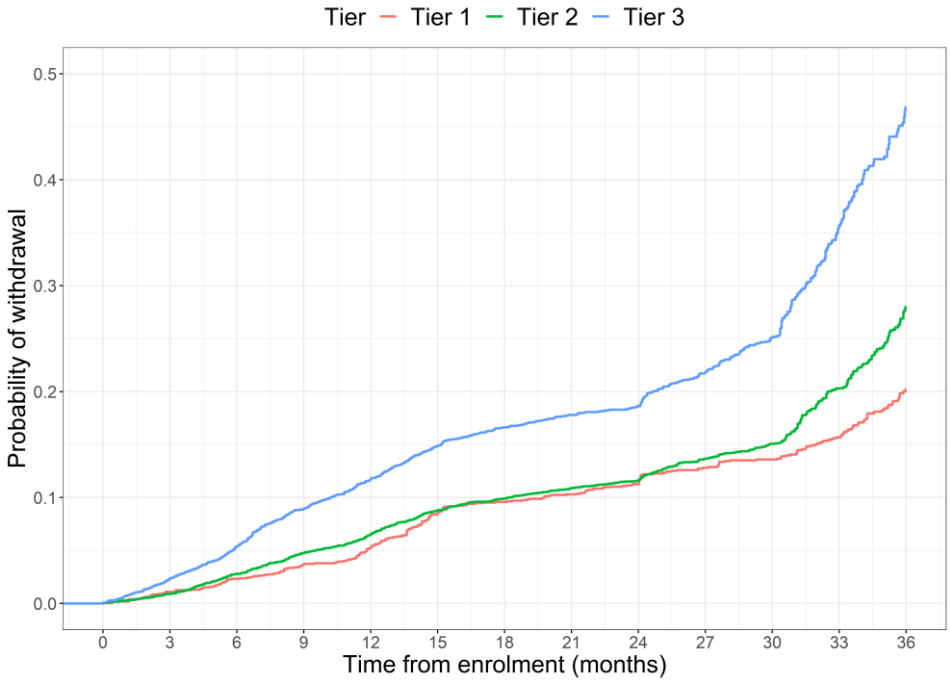
Notes: [1] Variable follow-up periods not necessarily aligning with the requirement to review patients every 12 months following enrolment.
Source: Health Professional Online Services (HPOS) data as of 30 June 2021.

Patient withdrawals

Of the 11,332 patients who enrolled, 7,742 (68%) were still in the trial at its end on 30 June 2021 (Table 6). Patients who had withdrawn tended to be slightly older (34.5% vs. 24.8% 75 years or older; $p<0.001$) and allocated to a more complex tier at baseline (37.3% vs. 31.1% in tier 3; $p<0.001$) than patients who remained in the trial.

Patients were recruited over a 21-month period (October 2017 to June 2019), and by 30 June 2021, patients were in the trial for periods between 24 and 45 months. Therefore, examining differences in withdrawal rates between groups of patients at a particular point in time may be misleading, as the groups may have been in the trial for different lengths of time. Figure 5 shows the probability of patients withdrawing from the trial as a function of the time from enrolment. In calculating the denominator for the curve, patients who withdrew because their practice withdrew were removed (at the time point the practice withdrew) and are not considered to have withdrawn from the trial themselves. Separate lines are fitted for risk tier at the time of enrolment. The Figure supports the data presented in Table 6, which shows that patients in tier 3 were more likely to withdraw from the trial than patients in the other two tiers.

Figure 5: Probability of patients withdrawing from HCH by time from enrolment and tier



Notes: Time cut-off at 36 months.
Source: HPOS to 30 June 2021.

More than one third of patients who withdrew did so because their practice withdrew (Table 8). Among all patients who enrolled, 7.3% opted out of the trial. In interviews with practices, staff commented that patients who opted out did not understand the HCH model or wanted more one-on-one time with their GP. Other reasons for withdrawing included that the patient was no longer with the practice, the patient died, or the patient moved from the area.

Table 8: Number of patients withdrawing from HCH and reasons, 30 June 2021

Reason	Tier n (% of all patients within the tier)			Total n (% of all patients: n=11,332)
	1 (n = 2,012)	2 (n =5,574)	3 (n = 3,746)	
Patient died	37 (1.8%)	168 (3.0%)	310 (8.3%)	515 (4.5%)
Patient moved from the area	44 (2.2%)	186 (3.3%)	168 (4.5%)	398 (3.5%)
Patient opted out	172 (8.5%)	378 (6.8%)	274 (7.3%)	824 (7.3%)
Patient no longer with the practice	69 (3.4%)	257 (4.6%)	225 (6.0%)	551 (4.9%)
Practice withdrawn from HCH	262 (13.0%)	668 (12.0%)	361 (9.6%)	1,291 (11.4%)
Other	1 (0.0%)	8 (0.1%)	2 (0.1%)	11 (0.1%)
Total	**585 (29.1%)**	**1,665 (29.9%)**	**1,340 (35.8%)**	**3,590 (31.7%)**

Source: HPOS to 30 June 2021.

Table 8 shows that patients allocated to tier 3 at enrolment were more than four times as likely to die than patients in tier 1 (8.3% vs. 1.8% of patients enrolled in the tier), and 1.6 times as likely to die as patients in tier 2 (3.0% vs. 1.8%). Unadjusted and adjusted hazard ratios (for risk of dying) from a survival analysis technique that adjusts for both different lengths of follow-up time and clustering of patients within practices are presented in Table 9.

The hazard ratios suggest that older patients, males and patients allocated to a more complex tier at baseline were more likely to die during the follow-up period.

Table 9: Risk of death by level of baseline characteristics

Variable	Level	Unadjusted hazard ratios		Adjusted hazard ratios	
		HR (95% CI)	p	HR (95% CI)	p
Tier	1	Referent		Referent	
	2	2.60 (1.55 to 4.35)	<0.001	2.45 (1.46 to 4.11)	<0.001
	3	8.45 (5.09 to 14.00)	<0.001	7.34 (4.41 to 12.22)	<0.001
Age group	45 to <65	Referent		Referent	
	65 to <75	1.22 (0.91 to 1.62)	0.177	1.42 (1.07 to 1.89)	0.015
	85+	6.39 (4.81 to 8.48)	<0.001	5.72 (4.32 to 7.56)	<0.001
Gender	Females	Referent		Referent	
	Males	1.30 (1.04 to 1.62)	0.019	1.41 (1.13 to 1.76)	0.002

Source: HPOS data 30 June 2021.

Key evaluation question 1: How was the HCH model implemented and what were the barriers and enablers?

Key evaluation question 1 focusses on the activities undertaken to implement the HCH trial and lessons.

At the program level, this question concerns **how practices were recruited** to participate in the trial and whether this resulted in an adequate mix of practice types, settings and enrolled patients to test the model, **what training and support was made available** to practices and whether these assisted in practices' transformation efforts, **the utility and effectiveness of the RST** in identifying high risk patients and the **administrative aspects** for practices in implementing and operating the model.

At the PHN level, this question looks at **PHNs' roles in the implementation**. It also looks at how PHN/state/territory/Local Hospital Network (LHN) quality improvement/chronic disease management initiatives were leveraged to assist the HCH implementation.

The chapters in this section answer the following sub-questions of key evaluation question 1:

- 1.01 What program level activities were undertaken to assist implementation?
- 1.02 How were practices recruited to participate in the HCH program?
- 1.03 How was HCH training strategy implemented?
- 1.04 What infrastructure and processes were commissioned to support processes for risk stratification and patient enrolment?
- 1.05 How effective and efficient were the program's administrative processes, including for patient enrolment, claims management, monitoring program processes, and managing program compliance and integrity?
- 1.06 What roles did PHNs play in the HCH implementation?

4

HCH trial initiation

Box 4: Chapter summary

The Department of health developed and commissioned infrastructure and supports for the trial, which included an incentive grant for practices, guidelines for practices and patients, software for risk stratification, practice facilitation and support provided through PHNs, training for practices and practice facilitators based in the PHNs, changed payment arrangements for HCH patients (the bundled payment) and facilities to support the changed payment mechanisms, an audit and compliance system, and evaluation of the trial with formative and summative components.

Ten PHN were selected from which practices would be drawn for the trial. The regions were chosen to maximise geographic and socio-economic diversity amongst the populations represented and leverage chronic disease programs operating in these regions. Initially practices were recruited through an expression of interest (EOI), and subsequently suggested by the PHNs. Practice recruitment started in 2016 and continued after the launch of the trial in October 2017, through to June 2018. It was necessary to continue to recruit practices after the trial started as some that were selected through the EOI process didn't take up the offer, and some that were recruited withdrew once they understood the requirements better. This highlights that practices needed more information before they applied to participate in the trial, and that PHNs could have been more closely involved in the initial recruitment to provide information to practices and advise on practices' readiness.

Nationally the trial was overseen by an Implementation Advisory Group (IAG). Five specialised working groups reporting to the IAG contributed to the development, design, modification and monitoring of the trial. The Department also met regularly with the 10 participating PHNs throughout the trial, and regional or state-based groups were established within the 10 PHN regions to oversee the trial within their regions.

Background

Responding to the Primary Health Care Advisory Group (PHCAG) report, the Australian Government announced the HCH trial in March 2016.[16] The trial was initially scheduled to begin in July 2017 and continue through to June 2019. Up to 200 practices from 10 PHN regions (of the 31 Australia-wide) were to participate. The 10 PHN regions were selected to maximise geographic and socio-economic diversity amongst the populations represented and leverage chronic disease programs operating in these regions.[17] They were:

[16] Australian Government Department of Health. (2016c). *Health Care Homes announcement media release* http://pandora.nla.gov.au/pan/154649/20160508-0839/www.pm.gov.au/media/2016-03-31/healthier-medicare-chronically-ill-patients.html.

[17] Australian Government Department of Health. (2016d). *Health Care Homes Grant Guidelines 4 November 2016*

- Perth North
- Adelaide
- Country South Australia
- South Eastern Melbourne
- Western Sydney
- Nepean Blue Mountains
- Hunter, New England and Central Coast
- Tasmania
- Northern Territory
- Brisbane North

As part of the program, eligible patients with chronic and complex health conditions would be invited to enrol with a participating practice – their HCH. The HCH was to provide patients with a "home base" for coordination, management, and support of their conditions. Patients would nominate a preferred GP within the HCH. A tailored care plan would be developed by the primary care team in partnership with the patient.

Practices would receive a bundled payment for enrolled patients. The payment was aimed to cover services related to their chronic conditions, departing from the Medicare fee-for-service model. The level of the bundled payment was based on the tier to which the patient was assigned, which in turn reflected the practices' assessment of their risk of hospitalisation using the Hospital Admission Risk Program (HARP) tool.

Box 5 describes criteria that patients needed to meet to be eligible to enrol.

Box 5: Patient eligibility for HCH[18]

- Green or blue Medicare Card holders.
- Not a resident of a residential aged care facility.
- Not enrolled in the Department of Veterans' Affairs Coordinated Veterans' Care Program.
- Chronically ill with a score returned from the risk stratification tool (RST) that is above the threshold for patients considered for the program, and the subsequent HARP assessment results in the patient being assigned to one of the three risk tiers.

The *Handbook for general practices and Aboriginal Community Controlled Health Services*[19] outlined the following service delivery features expected of HCHs:

- **Enhanced access to care**. Aimed at supporting a patient's confidence in self-managing their condition through in-hours telephone support, email or video-conferencing, as well as access to after-hours care where a practice already provides this for their patients.

- **Data driven improvement**. HCHs were expected to collect and use data for internal quality improvement processes.

- **Electronic shared care plans**. HCHs needed to ensure that enrolled patients had a shared care plan and could access it. Practices that did not have electronic plans were given until 30 November 2018 to implement compliant software.

[18] Australian Government Department of Health. (2018d). *Health Care Homes Handbook for general practices and Aboriginal Community Controlled Health Services Version 1.4 August 2018*
[19] Ibid.

- **Access to My Health Record**. HCHs needed to be registered with the My Health Record System, and enrolled patients were required to have a My Health Record within a month of enrolment. This requirement was lifted in late 2018.
- **Team-based care**. HCHs were required provide care for enrolled patients using a team-based approach, where the patient (and their carer or family) was also part of the team. One of the aims of the bundled payment was for new roles to be introduced, such as nurse practitioners/ specialists or advanced practice registered nurses, Aboriginal and Torres Strait Islander health practitioners/ workers, care coordinators, medical practice assistants, allied health professionals and pharmacists.
- **Community pharmacy support**. The community pharmacy trial was added in August 2018, aiming to provide HCH patients with access to a community pharmacist to assist them with managing their medications.

Practice selection

A call for expressions of interest (EOI) for participating in HCH was issued on 4 November 2016 and closed on 22 December 2016. The Department received 461 eligible applications. The Health State Network Division, involving the state and territory offices of the Department of Health, initially assessed compliance. In a second stage, a Departmental Assessment Committee reviewed the initial compliance assessment scores then considered the mix of selected practices against a sampling frame proposed by HPA for the evaluation. The sampling frame was used to ensure a minimum number of participating practices were selected for specified categories of ownership, size and location.

Two hundred successful applicants were announced in May 2017 and formal offers made. Some practices decided not to proceed because of change of ownership, business direction, and/ or staffing. PHNs also observed that in some instances practice owners (including the head office of practices belonging to a corporate group) or practice managers had submitted the EOI but had not sufficiently discussed the submission with others in the practice, particularly GPs. Insufficient consultation within the practice resulted in some practices declining the offer to participate, and others who took up the offer to subsequently withdraw.

To achieve the target of 200 HCHs, the Department drew on its reserve list of 136 practices and some of the 125 practices originally considered unsuitable. PHNs were also asked to approach practices to apply.

Following the initial announcement of practices, many PHNs met with the selected practices either individually or as a group. Some PHNs held workshops/information sessions for the selected practices to provide more information about the program. Some of the practices were still deciding whether to proceed with the offer at that stage. One corporate group initiated a roadshow for its practices who were given an initial offer. PHN practice facilitators joined the corporate representatives in the local forums for practices within their region.

Some PHNs developed additional resources to help communicate with practices during the initial recruitment phase. For example, one PHN developed an abridged (10-page) version of the Department's practice handbook as they thought that 30 plus pages were too much for practices to digest at that point. Another PHN outlined the roles of the practice facilitators

and their skill sets so that practices could know who could help and how. The PHNs used the resources they developed in the workshops with practices or took them along to site visits.

The week before the 1 October 2017 start, 173 HCHs had been recruited, with 22 starting on 1 October and the remainder to start on 1 December 2017. However, practices continued to withdraw, and as they did, with help from the PHNs, the Department invited additional practices to join.

In the initial round of interviews, PHNs expressed that there wasn't enough information given to practices about the trial when practices applied, as they observed that some practices were surprised by the requirements articulated in their agreement. The consequences of this were that practices withdrew from the trial once they understood the detail due to having different expectations about what it meant participate, or they took time to understand the detail after they joined the trial, thus delaying patient enrolment. PHNs suggested that the Department could have arranged formal information sessions for prospective HCH practices before applications were due. The sessions could have articulated what a HCH is and the transformation journey expected from practices. They could have also been used to promote the trial. PHNs also suggested that they should have been more closely involved in the initial recruitment of practices, as they could have helped with providing information about HCH to practices and advised on practices' readiness in the selection process.

Program governance

To provide expert advice on the implementation of the program, the Department established a two-tiered governance structure consisting of an overarching Implementation Advisory Group (IAG) and specialised working groups. The specialised working groups were as follows:

- Payment Mechanisms Working Group
- Patient Identification and Risk Stratification Working Group
- Guidelines, Education and Training Working Group
- Evaluation Working Group (EWG)
- Clinical Reference Group.

These groups were initially established in 2016 and contributed to the development, design, modification and monitoring of the trial.

The Department initially engaged with PHNs through existing advisory structures. Once the trial was established, the Department met regularly (initially monthly then quarterly) with the CEOs and/or their representatives from the 10 PHNs participating in the trial. The Department also regularly corresponded with the PHN CEOs (initially weekly and then fortnightly) to update them on developments and to highlight issues that practice facilitators should follow-up with HCHs.

Regional or state-based governance groups were also established within the 10 PHN regions. These usually included representatives from the PHN, local GPs/practices, state/ territory health authorities, the Commonwealth Department of Health, LHNs and peak organisations representing Aboriginal Community Controlled Health Services (ACCHS), consumers and the Pharmacy Guild.

Program infrastructure

The Department developed or commissioned infrastructure and supports for HCH trial, including:

- HCH Grant Guidelines.[20]
- Operational guidelines for HCHs.[21]
- Patient information and handbook.[22]
- Resources targeted for health professionals, HCH practices and consumers.[23]
- Enhancements to the Department of Human Service's (now Services Australia) Health Professionals Online Services (HPOS) system to enrol patients in the trial.
- Enhancements to Medicare payment mechanisms to pay the bundled payment.
- Software to assess patient eligibility for HCH and allocate patients to a tier.
- Online training materials for staff within HCHs.
- Practice facilitation and support provided through PHNs.
- Training workshops and ongoing support for PHN-based practice facilitators.
- Systems for monitoring program implementation, including progress on enrolment and payments related to the program.
- An audit and compliance system.
- An evaluation that included both formative and summative components.

Incentive grant

HCH practices were paid a one-off $10,000 incentive grant (GST exclusive). The amount was "*intended to incentivise participation and facilitate readiness for the program*".[24 (p. 3)] The grant could be used for preparing for and participating in HCH. The incentive was offered under a 'restricted competitive grants program', a consequence of which was the need for a competitive process managed by the Department of Health, through which applicants were assessed against criteria specified in the Health Care Homes Grant Guidelines.[25]

---

[20] Australian Government Department of Health. (2016d). *Health Care Homes Grant Guidelines 4 November 2016*

[21] Australian Government Department of Health. (2019b). *Health Care Homes Handbook for general practices and Aboriginal Community Controlled Health Services Version 1.7 February 2019*. https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-cp/$File/HCH-Handbook-Feb-2019.pdf The initial versions of the Handbook was issued in 2017.

[22] Australian Government Department of Health. (2017c). *Patient Handbook* https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-more-information

[23] Australian Government Department of Health. (2019a). *Health Care Homes—Health professionals*. Retrieved 7/10/2019 from https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-professional

[24] Australian Government Department of Health. (2016d). *Health Care Homes Grant Guidelines 4 November 2016*

[25] Ibid.

Risk stratification tool

The Department commissioned software for risk stratification, which was implemented within practices' IT environments and interfaced with their clinical management systems. The risk stratification process involved two stages: a predictive risk model (PRM) to identify patients potentially eligible for the trial based on their risk of hospitalisation in the next 12 months; and an assessment of clinical factors (such as presence of chronic conditions) and other factors impacting on self-management to confirm eligibility and assign patients to a tier for payment.

Bundled payment

Practices received a bundled payment for services related to HCH patients' chronic conditions. An annual payment rate was set, paid retrospectively on a monthly basis. The payment began when the patient was enrolled in HCH, marked by the patient signing the HCH enrolment/consent form and being registered in the Services Australia Health Professional Online Services (HPOS) system. Enrolment ended when a patient withdrew from the trial due to death or other reasons or when the practice withdrew.

In developing the payment rates, the Department considered spending for about 130 MBS items related to chronic disease. It was estimated that the average total MBS fees claimed by general practices for patients accessing the chronic disease items was $862.[26] Based on this analysis, payments rates for three tiers were set as shown in Table 10.

Table 10: HCH tier payments 2018 (indexed annually thereafter)

HCH tier	Payment
Tier 1	$591 per year
Tier 2	$1,267 per year
Tier 3	$1,795 per year

Source: Australian Government Department of Health (2018d).[27]

The bundled payment was intended to cover the following services:[28] (p. 20)

- comprehensive health assessment
- shared care plan development
- regular reviews
- referral to allied health providers or specialists
- case conferencing
- telehealth services and monitoring
- standard consultations related to the patient's chronic conditions
- after-hours advice and care.

---

[26] Australian Government Department of Health. (2016b). *Factsheet: Stage one modelling* http://www.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes

[27] Australian Government Department of Health. (2018d). *Health Care Homes Handbook for general practices and Aboriginal Community Controlled Health Services Version 1.4 August 2018* .

[28] *Ibid.*

HCHs could still claim for consultations or clinical services not relating to patients' chronic conditions. The HCH Clinical Reference Group developed guidance on this.[29]

HCH patients were not prohibited from consulting other primary care practices, but the patient enrolment/consent form contained the statement "*4. I agree to seek care from my Health Care Home practice on an ongoing basis*".[30] Also, the HCH Funding Assurance Toolkit required that "*The practice encourages an enrolled patient to attend their HCH for all care and, in particular, care that is related to their chronic conditions. This means that visits to other practices by enrolled patients are expected to be minimal (for example, when an enrolled patient is travelling)*".[31 (p. 8)]

A new MBS item – item 6087 – was created to record HCH patients' out-of-pocket expenses so that they could be counted towards the patient's safety net. The item had a rebate value of $1.15.

Practice facilitation and support from PHNs

The Department funded the 10 PHNs involved with the trial to support practices through the HCH implementation. The PHNs were initially funded for three full time equivalent (FTE) positions from July 2017. Two positions were to help practices with transformation. This was the practice facilitator role. One position was to help practices with enrolling patients. Funding for the roles was initially for 12 months (transformation) and 15 months (enrolment) respectively, but subsequently extended through to June 2019 with the extension of the trial. During 2019–20, PHNs were funded for one FTE per 10 practices participating in HCH, with a minimum of one FTE per PHN. During 2020–21, funding scaled back to one FTE per 16 participating practices, with a minimum of one FTE per PHN.

In the rest of this report, the funded PHN staff are referred to as "PHN practice facilitators".

In addition to regular meetings with PHN CEOs and/ or their representatives, the Department met with the PHN practice facilitators each fortnight and sent weekly emails to update them on each practice's progress in enrolling patients, installing and using the RST and undertaking evaluation activities (for example, completing surveys).

---

[29] Australian Government Department of Health. (2018c). *Health Care Homes Clinical Reference Group Q&As*.

[30] Australian Government Department of Health. (2017a). *Health Care Homes Patient Information Statement* https://www1.health.gov.au/internet/main/publishing.nsf/Content/C6EB6F07C8F62954CA2581A90009CA75/$File/HCH%20Patient%20Consent%20Form%20-%20October%202018.pdf

[31] Australian Government Department of Health. (2018b). *Health Care Home Funding Assurance Toolkit March 2018*. https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-assurance-compliance

Training for practices and PHN practice facilitators

The Department of Health engaged AGPAL to develop online training modules for practices and train and coach PHN practice facilitators through train-the-trainer workshops, coaching webinars, and a dedicated national practice facilitator to provide support as required.

Clinical champions

The Department established a network of clinical champions in April 2018 to:

- Support retention of participating practices, particularly those progressing more slowly, by providing leadership, support and advice throughout the trial.
- Assist HCHs in harnessing and building the benefit of the model to patients.
- Promote positive messaging and a collective understanding of the model in practice.
- Drive and support patient enrolment across the trial regions.

Clinical champions came from various backgrounds, including GPs, nurses and practice managers.

Other resources

The Department of Health made available a wide range of resources through its website. They included:

- Resources for health professionals: Videos and overviews of HCH.[32]
- Updates and factsheets: Factsheets, FAQs, articles, information about the evaluation (FAQs, the evaluation plan), HCH and tax, link to AAPM guidance.[33]
- Resources for HCHs: Resources that HCHs can use with patients (for example, HCH brochure and patient handbook), resources that HCHs can use internally (for example, HCH care team handbook, enrolment checklist for clinicians, guide for talking with prospective patients), allied health referral form and infographics for GPs and practice staff, link to evaluation resources.[34]
- Resources for consumers: Overview, benefits, FAQs on My Health record, list of participating practices.[35]

HCH assurance and compliance

The Department of Health's assurance and compliance approach aimed to minimise the following risks associated with the HCH trial:

- incorrect stratification of patients
- non-provision of HCH services to enrolled patients
- systematic double billing under HCH and Medicare.

---

[32] http://www.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-professional
[33] http://www.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-information
[34] http://www.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-resources
[35] http://www.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes

The compliance approach was focussed on education and support. A *Health Care Home Funding Assurance Toolkit*[36] was developed to "*assist practice staff in implementing policies, procedures, systems and day-to-day activities that will result in appropriate use of the HCH bundled payments and billing of MBS items for services provided to enrolled patients*" (p. 4). The toolkit contained:

- strategies for minimising incorrect billing
- a HCH funding assurance manual template including examples of policy statements and operational guidelines that HCHs can use to develop their own MBS billing manual
- a HCH self-assessment checklist
- pre- and post-participation questionnaires for HCHs to rate their HCH funding assurance approach (for example, "*There is at least one person responsible for HCH funding assurance in the practice*" p. 32)
- consequences of incorrect billing under Medicare.

The *Handbook for practices and ACCHS*[37] stated that the Department may use a range of techniques to identify, prioritise and respond to identified risks, including:

- providing education, compliance support and tools
- using established norms and baselines (through data analysis and random audits) to identify outliers, who in turn will receive targeted communications and/ or education
- using environmental scanning, previous audit information, published tip-off line and data analysis to target audits and investigations.

The Department also developed criteria for appropriate delivery of HCH services (Box 6).

Box 6: Appropriate delivery of HCH services

The *Health Care Home Funding Assurance Toolkit*[38] defined "appropriate delivery of HCH services" as services where:

1. *Practice staff comply with the Privacy Act 1988 (particularly, the Australian Privacy Principles and the My Health Records Act 2012 (Cth)), and ensure that personal information collected, used and disclosed is accurate, up-to-date, complete and relevant.*
2. *The practice obtains patient consent for the collection, use and disclosure of personal information for the purpose of the HCH trial before conducting the second stage of the risk stratification process.*
3. *Only the HCH enrolment and consent form provided by the Department is used by the practice for obtaining patient consent to HCH enrolment.*

---

[36] Australian Government Department of Health. (2018b). *Health Care Home Funding Assurance Toolkit March 2018*. https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-assurance-compliance

[37] Australian Government Department of Health. (2018d). *Health Care Homes Handbook for general practices and Aboriginal Community Controlled Health Services Version 1.4 August 2018*

[38] Australian Government Department of Health. (2018b). *Health Care Home Funding Assurance Toolkit March 2018*. https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-assurance-compliance

4. *A copy of each enrolled patient's signed and dated HCH enrolment and consent form is kept on the practice's patient records.*

5. *The HCH services provided by the practice to enrolled patients are consistent with industry agreed best practice and evidenced based disease management protocols, and are applicable to locally developed care pathways.*

6. *Individually tailored shared care plans are developed by the practice in partnership with each enrolled patient (and their carers, where appropriate) and members of the HCH team, with input provided from any participating nominated allied health providers. The practice ensures that all patient care plans:*

   - *incorporate all of the minimum requirements for shared care planning identified in the HCH Handbook and online training manual*
   - *reflect the patient's level of complexity and need, and their tier level*
   - *are approved by the patient's nominated preferred GP, who is responsible for the clinical care delivered to the enrolled patient and ensuring that care plans are followed*
   - *are developed in the presence of, and agreed by the enrolled patient (or their nominated carer, where appropriate), who is also given a printed copy*
   - *are accessible to and shared between health care providers responsible for their care*
   - *are regularly reviewed by the practice and the patient's nominated preferred GP in consultation with the enrolled patient (and their carers, where appropriate) and involved allied health care providers—as a guide, this is expected to be at least:*

     - *once a year for tier 1 patients (or more frequently if the patient's needs change)*
     - *twice a year for tier 2 patients (or more frequently if the patient's needs change)*
     - *three times a year for tier 3 patients (or more frequently if the patient's needs change).*

   - *are updated whenever a patient's health or health care needs change.*

7. *The practice ensures that all patients are enrolled in the My Health Record system* and that all patients have an up-to-date Shared Health Summary. Shared Health Summaries should be updated as patient's health needs and status changes.*

8. *The practice provides all enrolled patients with information and support that helps them to understand:*

   - *the care they can expect to receive from their HCH;*
   - *their roles and responsibilities as enrolled patients;*
   - *any out-of-pocket expenses they may incur and how these will be linked to their Medicare Safety Net threshold/s;*
   - *who they can contact for details of in-hours and out-of-hours care; and*
   - *where appropriate, the circumstances when they might need to seek support from their local hospital.*

9. *The practice assists enrolled patients to:*

   - *be actively involved in planning and managing their care, and in making decisions about their care; and*
   - *keep healthy and better self-manage their chronic conditions.*

10. *The practice encourages an enrolled patient to attend their HCH for all care and, in particular, care that is related to their chronic conditions. This means that visits to other practices by enrolled patients are expected to be minimal (for example, when an enrolled patient is travelling).*

11. *The practice supports enrolled patients with life limiting health conditions (or who have a condition that may lead to a loss of capacity to make decisions) with advance care planning for*

end-of-life care, including preparing and keeping up to date an Advance Care Directive (ACD).

12. *The practice ensures that patient ACDs are uploaded to the patient's My Health Record.**
13. *The practice withdraws patients from enrolment on the DHS HPOS system as soon as the practice ceases delivering HCH services to them or when an enrolled patient dies.*
14. *The practice confirms the status of each registered enrolled patient on the DHS HPOS system twice a year through completing the biannual confirmation statement.*
15. *The practice reports any enrolment errors to DHS as soon as they become aware that an error has been made.*

** This requirement was lifted in late 2018.*

5

Training and support

Box 7: Chapter summary

The Department of Health commissioned online training modules to be developed for practices and PHNs. The modules were not widely accessed by practices, especially by GPs and nurses, where approximately 5% of the GPs and 9% of the nurses participating in the trial completed the foundational modules (1 to 5). The main issue was with starting the modules, because most that started a module completed it (completion rates ranged from 76% for module 2 Engaged leadership to 89% for module 9 Prompt access to care).

In keeping with the philosophy of the PCMH, the modules were created to be relevant to all roles within the practice (clinical and non-clinical). However, according to practices and PHNs, this was one of the shortcomings of the modules. Others were length and thus time to complete, repetition and a theoretical rather than a practical focus.

Nevertheless, individuals who completed the modules reported improved understanding or confidence in the topic area following completion and practices tended to rate the modules as "moderately effective" for preparing them for implementing HCH.

PHN practice facilitators initially participated in two train-the-trainer workshops in August and November 2017. They described difficulty providing support and training to practices at the same time as learning about HCH themselves. They felt they had little guidance or clear expectations of their role at the beginning of the trial.

At the beginning of the trial, the PHN practice facilitators spent time building relationships with practices and helped practices with the administrative tasks of setting up for HCH (including implementing software), assessing practice readiness, and identifying and implementing strategies to recruit patients. Following the end of the enrolment period, the facilitators focussed on helping practices with their model of care and building the healthcare "neighbourhood" by raising awareness of the program amongst other providers.

The main enabler for PHN practice facilitators was collaboration and networking with other facilitators.

Facilitator turnover was an ongoing issue that negatively impacted both PHNs and practices throughout the trial. Practices were largely positive about the support they received from their PHN practice facilitators to implement HCH. Where they were critical, they were frustrated with the turnover of practice facilitators or they would have liked more support.

The Department of Health engaged AGPAL to develop online training modules for HCHs. AGPAL also trained and supported the PHN practice facilitators.

The online training modules for practices were organised into 11 modules (Table 11). The first six modules were released in August 2017, and the remaining in December 2017.

Individuals completing the training modules could claim continuing professional development points from the Australian Association of Practice Management (AAPM), the Australian

College of Rural and Remote Medicine (ACRRM), the Australian Practice Nurse Association (APNA) or the Royal Australian College of General Practitioners (RACGP).

Practices' experiences with the online training modules

Data compiled by AGPAL showed that at the beginning of September 2018, 1,822 people had received a login for the online training modules. This included practice staff as well as PHN practice facilitators. Of the 1,822 people who were provided a login, 955 had started module 1 and 748 completed it (78%, Table 11). The number that started subsequent modules steadily decreased. Nevertheless, the proportion of people completing the modules increased with module 2, then remained steady except for the last module where it decreased again. This suggests that the main issue was people starting the modules.

Table 11: Users starting and completing HCH online training modules[1]

Module		Number of users started	Number of users completed	Percentage of users completed
1	Introduction to HCH	955	748	78%
2	Engaged leadership	621	470	76%
3	Patient enrolment and payment processes	520	447	86%
4	Data driven improvement	412	348	84%
5	Team-based care	374	321	86%
6	Developing and implementing the Shared Care Plan	312	273	88%
7	Patient-team partnership	270	228	84%
8	Comprehensive and coordinated care	235	198	84%
9	Prompt access to care	213	189	89%
10	Population management	194	161	83%
11	Quality primary care into the future	101	78	77%

Notes: [1] As at 6 September 2018.
Source: AGPAL, September 2018.

Twenty-seven GPs and 57 nurses completed the foundation modules (1 to 4), and 10 GPs and 11 nurses completed the implementation modules (5 to 11). Based on the staffing numbers received through the round 1 practice survey, the numbers completing the foundation modules represented approximately 5% of the GPs participating in HCH and 9% of nurses.

AGPAL data indicated that individuals who completed the modules reported improved understanding or confidence in the topic area following completion.

Through the practice survey undertaken for the evaluation, most practices rated the modules as "moderately effective" for preparing them for implementing HCH (Table 12).

Table 12: Practice ratings of the effectiveness of the HCH online training modules for preparing the practice for implementation

Module	Very effective	Moderately effective	A little effective	Ineffective
1 Overview of the HCH model	12 (15.6%)	34 (44.2%)	23 (29.9%)	8 (10.4%)
2 Engaged leadership	11 (14.9%)	32 (43.2%)	20 (27.0%)	11 (14.9%)
3 Patient enrolment (incl. risk stratification) and payment	14 (18.9%)	31 (41.9%)	18 (24.3%)	11 (14.9%)
4 Data-driven improvement	14 (19.4%)	28 (38.9%)	21 (29.2%)	9 (12.5%)
5 Team-based care	15 (21.1%)	29 (40.8%)	19 (26.8%)	8 (11.3%)
6 Developing and implementing the shared care plan	12 (17.9%)	28 (41.8%)	16 (23.9%)	11 (16.4%)
7 Patient-team partnership	12 (17.9%)	24 (35.8%)	22 (32.8%)	9 (13.4%)
8 Comprehensiveness and care coordination	10 (15.4%)	25 (38.5%)	19 (29.2%)	11 (16.9%)
9 Prompt access to care	12 (18.5%)	24 (36.9%)	20 (30.8%)	9 (13.8%)
10 Population management	9 (13.8%)	27 (41.5%)	18 (27.7%)	11 (16.9%)
11 Quality primary care and the future	11 (17.5%)	26 (41.3%)	16 (25.4%)	10 (15.9%)

Source: Practice survey R2, Nov 2018–Mar 2019, question 25.

Through interviews, practice staff complained about the length of the modules, repetition, the inability to move to the next module until you had completed a previous one, and the theoretical rather than practical focus of the content. They also thought that the modules should have been role-specific, that is, that information should have been pitched differently for different roles within the practice.

Practices suggested ways to improve the modules (Table 13). The top suggestions were to shorten them, reduce repetition, make them more concise and provide additional practical examples/case studies.

Table 13: Top ways in which the online training modules could be improved (including responses from withdrawn practices)

Response	n (%)	Response	n (%)
Shorter in length	54 (51.4%)	Training videos/ visuals	4 (3.8%)
Less repetition	19 (18.1%)	Additional focus on GP engagement	2 (1.9%)
More simplified/concise	13 (12.4%)	Additional team involvement	2 (1.9%)
Additional practical examples/case studies	12 (11.4%)	Better questions to test knowledge	2 (1.9%)
More engaging material	9 (8.6%)	Fewer activities	2 (1.9%)
More user friendly and accessible	6 (5.7%)	Language easier to understand	2 (1.9%)
Additional time to complete training	5 (4.8%)	Better leadership to drive change	1 (1.0%)
In person training/workshop	5 (4.8%)	Increased financial incentives	1 (1.0%)
Role specific modules	4 (3.8%)	More print options	1 (1.0%)

Source: Practice survey R2, Nov 2018–Mar 2019, question 26.

In their responses to a survey, PHNs also suggested improvements to the online modules, including:

- identify the essential and desirable features of the model
- more instruction on the "*global concepts beyond the model*" [PHN 9, survey, R1]
- consider where practices are at currently (that is, the modules should be "*better targeted to the reality of where general practice is at not where they should be*" [PHN 9, survey, R1])
- include activities to reinforce learning at the end of each module (in addition to practical activities)
- increase video content
- provide more concise and relevant practice examples.

Preparation of PHN practice facilitators

PHN practice facilitators were initially trained in their roles through two train-the-trainer workshops in 2017. The first, held in August, covered the topics of the first six online training modules. The second, held in November, covered the remaining modules. What facilitators liked most about the workshops was sharing information with other facilitators. This was supported by the analysis of participant feedback from the training workshops provided by AGPAL, where the two most highly rated sessions were those where facilitators shared their implementation experiences. At the workshops, PHN practice facilitators would have also liked to hear more from speakers working in practices that had implemented HCH-like models in Australia or from other countries whose systems were like the Australian health care system (for example, New Zealand) rather than from speakers from the United States, whose health care system they considered to be very different from Australia's.

A third refresher workshop was run in November 2019 as part of the HCH Forum hosted by the Department of Health.

Following the initial workshops, AGPAL ran regular webinars focussed on different elements of the PCMH and involved guest speakers. A national facilitator supported PHN practice facilitators with questions or challenges. PHNs were generally very positive about the webinars:

> "*I think the webinars have been great with [AGPAL staff member]…I haven't got anything to say that hasn't worked for us.*" [PHN 10, Interview, R5]

Box 8 lists other support activities.

Box 8: Training and support provided to PHN practice facilitators

- Coaching webinars, including train-the-trainer webinars for new practice facilitators (and those requiring a refresher) and ongoing webinars emphasising different aspects of HCH.
- Pioneers of change, a platform for practice facilitators to showcase experiences, highlight areas of challenge, different approaches to implementation, solutions, and resources.
- Review of bi-monthly reports provided by the practice facilitators, capturing HCH-related events and how these can be improved, identify and encourage collaboration on common issues and suggest solutions to moving practices through transformation.

- Online learning collaborative, an online interactive forum aimed to foster a community of practice through the proactive sharing of knowledge and experience including issues or challenges, strategies and solutions, quality Improvement approaches, tools and resources, articles, case studies and best practice.
- Practice facilitator buddy scheme, linking recently appointed practice facilitators with more experienced facilitators to support learning, development and growth.
- Quarterly webinars, aimed at sharing highlights, learnings, strategies, and resources collected from the practice facilitators.

PHN practice facilitator role challenges

At the beginning of the trial, PHN practice facilitators described difficulties providing support and training to practices at the same time as learning about HCH themselves. They felt they had little guidance or clear expectations of their role at this time. One PHN suggested that the train-the-trainer workshops designed to prepare facilitators for their role could have been used to explore the differences between a PHN's usual support role of general practices and the facilitation role for HCH:

> *"Each PHN has just been left to sort of work their own way through it…there's lots of support from the Commonwealth and AGPAL, but I don't know that we've really landed on what does it mean and what does it really look like and what are the skill sets that you need to do this…."* [PHN 2, interview, R1]

As the trial progressed, facilitators developed their own understanding of the role. During subsequent rounds of interviews for the evaluation, facilitators reported having a much better understanding of the model and how to support practices with program implementation:

> *"…in the next phase, the next wave of practices, we know the good, the bad and the ugly basically. We'll know exactly what we're looking for, how the install is going to be because we've ironed everything out now."* [PHN 10, interview, R2]

Some PHN facilitators reported feeling overwhelmed with their role due to competing demands:

> *"It's hard for me to say because, to be honest, I'm just feeling stretched in different directions at the moment, and I don't feel like I've been able to do Health Care Homes the justice that I would have liked. I understand the content of it, but I wish I could be more hands-on and supportive to the practices. I just haven't had the time and capacity."* [PHN 3, Interview, R5]

Facilitator turnover was an ongoing issue that negatively impacted both PHNs and practices throughout the trial. An indicator of the extent of the turnover is that of the original cohort of 45 PHN practice facilitators trained for the role before the start of the trial (August to November 2017), five individuals remained in the role at the end of the trial. New facilitators had to simultaneously re-establish relationships with practices and rebuild trust while learning about the program. New facilitators reported that they received little training or handover from previous facilitators and had to learn on the job:

> *"…I came into a position where the team was morphing into something different… I felt that just looking at my role I didn't have a clear understanding… I read the handbook and all of that. And how to support and facilitate but it was a lot of information to take in to just go into a practice and assist the practice."* [PHN 5, interview, R2]

> *"Another challenge is we're really reactive to things that happen out in practice. So, often that means we don't get a chance to prepare or educate ourselves. So [practice facilitator], for example, when I came on board had not been trained in Health Care Homes other than being given access to the online modules and saying here you go, do the modules. That was it. So, there was no handover or training…I know that that was a source of frustration…you learn stuff when things go wrong, we've found."* [PHN 8, Interview, R3]

By the end of the trial, a few PHNs commented that general uncertainty around the future of the program was difficult for facilitators and it was challenging to make decisions about PHN team arrangements.

PHN practice facilitator role enablers

PHN practice facilitators stated that collaborating with other facilitators was a significant enabler that helped them develop a stronger understanding of the model, establish their roles and become more effective in supporting practices. Facilitators reflected that the collaboration and networking between PHNs evolved as the trial progressed. Several PHNs stressed the positive effects of these partnerships and sharing resources, ideas and knowledge:

> *"If I do have any questions about something, I might give [practice facilitator in another PHN] a call…and you can have these conversations with each other…The ability to pick up the phone and just call one of our colleagues that's doing the same role in another part of Australia has probably been one of the biggest enablers to learning for me.* [PHN 1, Interview, R5]

> *"I think even all the practice facilitators, throughout the PHNs, we've developed and built up that relationship. So, it's always there, there's always somebody to call. The information and support that we're getting has been quite significant to our role."* [PHN 2, Interview, R3]

> *"Sharing resources maybe might be something that would assist because [the PHNs are] all preparing the same documentation, the sharing of that would be ideal."* [PHN 10, Interview, R3]

PHN practice facilitators also found the regular meetings with the Department of Health helpful because they could keep up-to-date with what other PHNs and practices were doing, and because they could get information about trial developments directly from the Department:

> *"The Department of Health monthly teleconferences, I thought they were great. Super useful and to a degree have some pretty handy discussion in the fact that we're talking to the Department. And they could pretty quickly give you an answer*

> *to a question rather than having to go through channels and waiting for a response, so, that's all been super useful. On the monthly teleconference we go through the entire PHNs from around the country, and it's good to hear what other PHNs are doing with their practices and where their practices are at."* [PHN 9, Interview, R5]

Therefore, opportunities for collaboration and networking were most values by PHN practice facilitators, as was the ability to get information about trial developments or answers to questions quickly.

6

Risk stratification

Box 9: Chapter summary

The Department of Health commissioned a risk stratification tool (RST) for practices to identify patients with high coordination and care team needs. The process involved two steps: a predictive risk model (PRM) to identify patients at high risk of hospitalisation in the next 12 months; and an assessment of clinical factors and factors affecting self-management using the Hospital Admission Risk Program (HARP) tool. The HARP score was used to determine the tier of the patient for the purposes of the bundled payment.

Most practices experienced challenges in installing the RST software. Some of the practices that didn't take up the initial offer to participate in the trial and some that withdrew soon after they joined identified problems with the software (installing it and/or compatibility with their other software), as reasons for not continuing with HCH.

While most practices reported that the patients identified at the first stage of risk stratification were suitable for enrolment, there were other patients who were also suitable that the PRM didn't identify. GPs could override the score returned by the PRM and invite patients to undertake the second stage of the process to assess eligibility. Of the 12,377 patients for whom valid baseline data were available, 30% (3,745) had a HARP completed because the GP overrode their PRM score. The override function was more likely to be used for patients allocated to tier 1 (40.8%) than to tier 2 (32.4%) or to tier 3 (20.5%).

The main issue with the HARP that practices reported was that it scored all chronic diseases equally and didn't consider their severity. Also, some chronic diseases were missing altogether (for example, cancer). Some of the questions in the HARP were also described as "vague" or "subjective", and stakeholders thought that training and further guidance on interpreting the questions would be helpful. Others considered that some of the items failed to appropriately account for extreme levels of disadvantage faced by patients in some communities such as remote Aboriginal communities.

Some practices completed a HARP for specific patients before they approached those patients to enrol. This was to determine whether the tier allocated would be financially viable for the practice. Almost one third of practices said that they didn't enrol some patients flagged as potentially eligible by the RST because the payment level would be insufficient to cover the costs of their care needs.

Some practices reported not re-stratifying patients as regularly as required by the program rules. Reasons were lack of time, limited face-to-face interactions with patients during the COVD-19 pandemic, few perceived changes in their patients' conditions and a lack of motivation to do what they considered an administrative activity. When they re-stratified and patients went up a tier, this was usually attributed to a new diagnosis, the progression of a patient's existing conditions or the natural ageing process. A small number of practices reported a slight improvement in some of their HCH patients who they moved to a less complex tier. However, the payment scheme did not provide an incentive to do this.

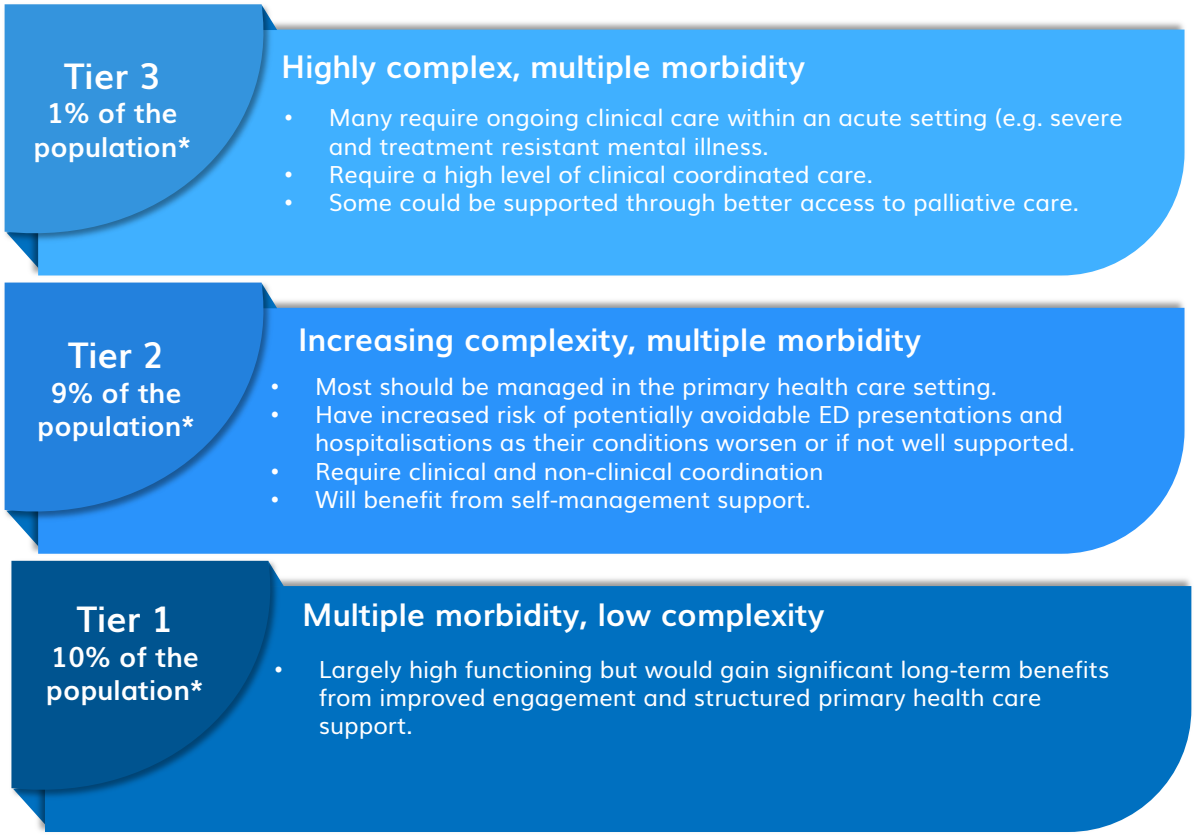
De-identified data from the RST were available for analysis by the evaluation team, and results of this analysis are presented in this chapter.

The HCH trial demonstrated the feasibility of real-time risk stratification systems implemented within Australian primary care services using practice data. In the trial, risk stratification of practice

populations was used principally for "case finding" and as a basis for allocating patients to payment tiers. Risk stratification has uses beyond case finding, including practice population profiling, benchmarking, utilisation review and quality improvement and performance measurement. It can also be used to predict risk of a range of outcomes beyond hospitalisation. These uses are all important for supporting future primary care reform. Chapter 26 (p. 341) outlines potential directions for risk stratification.

The PHCAG recommended the use of risk stratification to identify patients with high care and coordination needs. The Department commissioned the development of a risk stratification tool (RST) to be used for this. The process involved two stages: a predictive risk model (PRM) to identify patients at high risk of hospitalisation within 12 months[39] and an assessment of clinical factors and factors affecting self-management using the Hospital Admission Risk Program (HARP) tool (Western HARP, 2009). The HARP score was used to determine the tier of the patient for the purposes of the bundled payment. Figure 6 shows the Department of Health's descriptions of the three tiers.

Figure 6: Tier characteristics



*Notes: * Estimates based on analysis of available population, hospitalisation and Medicare data.*
Source: Australian Government Department of Health (2016a).[40]

[39] Khanna, S., Rolls, D. A., Boyle, J., Xie, Y., Jayasena, R., Hibbert, M., & Georgeff, M. (2019b). A risk stratification tool for hospitalisation in Australia using primary care data [Research Support, Non-U.S. Gov't]. *Scientific Reports*, *9*(1), 5011.

[40] Australian Government Department of Health. (2016a). *Factsheet: Patient eligibility* http://www.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes

A feature of the RST was an override mechanism. If a GP encountered a patient who in their clinical opinion was at risk but was not identified as such by the tool (and this was not due to data errors or omissions), the GP could initiate a HARP assessment. A note in the software was required as justification for the override.

The certificate generated by the RST was valid for 12 months, at which stage the HARP needed to be repeated to review the tier. The tier could also be reviewed within the 12-months if there were changes in the patient's circumstances.

Software implementation

The RST needed to be in place before practices could enrol patients. The Round 2 practice surveys revealed that while some practices described implementing the RST as "smooth", most experienced challenges (Table 14). A few experienced ongoing difficulties. The challenges often reflected IT environments and the skills of practice staff.

Table 14: Practice rating of implementing the RST software

Response	No. of practices (%)
The process was very smooth	22 (21.0%)
We had some challenges, but we overcame them	65 (61.9%)
We experienced ongoing difficulties	17 (16.2%)
Don't know/ no response	1 (1.0%)
Total	**105 (100%)**

Source: Practice survey R2, Nov 2018–Mar 2019, question 2.

Initially the tool was compatible with two of the common practice clinical management system in use across Australia- Best Practice and Medical Director. Later compatibility with ZedMed, Monet and MedTech32 was achieved. Compatibility issues with Communicare continued into 2019. Additional compatibility issues were created by a concurrent update of Communicare to enable HCH patients to be flagged within the software and produce extracts for the evaluation. These issues delayed ACCHS clinics in the Northern Territory implementing the trial. To avoid further delays, the Department of Health instructed the ACCHS to bypass the PRM and instead use age 45 years or older (or 35 years or older if Aboriginal and/ or Torres Strait Islander) with two or more chronic diseases to identify potentially eligible patients. Practices then had to complete the HARP tool built into Communicare to confirm eligibility and assign the patient to a tier.

Enhancements to the RST suggested by practices and PHNs through surveys and interviews included:

- Display the most at-risk patients at the top of the list (including patients not yet enrolled).
- Include a function to filter out ineligible patients (for example, Department of Veterans' Affairs funded patients, residents of nursing homes).
- Filter the RST results by selected criteria (for example, chronic condition, regular GP).
- Integrate the RST with HPOS and other HCH enrolment processes.

An additional challenge with the RST at start-up was that de-identified data from practice clinical management systems would be transferred out of the practice computing

environment to a secure cloud environment in which the relevant algorithms would be applied. Practices were concerned about the security and confidentiality of data. These concerns were addressed through assurance that the data would only be stored within Australia and patients' identifying information would be suitably de-identified (hashed)), so that no patient could be identified through data uploaded to the cloud.

Predictive risk model (PRM)

While most practices reported that the patients identified by the first stage of the RST were suitable for enrolment, there were other patients who were also suitable that the tool didn't identify:

> "*I was just a bit surprised when there were some people that weren't included. I certainly had no issue with those people that they wanted to include.*" [GP, Practice 2, R2]

> "*The system just isn't flagging certain people, and I don't know why, because they are absolutely candidates for it. It's not pulling out all of them. Most, but it is missing people.*" [Practice nurse, Practice 1, R2]

> "*One patient has chronic pain, chronic infection in her bones, disability, financial difficulties, socially isolated, depression, mental health issues, 12 medications--a perfect patient to enrol. The PRM didn't pick her up plus she wasn't even eligible according to the PRM. I had to override it and put it all in, and she is a T3.*" [GP, Practice 5, interview, R2]

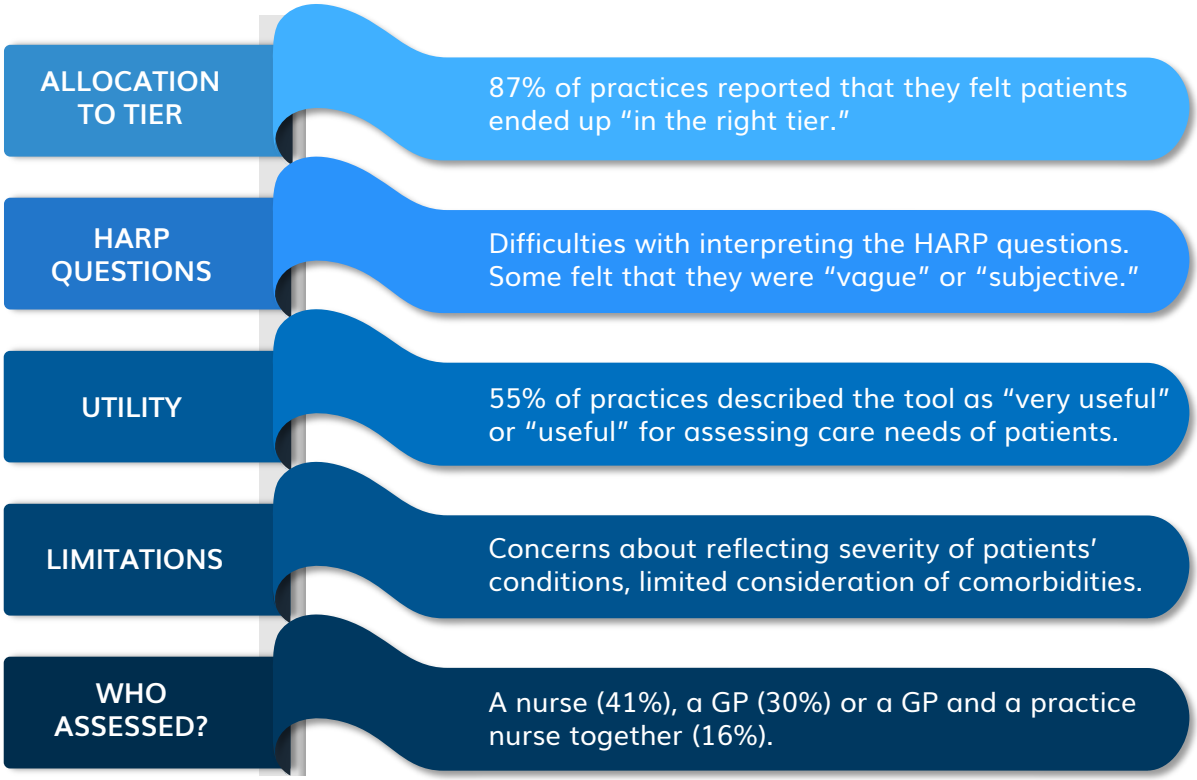
These experiences partly reflect issues around the completeness of capture of data on chronic conditions and related measures in practice clinical management systems and may also be impacted by the fact that the PRM algorithm was built on predicting hospitalisation rather than other outcomes or measures of need. However, it is not entirely unusual that clinical knowledge of patients and the complexity of their conditions and circumstances will – in some cases – be richer than the results of applying a risk stratification algorithm. Hence having a clinical override function is important for any approach that aims to find patients suitable for an initiative or program, provided relevant justification is supplied for the override.

Practices made several recommendations to improve the PRM, including expanding the conditions list to include conditions such as HIV and chronic lung diseases that is not COPD, emphysema and bronchiectasis, which are already included in the tool, and considering cultural, demographic and socio-economic factors.

HARP assessment

The second component of the RST, the HARP assessment, was used by practices to stratify patients into one of three tiers determining the amount of the bundled payment. Most practices felt that their patients ended up "in the right tier" and that the tool was "useful" to "very useful" for assessing the key needs of patients (Figure 7).

Figure 7: Practices' use and assessment of the HARP tool



Source: Practice survey R2, Nov 2018–Mar 2019, questions 2 to 8.

Those practices that felt their patients did not end up in the right tier thought that the tool was potentially skewed towards factors impinging on self-management without enough emphasis on physical disease:

> *"So, for example, I had a gentleman who was at home with his wife, on the farm, with no services at all, looking after himself, with severe cardiovascular disease, mixed valvular and ischaemic heart disease, who was in-and-out of hospital, marginally controlled, and came out as a one, and yet I was seeing him weekly, and twice weekly sometimes."* [GP, Practice 4, R2]

> *"Let's say if you had diabetes with end-stage renal failure, about to start dialysis and you're on insulin and you're highly brittle, you still only score one point. … we had quite a few patients who actually were exactly that category, where they were actually tiering as level ones. Because they were well-educated, they were mentally well, …they were still coming through with tier ones. Of course, we also knew that their hospitalisation levels are going to be very high in the coming years because that was just the natural trajectory. But of course, none of this was reflected in the selection criteria nor the funding criteria of results. So, what it meant was that we ended up just not putting those patients in."* [GP, Practice 11, R5]

A consequence of this emphasis was that children were assessed as being more complex because they had a carer, which is not necessarily appropriate.

Other concerns were that the tool scored all chronic diseases equally and didn't consider their severity, and that some chronic diseases were missing altogether (for example, cancer).

Some thought that the approach and remuneration offered particularly for tier 1 missed opportunities for early intervention, which was a key aim of the HCH model:

> Context – GP discussing patients with physical health problems that the practice did not invite to enrol due to expected higher resource use than the tier level allowed for: "*Oddly enough, we actually did [enrol these patients] when they got depressed and when they got all the other comorbidities further down the track. Whereas if we really wanted to look at true prevention, we would have put them in at the very beginning, put in a lot of efforts and resources into trying to help them at that point to stop them going into tier three.*" [GP, Practice 11, R5]

In terms of completing the tool, practices and PHNs thought that some of the HARP questions were "vague" or "subjective":

> "*Some of the questions aren't really clear, they could be clearer. Like use of previous services, well what exactly do you mean?*" [Practice Nurse, Practice 04, R2]
>
> "*It was very subjective and open to interpretation*." [Practice Nurse, Practice 6, R2]
>
> "*And then the questions themselves on that assessment are very subjective. So often in your head you're going, oh, I feel like this question is really complex and probably should be in tier three, but I've answered these questions or you've asked them some of them as well, and are you meant to? Are you meant to ask the patient? Or is it meant to be your judgment? It's not very clear*." [Practice Nurse, Practice 10, R2]

Other concerns were that nurses, who mostly did the assessments, didn't necessarily know the patients well enough to accurately complete the items, and that this was exacerbated by patients' underestimate of the burden of their conditions:

> "*The nurses did most of the HARPs the doctor rarely did it, and if you didn't know that patient maybe as well as maybe the doctor…" [Practice Nurse 2, Practice 6, R2]*
>
> "*Health management in itself, a lot of people are in denial. They don't want to believe that they have a chronic condition that needs to be looked at on a regular basis…*" [GP, Practice 1, R2]
>
> "*I think patients tend to generally underestimate what they have…*" [GP, Practice 9, R2]

GPs working in clinics serving remote Aboriginal communities considered that some of the items in the HARP related to social circumstances failed to appropriate account for extreme levels of disadvantage faced by patients in these communities.

Practices suggested that for future use of the HARP, additional guidance be given on who should be completing the assessment with the patient, the context of the questions, how the assessment should be undertaken, and the way in which staff members should interpret both the questions and the options provided for answering.

The Department of Health undertook a compliance audit of a sample of practices examining the use of the RST for categorising patients into tiers based on the complexity of their medical conditions and care needs. The audit concluded that the RST is suitable for the purpose of assigning patients to a tier level (and corresponding payment level) based on the relative complexity of their chronic conditions and required care. In all the cases reviewed, the risk tier applied by the practice for the patient was assessed as appropriate.

Some practices reported completing the HARP assessment to determine patients' tiers before approaching patients to decide if it was financially viable to enrol them. This "cherry picking" occurred because practices didn't want to risk a lower payment for patients who they considered high risk from a resource perspective:

> "[The order in which we assessed patients using the HARP] *was as patients presented, and if we deemed them as someone that would benefit from Health Care Homes we would run the risk stratification tool and just see where they would place on it…At the very beginning we probably were doing everything backwards in that we identified patients that would benefit from the program but then they would necessarily be reflected on that risk stratification tool as in, this patient had high-end care. Some patients missed out for that reason, if that makes sense. They may only have been a tier 1 or tier 2, but their needs were great. From the practice perspective it wasn't always feasible for us to actually enrol them. We did look at quite a few patients and balanced that and then waited, but at the end of the day it is a business too*." [Practice nurse, Practice 13, interview, R2]

Through the round 2 practice survey, 31% of practices (32 out of the 100 that completed this question) identified "Financially not viable (frequent attendance)" as the main factor that the GP/practice decided not to approach some patients flagged by the PRM as potentially eligible for the trial.

Review of tier allocation

According to the Department of Health's *Handbook for general practices and Aboriginal Community Controlled Health Services*:

> *"An enrolled patient's tier level is intended to account for fluctuations in their health care needs over the course of 12 months. A patient's risk stratification*

certificate is valid for 12 months, at which time their risk tier level will need to be reviewed by repeating the risk stratification process." [41] (p. 9)

In the final round of interviews, which took place a few months before the end of the trial, a few practices reported that they hadn't regularly re-stratified patients. PHN practice facilitators stated that the main reasons for this were the lack of time for the effort needed for this, limited face-to-face interactions with patients during the COVID-19 pandemic, few perceived changes in their patients' conditions and a lack of motivation to do what they considered an administrative activity:

> *"A lot of them have gone, the patient's not changing tiers…We know they're going to stay at tier one or tier three. That's been difficult. And then that conversation has just come down to, you need to do this…with the COVID pandemic, that took a backseat…I think with having everyone's got to do it on those regular intervals, it becomes…just another admin thing to do. And I tend to find that usually most of the practices…are a bit put off by the amount of…administrative workload. You're coming at them with another thing and they're just like…This isn't going to change how we deliver our care."* [PHN 1, interview, R5]

> *"The re-stratification, you have to do it every 12 months, and they were reaching that 12-month period in the middle of the pandemic, so it's about how do you then bring the patient back to do the re-stratification. You can do most of it over the phone, but generally, practices like to do these types of health assessments and re-stratification with patients face-to-face…And then the reviewing, with Health Care Homes, it's a continuous reviewing process…It's more administrative than anything else, …and their headspace wasn't in that space at that moment…The problem with the re-stratification is that some of the practices assumed that the re-stratification doesn't need to be redone and it only needs to be redone if there's a change with the patient's condition…"* [PHN 5, interview, R5]

PHNs serving largely rural areas also reported ongoing issues with the RST. This made the re-stratification process more arduous for practices in these regions:

> *"…the RST tool does grind their systems quite a bit, slows them down"* [PHN 10, interview, R5]

> *"We've had a lot of trouble though with [the RST] matching up to software and everything like that. So, that's been a huge challenge that they have. I think in my time they only had to do it once in that period so I supported them to do that, but it was very challenging…Then one of them was saying it was really hard, especially during the COVID period…"* [PHN 8, interview, R5]

---

[41] Australian Government Department of Health. (2019b). *Health Care Homes Handbook for general practices and Aboriginal Community Controlled Health Services Version 1.7 February 2019*. https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-cp/$File/HCH-Handbook-Feb-2019.pdf

Practices that did re-stratify their patients predominantly reported going through this process in the last 12 to 18 months of the trial. Staff experience of the re-stratification process was variable, and some stated that this task involved a high degree of administrative burden that they felt derived little to no benefit to the practice or the patient:

> "*I also think that the compliance activities [are] more onerous than [they] need to be. For example, our nurses do regularly reassess people for tiers and the feedback I've had from [Nurse 1] and others who did it for her is it would take a good chunk of time. I think in most situations patients' tiers wouldn't change and; therefore, there's very limited benefit out of it.*" [GP, Practice 22, R5]

> "*There's a lot of things though, and you must know the extra amount of work that we've done. We had about seven tick boxes to just change one patient here in our system anyway because we had flagged them in Medical Director, PracSoft, HPA [evaluation activities], PRoDA, that spreadsheet, the top bar. You have to change everything and it's all time and then that takes away from the amount of care planning you do.*" [Nurse, Practice 4, interview, R5]

Staff commonly attributed movement of patients from a lower risk tier to a higher risk tier to a patient's new diagnosis, the progression of their existing condition(s) or the ageing process:

> "*…bearing in mind that all these disease states are progressive…you're not going to cure them…*" [Practice Owner, Practice 6, interview R5]).

> "*…when there's a crisis for a patient, or there's a new diagnosis of say a brain tumour or breast cancer, that sort of situation would take them up a notch. Because patients are getting older they will naturally tend to go up a notch as well in most instances.*" [GP, Practice 9, interview, R5]

Practices re-stratified patients when they felt that a patient's health was deteriorating. When the re-stratification resulted in the patient staying in the same tier, in some instances practices would withdraw the patient if they felt it was no longer financially viable to look after that patient at the same tier level. This also happened for patients already at the highest tier level. There were instances where a patient was considered what practices and PHNs described as a "tier 4", meaning that the patient was more complex than the most complex tier available. This reflected practices' perception that bundled payment didn't adequately reflect the amount of effort required for some patients:

> "*One thing I think you do need to keep on top of though is if you have people that go to hospital and develop new issues, is to keep on top of should you be re-stratifying these people. Those people who were really significantly unwell and perhaps stratified out… Well, sometimes I think the stratification process wasn't truly reflective of the amount of effort.*" [GP, Practice 4, interview, R5]

> "*I think it's also worth noting that a couple of my practices removed a couple of the patients from the trial just because they weren't a tier three anymore. That's where a tier four could have come in.*" [PHN 8, interview, R5]

> "*…the final point of this whole billing thing is what I'm going to call my tier four patients… two of them who are still with us, two of them have died, have been so*

complex and so demanding. I've got one who's coming in twice a week, every week, if not more often than that. And has been doing so, for the whole duration of the time…These are well beyond tier three patients. Very happily accepted them into this whole process, because they know there's tier ones, for which I've done very little. And so, it's swings and roundabouts. But there's no question that there are some people who are so sick, are so unwell, so demanding of your time and your resource, that there's no way that a capitation process sorts them out." [GP, Practice 12, interview, R5]

A small number of practices reported slight improvement in some of their HCH patients and had a few move to a less complex tier. One practice described this improvement as gradual and another stated that this tangible outcome had a great impact on their patients:

"… if you follow the routine of doing the care plan and reviews periodically you can see people gradually improving, and therefore go down tiers. And with GP management plans you see that people graduate from not needing monthly or three-monthly reviews anymore but being able to get away with six monthly reviews. Or no longer even qualify for a GP management plan, because those various health issues are no longer a problem, or haven't been for whatever period of time because of maintenance." [GP, Practice 9, R5]

"I know there were some patients who were initially a tier three and then now they're tier two. The impact of that, actually, when you talk to the patient and telling them, oh, you were tier three before and now you're a tier two, it's like that feeling of joy that you can get from them… to be able to do that assessment and for them to know that, okay, I am at this level now, that's really a great thing for the patient." [Nurse, Practice 24, R5]

PHNs also commented that the incentives were not there for practices to work towards moving patients to a less complex tier:

"It's a double-edged sword in the sense that you lose out for money, you're no longer paid at that higher rate….We did have one practice say, yay, the patient's improved, but what about the money?" [PHN 5, interview, R5]

"I had an interesting comment from one of the nurses at the practice that I'm looking after around reviewing and reclassifying and the benefit for the practice in doing that. There's the benefit for the patient obviously, because there's health outcomes, but in reclassifying from a tier three to a tier two, they're actually going to lose financial benefits from that." [PHN 7, interview, R5]

Training on the RST

Education about the RST was available through the training webinars and online training. However, PHN practice facilitators commented that some practices still took time to learn exactly how the RST worked. For example, one practice did not know about the CSV file of potentially eligible patients that the RST Connector saved to the practice's desktop computer. Staff in the practice only identified potential patients when a pop-up appeared for a patient when the patient attended the practice for an appointment. This slowed the practice's rate of

enrolment. PHN practice facilitators suggested more training to help practices with these types of issues.

The need for training for GPs on how patients were assigned to tiers using the HARP tool was identified by practice facilitators and the PHN survey. One PHN conducted a workshop with GPs on the RST, and it emerged there were differences amongst GPs in how they interpreted questions in the HARP. Some were "*erring on the side of caution by not wanting to over stratify.*" [PHN 2, interview, R1]. Through the survey, PHNs suggested training tailored to clinicians in the HARP and the RST more broadly (for example, "[The] *RST is new to general practice—consider developing a training tool for clinicians*" [PHN 4, survey, R1]).

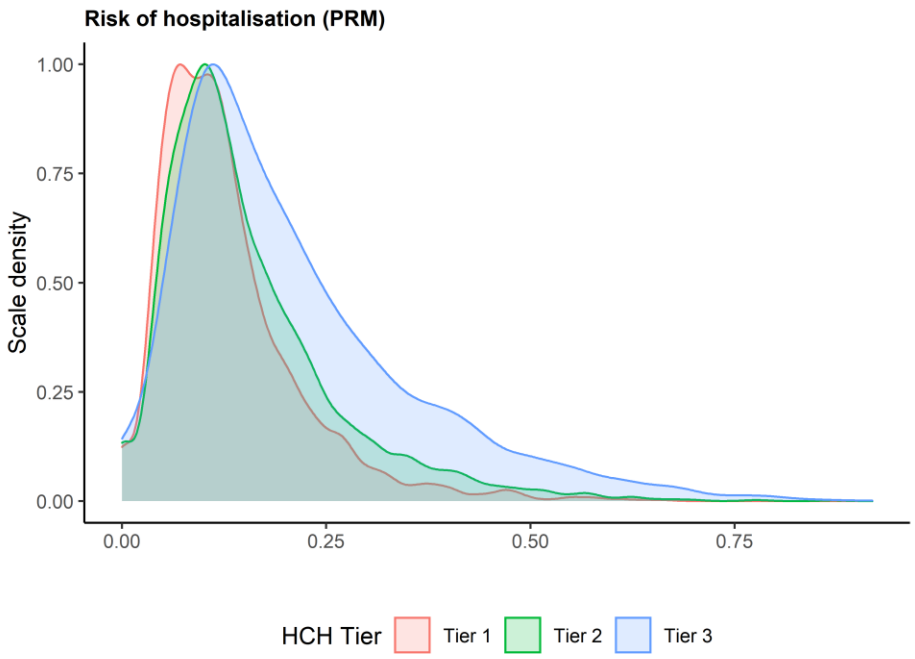
Analysis of data from the tool

De-identified data were provided to the evaluation team by the proprietor of the RST, Precedence Health Care. The data relate to items and risk scores for the two stages of the risk stratification process: the PRM and the HARP. Data were available for 12,767 patients, some of whom were never enrolled in HCH, but because the data were deidentified it was not possible to distinguish enrolled and not enrolled patients.

The overall mean for the initial PRM scores was 0.168 (a 17% probability of hospital admission in the next year) and the median was 0.134 (a 13% probability). The mean increased with tier, 0.130 in tier 1, 0.155 in tier 2 and 0.211 in tier 3.

Figure 8 shows density plots for the initial PRM scores for HCH patients. Most patients had a risk of 0.25 or below (25% chance) of being hospitalised in the next 12 months. There was overlap across the tiers, but patients who were assigned to a more complex tier in the second step of the risk stratification process (using the HARP tool) were more likely to have a higher risk of hospitalisation.

Figure 8: Distribution of initial PRM risk scores by HCH tier



Source: Risk stratification data provided by Precedence Health Care, to May 2021.

As indicated earlier, the factors influencing patient selection were not fully available in the practice clinical management system alone, so GPs could override the score returned by the PRM and invite patients to undertake the next stage of the assessment – the HARP. Of the 12,377 patients for whom valid baseline data were available, 30% (3,745) had a HARP completed because the GP overrode their PRM score. Patients were more likely to have their PRM score overridden if they were in tier 1 (40.8%) than if they were in tier 2 (32.4%) or tier 3 (20.5%).

Patients were likely to have more chronic conditions and more social problems with increasing tier. The most common chronic disease groups were "diabetes and/or renal failure and/or liver disease" (prevalence of 43.1%), cardiac conditions (CHF or angina) (33.2%) and chronic respiratory condition (33.7%). The steepest gradient in the prevalence across tiers was for a diagnosis of "complex care needs in frail aged", such as dementia, falls and incontinence (prevalence of 4.7% in tier 1, 11.6% in tier 2, and 34.5% in tier 3).

Within the service access profile category of the HARP, patients in tier 3 were more likely to have been in hospital more than once in the last 12 months (41.3% in tier 3, 18.5% in tier 2, 7.4% in tier 1) and more likely to have a reduced ability to self-care (62.5% in tier 3, 12.8% in tier 2, 1.5% in tier 1).

There were high levels (>50%) of all the lifestyle risk factors, except smoking (which had a prevalence of 18.0%). High blood pressure, high cholesterol and overweight/obese were more prevalent amongst patients in tier 1, but patients in tier 3 had substantially higher levels of physical inactivity (73.8% in tier 3, 53.3% in tier 2, 29.8% in tier 1) and polypharmacy (79.5% in tier 3, 63.3% in tier 2, 46.6% in tier 1).

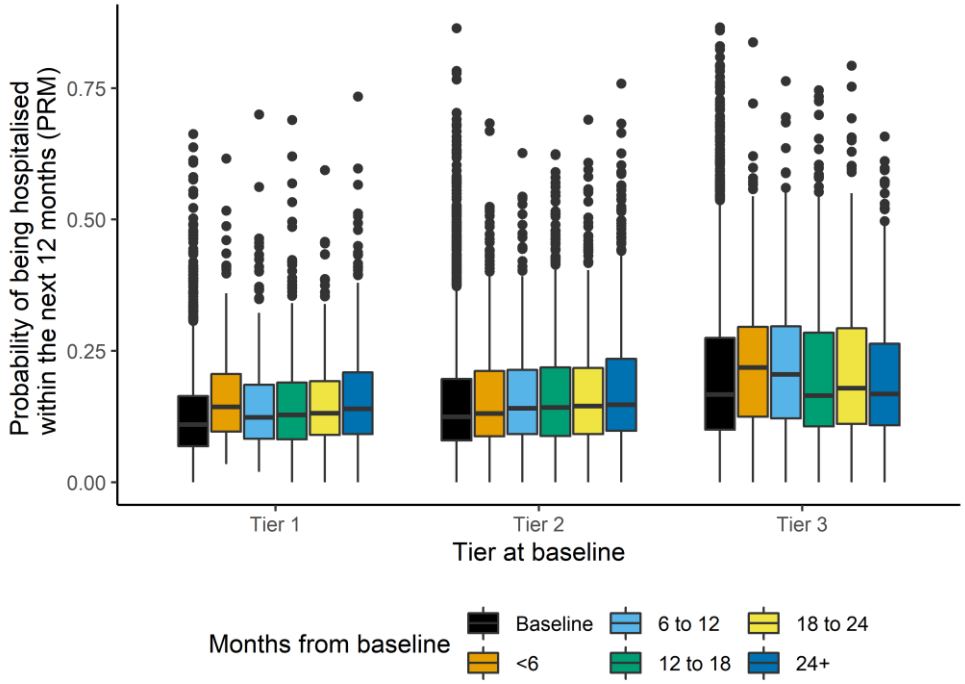
In the HARP, there are eight complications, and when any of these are present, a score of 1 is assigned. The prevalence of these were 17.8% for carer stress issues, 16.5% for change in drug regime, 43.6% for chronic pain, 10.8% for cognitive impairment, 10.9% for compromised skin integrity, 13.5% for triggers for asthma, 10.0% for no carer available, and 37.4% of use of services previously. Each of the eight complications were more common amongst tier 3 patients.

Longitudinal analysis was undertaken for patients in practices that applied the RST (both the PRM and the HARP tool) to their patients and were still in the trial on 31 March 2021 (n = 10,118 patients from 97 practices, with 16,416 separate assessments). The RST was completed once for 60.8% (n = 6,154) of patients in these practices, twice for 25.4% (n = 2,570), three times for 10.1% (n = 1,025), and four or more times for the remaining 3.6% of patients. Practices participating in HCH were asked to reassess patients using the RST every 12 months. As discussed above, this didn't happen, and consequently there is a potential bias towards reassessing patients who were likely to move between tiers. Consequently, trends over the study period, and differences in trends, should be interpreted with caution.

There was a relatively small but significant increase in the average PRM score of 0.008 per year (95% CI 0.006 to 0.010), which in relative terms was about a 5% increase per year over the period of the study (Figure 9). The trends were similar across tiers.

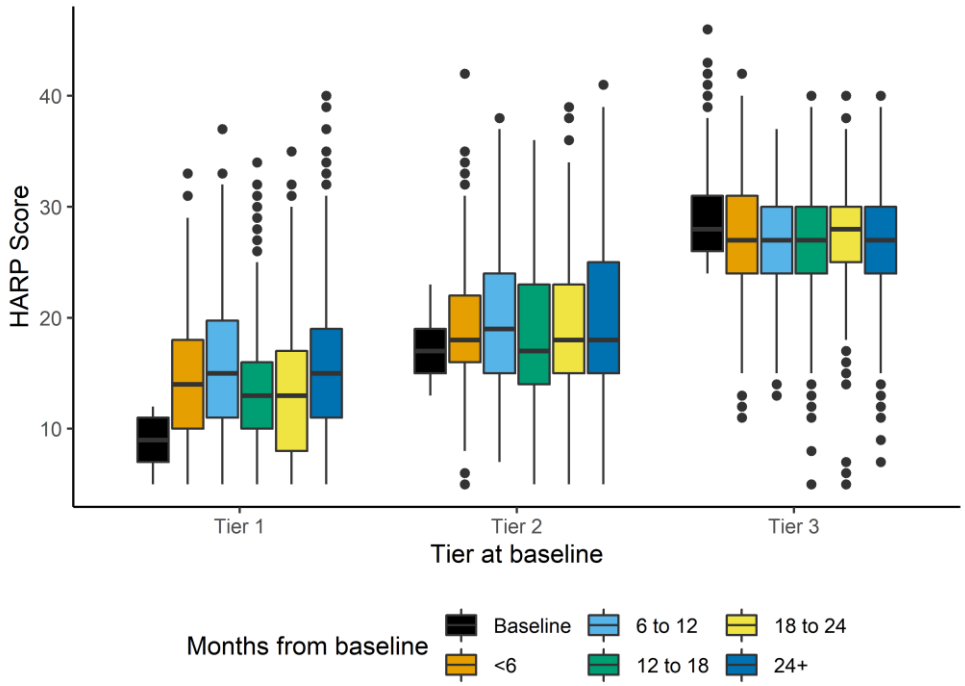
There was also a significant increase in the average HARP scores of 1.0 per year (95% CI 0.89 to 1.10), which in relative terms was about a 5% increase per year over the period of the trial (Figure 10). The trends in the HARP score were similar across tiers.

Figure 9: Distribution of PRM risk scores by HCH baseline tier and period after baseline



Source: Risk stratification data provided by Precedence Health Care, to May 2021.

Figure 10: Distribution of scores on the HARP by HCH baseline tier and period after baseline



Source: Risk stratification data provided by Precedence Health Care, to May 2021.

7

Patient enrolment

Box 10: Chapter summary

A key feature of HCH was voluntary enrolment of patients to a practice and a specific GP. Practices could enrol patients on joining the trial and until 30 June 2019 (extended from 30 November 2018).

The Department of Health provided guidance to practices on the enrolment processes in the HCH handbook for practices and funded staff in each of the 10 PHNs to help practices with enrolment.

Practices used different approaches to enrol patients. Some opportunistically enrolled patients as they attended the practice for their appointments. Others were more strategic, for example, holding a forum to explain the trial to their patients and providing on-the-spot enrolment facilities. Practices did not approach some patients flagged as potentially suitable by the RST mainly because they thought it would not be financially viable based on the patient's past attendance patterns. Practices generally approached patients to enrol who were already motivated to manage their health and who they thought were activated or were willing to try new things.

Practices reported that distilling the goals of the model into benefits that patients could understand and getting the GPs to talk to patients about the program were effective in recruiting patients. However, a challenge for many practices was to articulate the value proposition to patients. Sometimes practice staff thought that their model was already consistent with the HCH model, and it was hard to identify what additional benefits patients would receive under the new model. Practices also reported that sometimes nurses lacked confidence in explaining the model to patients and delivering a clear and consistent message about its goals. Consequently, some patients reported being confused by staff's explanations of the model.

The HCH trial involved voluntary enrolment of patients to a practice and a GP. Patients with long-standing relationships with their GPs who also trust their GP were prepared to enrol. However, patients still need a clear value proposition to commit to an initiative.

Time was a major issue for practices in enrolling patients. Explaining the program, getting consent, assessing the patient's eligibility, creating a care plan, and registering patients on multiple platforms were time-consuming. Practices recommended that these processes be significantly streamlined for similar programs in the future, especially the IT components.

Despite the extension of the patient enrolment period, some practices found it challenging to increase enrolments. Practices cited ongoing IT issues, convincing GPs to participate and the extensive processes for registering patients as barriers to enrolling additional patients. Uncertainty about the future of the program was also an issue.

Patient concern around the security and confidentiality of their personal and medical information – in particular, the requirement to have a My Health Record – was a major deterrent to enrolling in HCH. However, this was subsequently lifted. Another deterrent was the perception that their relationship with their GP would be threatened. Practices also highlighted difficulties in enrolling patients from different cultures, non-English speaking backgrounds, recent migrants, and homeless people, due to cultural expectations, language barriers and lack of permanent accommodation. Sometimes these barriers arose from what practices were planning to offer as part of HCH (such as telephone consults, which would not work for people with limited English without an interpreter) rather than the

model not being suitable for these individuals.

Overall, practices reported that they selected the right patients to enrol. Where practices did not feel they selected the right patients, this was because the patients they enrolled were not open to receiving care from a wider team.

Some practices also reported that very complex patients and low complexity patients were not suitable, the former due to financial viability (as the bundled payment was insufficient) and for the latter due to questions over whether the model would benefit these patients.

Overview of the enrolment process

A key feature of HCH was voluntary enrolment of patients to a practice and a specific GP.[42] Selected practices started enrolling patients on 1 October 2017, and the remainder could enrol patients from 1 December 2017. Originally, the enrolment period was from 1 October 2017 until 30 November 2018. In late 2018, the Department announced the extension of the HCH trial and extension of the enrolment period to 30 June 2019.

Acknowledging that enrolling patients in HCH was a new process for practices, GPs and patients, the Department provided detailed guidance on this (Box 11).

Box 11: Patient enrolment process[43] (p. 11–12)

Step 1: Identify potentially eligible patients (case finding)

- The HCH identifies potentially eligible patients via the first part of the RST (the predictive risk model or PRM). GPs may also identify additional patients considered to be suitable for HCH.

Step 2: Discuss HCH with the patient

- The HCH checks that the patient holds a green or blue Medicare Card, that they are not a resident of a residential care facility or enrolled in the Department of Veterans' Affairs Coordinated Veterans' Care Program. The HCH invites the patient for a consultation. The patient is given a brochure about the program and informed of out-of-pocket costs that may apply.

Step 3: Assign a risk tier

- The patient's verbal consent to proceed with an assessment is obtained. A clinician completes the second stage of the RST, the HARP assessment, based on information provided by the patient during the assessment. The HARP score determines the eligibility of the patient. If eligible, the score is used to assign the patient to a HCH tier (1, 2 or 3). The RST issues a digital certificate confirming tier assignment, which is saved in the clinical management system.

Step 4: Obtain patient's consent to enrol in HCH

- The HCH answers any further questions that the patient has and gives the patient a consent/enrolment form and a resource pack with detailed information about HCH. The patient provides written consent to enrol in HCH.

[42] Australian Government Department of Health. (2018d). *Health Care Homes Handbook for general practices and Aboriginal Community Controlled Health Services Version 1.4 August 2018*
[43] Ibid.

Step 5: Provide further information and complete any outstanding requirements

- The HCH gives the patient a copy of the patient handbook and answers any further questions that they may have.

Step 6: Register the patient

- Patient registration in HPOS: This must be completed within seven days of the patient completing the consent form.
- Practice clinical management system: Patients should be flagged in the practice clinical management system so that they can be identified as HCH patients by clinicians in the practice that will contribute to their care.
- Clinical audit/data extraction tool: The practice also flags HCH patients in the clinical audit/data extraction software, so they can be identified in the practice extracts provided for the evaluation.
- HCH evaluation app: The HCH enters contact details about registered patients for the evaluation into the online evaluation app. This is for the purposes of inviting patients to participate in surveys, interviews and focus groups. These details are not required for patients enrolled by the Northern Territory ACCHS, as there are alternative arrangements for these services).

Practice experiences with enrolment

Identifying potentially eligible patients

The identification of potentially suitable patients was intended to be a systematic process using the RST. In practice, a variety of approaches emerged. These could be broadly categorised into systematic and opportunistic approaches for identifying suitable patients.

The intended systematic approach involved using the RST or other data on the practice population to produce a list of potentially suitable patients. GPs would review the list and could add patients who they thought would benefit from the HCH model. Following identification of suitable patients, the practice contacted the patient by phone or letter to invite them for an individual consultation about enrolment or to a group information session.

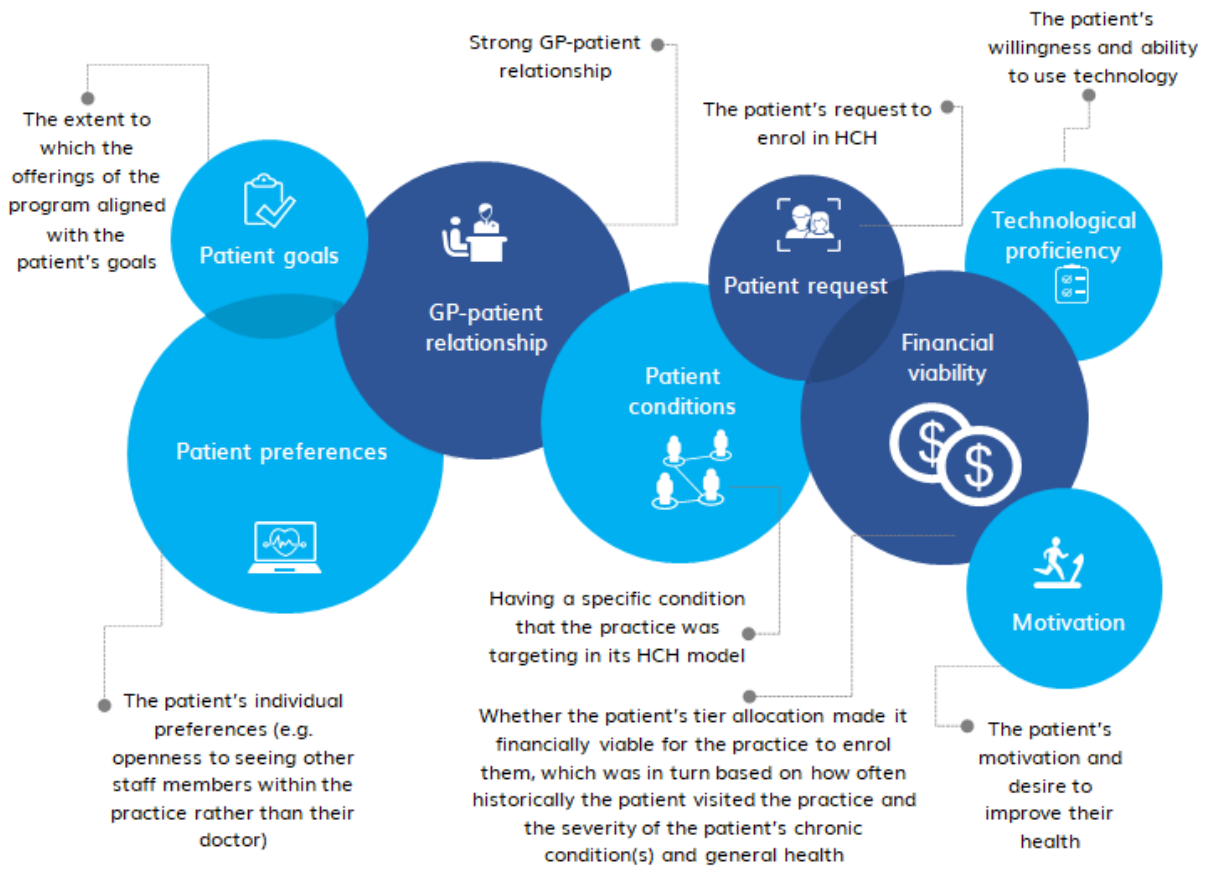
To begin with a manageable and potentially easily identifiable group of patients, some practices opted to target individuals with a specific chronic disease, such as diabetes or COPD, rather than their entire list of patients with chronic diseases.

Other practices took a more opportunistic approach and discussed HCH with patients who the GP or nurse thought were suitable for the program when they attended routine appointments.

Several practices reported using a combination of these approaches. Some practices also used methods to raise program awareness within their chronic disease patient cohort. For example, posters in their waiting rooms or information sessions or workshops where they could enrol multiple patients at the same time after providing them with information.

In addition to the formal requirements for enrolment, practices reported approaching patients based on specific patient factors and financial considerations (Figure 11).

Figure 11: Reasons practices approached patients to enrol in HCH



Source: Case study interviews R2, Sept–Oct 2018.

In the practice survey, practices identified why they didn't approach some patients identified by the RST as candidates for enrolment (Table 15).

Table 15: Main factors that the practice/GP decided not to approach some of the patients flagged by the RST as suitable (including responses from withdrawn practices)

Response	n (%)	Response	n (%)
Financially not viable (frequent attendance)	32 (30.5%)	Complex mental health patients	4 (3.8%)
Patient's personality not suitable/model wouldn't suit	22 (21.0%)	Patient prefers to see their GP (a doctor)	4 (3.8%)
Doctor's choice	8 (7.6%)	To restrict the number of HCH patients	3 (2.9%)
Patient also attends other practices	7 (6.7%)	Language barrier	1 (1.0%)
Time constraints	6 (5.7%)	Patient too complex to be seen by the nurse	1 (1.0%)
Patient sees multiple GPs at the practice	5 (4.8%)	Patients conditions are not fully managed at this stage	1 (1.0%)
Time constraints (for registering patient)	5 (4.8%)	Patients don't have a chronic condition	1 (1.0%)

Source: Practice survey R2, Nov 2018–Mar 2019, question 5.

Practices reported that they generally enrolled patients in HCH who were already motivated to manage their health. GPs also tended to approach patients to enrol that they thought were activated or were willing to try new things. Therefore, the model was not fully tested on the general population of patients with chronic disease:

> *"…if you want the policy to work, you come and say, [General Practitioner], go and pick out 100 naughty patients who don't want to come and participate, who are not going to do well. I give you double the incentive for the first year, but you make sure that, at the end of the first year, they improve…"* [GP, Practice 3, R5]

Informing patients about HCH

Several approaches to informing patients about the program were identified in interviews. These can also be categorised into systematic and opportunistic.

Beyond identifying potentially eligible patients through the RST, the systematic approach involved information sessions to groups of potentially eligible patients. Information sessions typically involved several clinical staff and, in some instances, PHN practice facilitators. Sufficient time was needed for information about HCH to be provided and for patients, families and carers to ask questions. At the sessions, patients would be asked whether they wanted to proceed to the next stage of enrolment (the HARP assessment) and a follow-up consultation would be arranged. These sessions ranged from very successful in some practices to unsuccessful in others.

The opportunistic approach involved providing patients with information during a GP consultation. This was sometimes divided between a consultation with a GP, where an overview of HCH would be provided and a lengthier consultation with a practice nurse who would provide more detail on the program. The consultation at which information was given was often also used to get a patient's permission to proceed with the HARP assessment. Some practices reported that several consultations were often required before a patient felt they were comfortable to proceed to the next stage.

Messages for patients about the benefits of HCH

When discussing HCH with patients, practices had a wide variety of HCH "selling points":

- increased access via phone, skype and email
- shorter waiting times
- improved monitoring of chronic disease (including through shared care plans, routine recalls to check the patients' health)
- improved coordination between general practice, allied health, and external specialists
- focus on patient activation and the patient taking control of their health
- ability to request some prescriptions and referral over the phone
- access to a nurse for routine management and health measurements
- a more personalised approach to managing health issues
- access to more services (for example, education, home visits).

Despite these selling points, practices and PHN practice facilitators often struggled to create a coherent and convincing message for why a patient should enrol in HCH. A common issue was that practices felt that they were already providing services consistent with the HCH model, so that HCH would not change the care they were providing to any great extent. Several practices stated that access and the ability to request prescriptions over the phone was the "juicy carrot" that encouraged patients to participate. Otherwise, practices thought that many of the major changes under HCH were internal to the practice and weren't always visible to patients.

Overall, practices found creating a clear and consistent message that outlined the goals of the program a challenge. It was especially difficult for staff members to explain the advantages to patients from different cultures, non-English speaking backgrounds, recent migrants and homeless people.

Many practices stated that the GP recommending the program to their patients was often integral to convincing patients to enrol. This was due to the strong relationships and trust that GPs have with their patients.

Some practices found that delivering a simple message was the most effective way to get patients to understand the program benefits. Others showed patients the HCH patient video developed by the Department of Health.

Practices continued to describe issues with patient understanding and expectations of the program that lasted beyond enrolling patients. Specifically, practices reported instances of patients' misunderstanding the model, confusion, or lack of awareness about being enrolled:

> "*Initially, we started it, we were saying Health Care Homes and a lot of the patients were thinking that it's home care or something like that. Most of them didn't want to even talk about it.*" [Practice Manager, Practice 9, R5]

Another area of misunderstanding was the extent to which patients would have access to their GP once enrolled in HCH. In some instances, patients withdrew from the trial when they found that they would be interacting less with their GP and more with nurses and other clinicians. Other patients persevered and found benefits with the team-based approach. In other instances, practices thought that some of their patients had become overdependent on the practice as HCH enrolees.

Why patients decided not to enrol

Not all patients agreed to proceed with enrolment in HCH and practices expressed challenges encouraging patients to enrol. Table 16 shows the main reasons that patients who practices approached to enrol in HCH program opted not to enrol.

Table 16: Main reasons that patients approached opted not to enrol in HCH (practices could report more than one reason)

Response	n (%)	Response	n (%)
Patient concerned about privacy of their data/My Health Record	46 (43.8%)	Preferred to see a GP (rather than nurse)	10 (9.5%)
Patient felt it was unnecessary/ couldn't be bothered	43 (41.0%)	Patient didn't want to be restricted to one practice	10 (9.5%)
Patient didn't understand model or the potential benefits	32 (30.5%)	Not interested in care planning	3 (2.9%)
Patient didn't want to change / happy with current care	32 (30.5%)	Other (too hard to get carers on board, language barrier)	3 (3.0%)
Patient didn't want to be in a (government) trial	11 (10.5%)		

Source: Practice survey R2, Nov 2018–Mar 2019, question 12.

The top reason that patients decided against enrolling in HCH was concern with privacy and security resulting from having to opt into My Health Record. Initially, opting into My Health Record was a requirement to enrol in HCH but was later removed. Other reasons that patients decided not to enrol were personal preference, not understanding the program advantages or they felt it was not necessary for their care:

> *"It was actually quite hard to enrol patients. A lot of patients just felt like, well what am I getting out of this?"* [GP2, Practice 1, R5].

In some instances, there was an expectation that a patient would be solely looked after by their GP and not other members of the team. This was particularly an issue for some cultural groups but was not isolated to these groups. It often took GPs to convince their patients that their relationship would not be hindered by the HCH model.

One practice reflected that since COVID-19 and the broader rollout of telehealth, patients who were previously not interested in joining HCH because they only wanted to engage with practice staff face-to-face would probably agree to participate following their experiences during the pandemic where they became familiar with and accepting of receiving care virtually:

> *"It's just if we were to ask them who's interested in enrolling, I have a feeling that we'd have a lot more take-up, considering so many people now are used to the change in consults, phone consults, change like that. I think because this wasn't a thing before COVID, whereas, now it is."* [Senior Receptionist, Practice 9, R5]

Did practices feel they selected the right patients?

When asked if they chose the right patients for HCH, many practices felt the patient cohort selected was largely appropriate for the model. The range of approaches taken by practices to select patients for the program appeared to influence their responses to this question. Some practices stated they carefully selected their patients after considering a variety of factors while others specifically selected individuals with complex, high needs or targeted patients with certain conditions or from a particular demographic:

> *"Yes, because a lot of ours were the elderly patients. The doctors chose them and maybe because they were elderly, and they needed more emotional support with keeping them in the home…We've helped them with their appointments and some of their medical problems, appointments, transport and things. I think they probably thought the younger ones didn't need the extra help."* [Nurse, Practice 4, R5]

> *"Yes, I think so. I think the patients that have been selected, I think we've got a better understanding now about who should be involved and who shouldn't. And I really do think the GP has to be the key as to whether that patient, whether they think they're…in the right headspace to be taking ownership a little bit, and getting involved in their own health care, and their own outcomes."* [Practice Manager, Practice 10, R5]

In instances where practices did not feel they selected the right patients, this was because the patients enrolled only wanted to see their GP. Practices also felt that very complex patients and low complexity patients were not suitable. Very complex patients became financially not viable to continue. For low complexity patients they questioned the benefits of the model:

> *"…they were on the low risk but just across the line, what additional support could I give them that I wasn't already giving them under the normal funding arrangement?"* [GP, Practice 15, R5]

Other enrolment processes

Beyond the HARP assessment and the assignment of patients to tiers, which is discussed in Chapter 6 Risk stratification (p. 39), the additional areas in which practices provided feedback were administrative processes, particularly registering patients (Step 6). About two thirds of practices felt they *had some challenges* [with these processes], *but overcame them*, and one-fifth reported that *the process was very smooth* (Table 17). A smaller proportion reported *ongoing difficulties*.

Table 17: Practices' rating of administrative processes for enrolling patients in HCH

Response	n	%
The process was very smooth	23	22%
We had some challenges, but we overcame them	64	62%
We experienced ongoing difficulties	16	16%
Total	**103**	**100%**

Source: Practice survey R2, Nov 2018–Mar 2019, question 13.

Extension of the patient enrolment period

The trial extension gave some practices more time to engage staff and firmly implement HCH, allowing them to enrol more patients:

> "*I think last year, January [2019], we were a bit ramped up a little bit, and [the GP] got quite a few more of these patients in, because he understood how things would work.*" [Business Manager, Practice 15, R4]

Other practices found it challenging to increase their enrolments. A key frustration was the lack of time to simultaneously implement the model and enrol patients while running a busy practice and other competing priorities. Practices specifically cited ongoing IT issues, convincing GPs to participate and processes for registering patients as barriers to enrolling additional patients:

> "*I think it was hard to incorporate the registration timing into the existing clinics, you sort of had to get these registrations done and care plans done whilst the clinic was going on. … [Y]ou still had your other … duties or patients to attend to … [H]aving to do these as well was hard.*" [Nurse, Practice 10, R4]

There were also concerns and general uncertainty about the future of the program. They did not want to invest significant resources in the trial when it was not clear if it would continue. Other practices wanted to test the model before enrolling a large number of patients:

> "*… the other reason why we didn't end up [enrolling] too many patients in the program was uncertainty about where the program would be after two years. So, it's difficult to get … a large cohort of patients used to it and then after two years say well, we're going to now can it and we'll have to do things differently.*" [GP, Practice 11, R4]

Later practices reflected on the missed opportunity of enrolling more patients:

> "*If [General Practitioner] would have done that training before the enrolment process ended, he would have probably got a lot more patients … But, unfortunately, he wasn't able to enrol anyone after that.*" [Practice Manager, Practice 15, R5]

> "*Definitely, if we could enrol more patients, I think that's been a bit limiting factor. And part of the reason why that's limiting is because over time we've had patients withdraw for various reasons, and then we can't add others to replace them. So, it creates this artificial scarcity, which makes it less appealing to then continue being part of.*" [GP, Practice 22, R5]

Suggestions to improve enrolment

Practices suggested streamlining the enrolment process to save time, educating staff and raising patients' awareness of the program as key mechanisms to improve patient enrolment (Table 18).

Table 18: Suggestions for improving the enrolment process

Response	n (%)	Response	n (%)
Synchronising the various enrolling portals	29 (27.6%)	Increase the engagement of doctors	3 (2.9%)
Simplify the enrolment process/ make it easier to find eligible patients	16 (15.2%)	Payment for nurses to register patients	2 (1.9%)
IT and admin process working more efficiently	6 (5.7%)	Counter negative publicity of My Health record	1 (1.0%)
Provide doctors/ other staff with more education	6 (5.7%)	Flexibility for patients to see different providers within the practice	1 (1.0%)
Increase publicity of HCH to make patients more aware	5 (4.8%)	Involvement of family members	1 (1.0%)
Provide literature for patients and standardised approach to recruitment	4 (3.8%)	MBS item number to prompt HCH registration	1 (1.0%)

Source: Practice survey R2, Nov 2018–Mar 2019, question 14.

8

Bundled payment

Box 12: Chapter summary

Implementing the bundled payment absorbed a large amount of practices' time in the initial stages of the trial, working out how to distribute the payment amongst staff and what services were in the bundle versus what could be charged separately. Some practices also spent time convincing their GPs about the advantages of the payment model compared with fee-for-service.

As the trial progressed, practices appeared to have worked out how to manage the bundled payment, but many continued to report difficulties with how to distribute the payments amongst staff and differentiating between chronic and acute care for the purposes of payment. Managing two systems of charging in the same practice – fee-for-service alongside the bundled payment – was also challenge for many practices, especially where they had only few patients enrolled.

The perceived benefits of the bundled payment for practices and GPs included certainty of funding, additional financial flexibility and potential time savings for GPs as they could delegate certain tasks to other team members. Perceived disadvantages included an increased workload and the amount of time it took to understand and implement the HCH model.

The ACCHS suggested that the bundled payment – with refinements – may a viable and appropriate payment approach for their settings. This partly reflects that ACCHS are typically offering a team-based approach in which there is much greater reliance on nurses, Aboriginal health practitioners and workers, and allied health professionals, and that these service providers are only partially and inadequately supported through MBS fee-for-service revenue. Additionally, the bundled payment offered greater predictability in revenue and opportunities to use funds more flexibly in addressing priority needs within the practice population.

Many practices were interested in testing and/or comparing the bundled payment with the fee-for-service model and thus enrolled only a few patients. Practices that enrolled a higher number of patients were more likely to report that the bundled payment model was having a positive financial impact. Nevertheless, some felt that regardless of the number of patients, the financial model did not allow them to provide more services or hire additional staff.

Practices offered a range of ways in which the bundled payment could be improved. Many recommended increasing the level of funding by tier or expanding the tiers to recognise more costly patients to further incentivising practices to focus on prevention and the achievement of positive health outcomes.

Overall, the HCH trial demonstrated that it is feasible to implement a bundled payment approach for Australian primary care services. However, the evaluation was unable to reach clear conclusions about the long-term value of this payment reform. Potential improvements to the approach were identified, and the circumstances in which the approach may be more appropriate. Chapter 26 (p. 341) outlines these.

Overview

HCHs received a bundled payment for services related to enrolled patients' chronic conditions (Box 13). An annual payment rate was set and paid monthly, retrospectively. Payments for each patient began when the patient was enrolled in HCH and ended when a patient withdrew from the trial due to death or other reasons, when the practice withdrew, or when the trial wrapped up in June 2021.

In developing the payment rates, the Department considered spending for about 130 items listed in the Medical Benefits Schedule (MBS) relating to chronic disease. It estimated that the average total MBS fees claimed by general practices for patients accessing the chronic disease items was $862 (2016 prices).[44] Based on this information, payments rates for three tiers were set as shown in Table 19.

Table 19: HCH tier payments (2018 prices)

HCH tier	Payment
Tier 1	$591 per year
Tier 2	$1,267 per year
Tier 3	$1,795 per year

Source: Australian Government Department of Health (2018).[45]

Box 13: Bundled payment inclusions[46]

The bundled payment was intended to cover the following services relating to patients' chronic conditions:

- shared care plan development
- regular reviews
- comprehensive health assessment
- making a referral to allied health providers or specialists
- case conferencing
- telehealth services and monitoring
- standard consultations related to an enrolled patient's chronic and complex conditions
- after-hours advice and care.

HCHs could still claim for consultations not relating to patients' chronic conditions. The Clinical Reference Group created guidance on this.[47] For example:

Question

Does Point of Care (POC) testing of INRs (including the cost of the consumables) come under the HCH bundled payment?

Answer

[44] Australian Government Department of Health. (2016b). *Factsheet: Stage one modelling* http://www.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes

[45] *Australian Government Department of Health. (2018d). Health Care Homes Handbook for general practices and Aboriginal Community Controlled Health Services Version 1.4 August 2018*

[46] Ibid.

[47] Australian Government Department of Health. (2018c). *Health Care Homes Clinical Reference Group Q&As.*

Consults related to INR results from POC testing would normally be MBS-rebated as part of chronic disease management (for example Atrial Fibrillation). Accordingly, these consults, including associated consumables, form part of and are covered by the bundled payment.

Question

AN HCH COPD patient gets an infectious exacerbation. With any patient, this would generally be considered as an acute episode, especially if treated with antibiotics. Considering that COPD patients are more prone to respiratory infections, would the consultation addressing this event be considered as part of an extension of the patient's chronic condition and therefore be covered by the bundle, or would this be an acute event to be billed to the MBS?

Answer
The consultation addressing this event is considered an extension of the patient's chronic condition and therefore covered by the bundled payment.

Question
How should the consultation for the administration of free government vaccines such as the Flu and Pneumococcal be billed for eligible HCH patients?

Answer
The consultation for the administration of free government vaccines in this scenario should be covered by the bundled payment as it would form part of a patient's care plan.

The Department of Health stated that the payment values for each of the tiers were:

> "*...developed from best practice clinical models. They were progressed through a payments working group and have been tested against individual clinician data outside of the 10 selected PHN regions*".[48]

The Department anticipated that the bundled payment under HCH would result in practices receiving about 10% more than under the fee-for-service arrangements for HCH enrolees.[49] It also recognised that the bundled payment may not be suitable for all chronically ill patients, and allowed HCHs to withdraw "very unwell" patients and revert to fee-for-service MBS charges for these patients.[50]

Given that payments under various Commonwealth incentive programs – the Practice Incentive Program (PIP), Service Incentive Program, Practice Nurse Incentive Program and the General Practitioner Rural Incentive program – are dependent on MBS billing, the Department, together with Services Australia, undertook to monitor the incentive payments for practices and provide a top-up for any practice that was disadvantaged as a result of participating in trial.[51]

A new MBS item – item 6087 – was also created before the start date of the trial to record HCH patients' out-of-pocket expenses (so that they could be counted towards to the patient's

---

[48] Australian Government Department of Health. (2016b). *Factsheet: Stage one modelling* http://www.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes
[49] Ibid.
[50] Australian Government Department of Health. (2018d). *Health Care Homes Handbook for general practices and Aboriginal Community Controlled Health Services Version 1.4 August 2018*
[51] Ibid.

safety net). The item had a rebate value of $1.15. This item was also to make out-of-pocket costs visible for the evaluation.

HCHs could still claim for consultations or clinical services not relating to patients' chronic conditions. The HCH Clinical Reference Group created guidance on this.[52]

While HCH patients could still seek services from practices outside of their HCH, the patient enrolment/consent form contained the statement "*4. I agree to seek care from my Health Care Home practice on an ongoing basis*".[53] Also, the HCH Funding Assurance Toolkit required that:

> *The practice encourages an enrolled patient to attend their HCH for all care and, in particular, care that is related to their chronic conditions. This means that visits to other practices by enrolled patients are expected to be minimal (for example, when an enrolled patient is travelling).*[54 (p. 8)]

One of the concerns of practices was how the bundled payment would be shared within the practice. The Department engaged the Australian Association of Practice Management (AAPM) to prepare a guide for practices – the *Health Care Home Activity Monitoring Guide*[55] – for building an internal system to record and monitor HCH activities and allocate funds (Box 14). The Guide provided consistent methods within practice clinical management software for flagging HCH patients and recording their tier. The guidance was tailored for specific software tools, which included: Medical Director/PracSoft, Best Practice, ZedMed and Communicare. The Department did not mandate the guide but provided it as a resource. AAPM conducted a webinar on the Guide through the HCH training platform in October 2017.[56]

---

[52] Australian Government Department of Health. (2018c). *Health Care Homes Clinical Reference Group Q&As*.

[53] Australian Government Department of Health. (2017a). *Health Care Homes Patient Information Statement* https://www1.health.gov.au/internet/main/publishing.nsf/Content/C6EB6F07C8F62954CA2581A90009CA75/$File/HCH%20Patient%20Consent%20Form%20-%20October%202018.pdf

[54] Australian Government Department of Health. (2018b). *Health Care Home Funding Assurance Toolkit March 2018*. https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-assurance-compliance

[55] Australian Association of Practice Management. (2017a). *Health Care Home Activity Monitoring Guide October 2017*. https://www.aapm.org.au/Portals/1/documents/Health-Care-Homes/HCH_Activity_Monitoring_Guide_Oct_2017.pdf

[56] Australian Association of Practice Management. (2017b). *Webinar: AAPM Health Care Homes Activity Monitoring Guide*. Melbourne. Retrieved 13 September from https://www.aapm.org.au/Knowledge-Hub/Healthcare-Homes

Box 14: AAPM HCH Activity Monitoring Guide[57]

The guide provided a list of standardised activities, modes of delivery and responsible roles, and corresponding codes for each of these.

Activities included:

- prepare a shared care plan
- share care plan review
- consultation
- prescribing/ referral
- education
- group consultation
- wound care

Modes of delivery included:

- face-to-face
- telephone
- videoconferencing
- email/secure messaging
- non-contact
- devices/equipment
- other

Responsible roles included:

- GP
- registered nurse or nurse practitioner
- enrolled nurse
- medical practice assistant
- administration
- pharmacist
- Aboriginal and Torres Strait Islander health practitioners

Practice and PHN perspectives on the bundled payment

PHN practice facilitators observed that practical issues associated with the bundled payment, such as how they would divide the payment between participating GPs and what is considered chronic versus acute care, took up a large amount of practices' time in the initial stages of the trial. Managing the bundled payment was a major focus in the beginning stages of program implementation, and some practices felt that they received little guidance on how to effectively set-up and distribute the payment.

> *"… how are we going to then divide that up? How's that going to work? And GPs in particular, [were] very concerned about that. One of the things that really has come out for us is if this is my patient and I'm away and somebody else needs to see that patient, then how am I going to get paid? That sort of thing. Business*

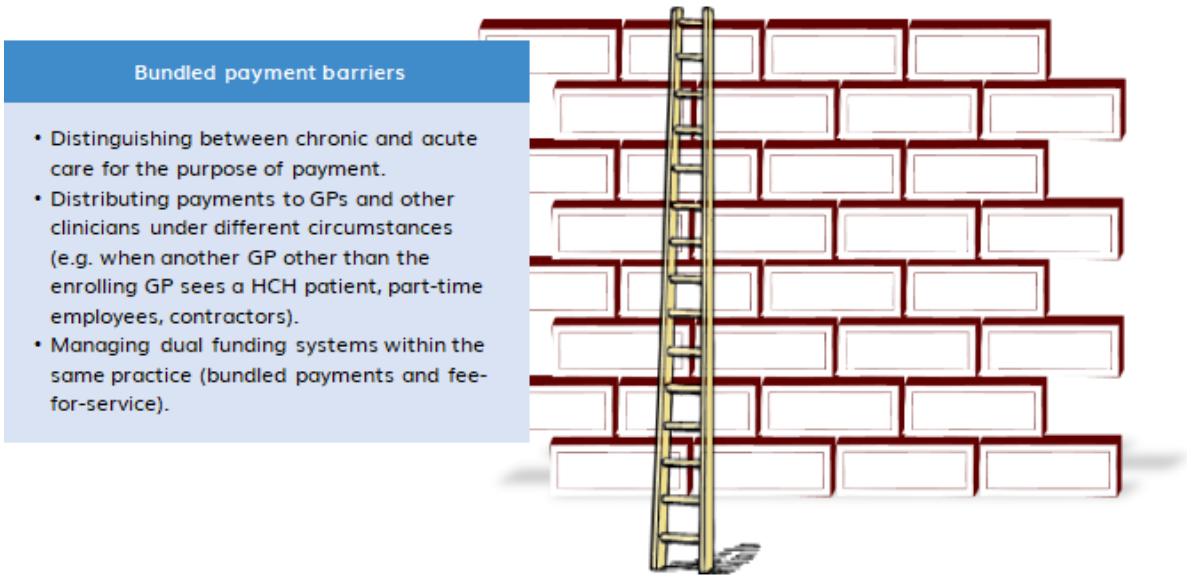
[57] Australian Association of Practice Management. (2017a). *Health Care Home Activity Monitoring Guide October 2017*. https://www.aapm.org.au/Portals/1/documents/Health-Care-Homes/HCH_Activity_Monitoring_Guide_Oct_2017.pdf

owners and practice managers are really, even still, grappling with that aspect." [PHN 1, interview, R1]

"Each practice will do it differently, how they prepare and remunerate people but there's no real guide for that at all in the program. So, no-one's actually said to me: This is how you would pay assistants, this is how... And even setting it up there was none of that information so we've had to do that on our own.... I have a real issue with that, I still really do." [Practice manager, Practice 4, R2]

Practices initially reported challenges and uncertainty in setting up and managing the bundled payment (Figure 12).

Figure 12: Challenges practices reported in implementing and managing the bundled payment



Source: Case study interviews R2, Sept–Oct 2018.

PHNs commented that the high level of change management that practices had to undergo to implement HCH coupled with introducing a novel bundled payment proved to be too much for some practices. PHN practice facilitators spoke of spending time with practices to help them work out how to monitor the bundled payment, leaving limited time for changes to practice:

"...it would have been great to say, give practices 18 months leeway to see, this is where we are heading, let us get in there, do the data cleansing, start preparing them for service delivery under a different model of care. All of those sort of things. Then bring in the payment structure later." [PHN 6, interview, R1]

In some instances practices also had to convince their GPs and staff about the advantages of the bundled payment versus fee-for-service before they could start work on changes to their model of care. One GP described adjusting to the bundled payment model as a "steep learning curve", as it required a different mindset where not every activity would be billed. Many GPs and practices also thought that payments under the model were uncertain, which led to resistance by some. One GP described the bundled payment as a form of "drip-feed funding", and suggested a different approach to the monthly payments:

> *"So, in terms of the drip-feed funding, it needs to be turned around in terms of more upfront in terms of the payments, so that you've got some level of certainty, and are able to plan…"* [GP, Practice 12, R2]

Further into the trial practices appeared to have a better understanding of how to manage the bundled payment:

> *"In terms of funding, I think the way the payments are happening now is quite easy, it's quite good. We're not running an internal fee-for-service system, like new practices are. We're just dividing up the money on a percentage basis to these patients, and that's it. So, we're doing it the easy way."* [GP1, Practice 5, R4]

> *"Again, I'm actually pretty happy with how things are at the moment, and I think any tweaks would require a change in the funding model. So, there's nothing that I have planned to actually tweak at this stage. I think it's actually working quite well of what it is currently."* [GP, Practice 4, R4]

> *"We've also had to tweak our billing structure a little bit. How we manage and how we try and see the workflow … We wrote up our own [items] and tried to mimic the MBS a little bit. Because that's where the doctors book in already, so we didn't reinvent the wheel. We were finding they just weren't using it, and wasn't getting used right … So we found it working a lot better by creating that, and we're slowing getting nurses a little bit more onboard with them billing as well so that we can actually see the service that they're doing, and try and justify that a little better."* [Practice Manager, Practice 10, R4]

However, some practices continued to have issues with how to distribute the payments amongst staff and differentiating between chronic and acute care for the purposes of payment:

> *"The grey zone is this thing in the middle. They come in with three things wrong with them. One of them, which is their Health Care Home thing. Two of which are acute, like that, or they come in with an acute flare of their COPD or an acute flare of their diabetes. And where exactly does that line get drawn? Is that acute, or is that chronic? And how do you bill it?"* [GP, Practice 12, R5]

> *"I think one of the key challenges we haven't yet really figured out, and I think one of the bigger challenges across the board, is how do you manage, when you've got multiple practitioners seeing one patient in the clinic. And if you've got a bundle of funding for the patient going directly to the clinic, how do you fairly portion that in a way that makes sense for each doctor and for the clinic? And how much flexibility can you allow depending on how often a patient sees Doctor A, B, or C? Or how do you manage that?"* [GP, Practice 22, R4]

Managing two systems of charging in the same practice was also an issue for many practices, especially where they had only a few patients enrolled:

> *"It's very difficult when you've got a practice with 15 doctors and there's only one GP enrolled, seven, 10 patients. And he only works half a day a week. Distributing that care within the care team and then obviously the payments, it's causing*

some conflict within the GPs in that practice because the GPs will not see the Health Care Homes patients because the doctor's not on until next Wednesday afternoon." [PHN 2, Interview, R5]

"We had four main participating doctors. Me, being one of them. But all the other doctors are affected, because they've then got to bill the right thing and you've got to reiterate them, and then when it happens at a certain amount, it's just a whole lot of effort… The fact that it doesn't fit into our normal billing processes. That's the barrier. That it adds a whole new billing process and it just makes you have to learn another way of doing things." [GP, Practice 17, R5]

Practice perceptions on the financial impact of the bundled payment

The financial impact of the bundled payment was of central importance to HCHs. Many practices were interested in testing and/or comparing the bundled payment with the fee-for-service model. Some practices deliberately only enrolled a small number of patients to test the model. In the early stages of the evaluation, practices were unable to determine the financial impact, but uncertainty around the new funding model and how to effectively plan their budget was of concern:

"And I'm sure each clinician is going to sit down and look at, how much did that end up making a difference in terms of finances, having a patient enrolled in Health Care Homes. So that uncertainty is the most uncomfortable thing." [Practice manager, Practice 9, R2]

"…trying to be able to budget that money that comes in, because we will have to set-up a separate budget for each patient and then try to work out their care around that income. So, we're struggling with the, it only comes in monthly so you get like $100 for that patient upfront but the first month or whatever, where you might do a shared care plan which is $255 essentially, whatever the costs are, I'm not sure." [Practice manager, Practice 14, R2]

"I think numbers are key to being able to diversify that model, and I think from the practices that have already got 200-plus people enrolled, there's a lot more flexibility in how you can deliver that service, and how you can model the financials of it. For us, we weren't able to do that with the numbers that we enrolled. We needed to, really, push that money to the GPs that have taken a really big hit with the chronic health management compliance issues, and things like that… I think I would really like to be able to use funds to justify more work with dieticians, podiatrists, those allied services. And more nursing support…" [Practice Manager, Practice 10, R5]

As the trial progressed, practices reported mixed feedback about whether they were better or worse off with the bundled payments:

"We had a look at how although some were spending more, some were spending less, is that accurate? So, when you look at in terms of the cost of that patient is now spending through Health Care Homes and what we would be billing through

Medicare, it actually ends up being almost exactly the same as what we would have got if we'd done it through Medicare." [Practice Manager, Practice 23, R4]

"*My impression is that it's probably similar overall to if we weren't part of Health Care Homes. We might be slightly better off.*" [GP, Practice 22, R4]

"*… financially, for us, it's been a benefit too. We can say that. We've done the modelling on that. It's definitely beneficial. It's probably been 15%, 10% up.*" [GP1, Practice 5, R4]

"*… it has taken our nurse more time than expected to do the tracking and administration side of things … If we're seeing a patient for something related to their chronic disease, we can't bill it to the MBS. But it's not been as easy from a tracking perspective to work out would that have been the case when they're not in Health Care Home. For example, if a patient has a few issues in the one visit and part of it is to do with their Health Care Home chronic disease, and part of it is completely acute which wouldn't be Health Care Home related, we should still be able to bill the MBS. And if it was say less than 20 minutes, either way we'd be getting the same money. So whether or not we'd be better off if the patient was Health Care Home or not, that's harder to judge at a more finite level.*" [GP, Practice 22, R4]

"*I think it would be less. Because it's just the monthly payment each month comes through, which is a small amount, especially depending on the level. And they could have come twice during the amount. And the amount of work, we do actually put in a lot of work behind the scenes, and the patients don't actually come in. The nurse does a lot of monitoring on [app], and calls them if she needs to, and things like that. So, we're very proactive.*" [Practice Manager, Practice 11, R4]

"*…it's not working very well for us financially….we get a fixed amount of money and then we have to spend a lot of time making sure that the patient obliges and does come in. So I think the only advantage I can see here is some patient like this program very much.*" [GP, Practice 3, R5]

Those that were negative or still unsure about the impact of the funding model also factored in the increased workload and the significant amount of time that it took to understand and implement the HCH model. Given this, they were unsure they were being adequately compensated by the bundled payment.

In the final survey for the evaluation, practices were asked to qualitatively describe the impact of HCH on the financial viability of their practice. Their responses were grouped into the categories shown in Table 20.

Table 20: Practices' perceptions of the impact of HCH on the financial viability for their practice

Response	No. of responses (% of practices providing this response)[1]
Improved finances of practice/ provides coverage for otherwise unpaid work	18 (24.7%)
Neutral or little to no financial advantage	14 (19.2%)
Negative impact (overall income decreased)	12 (16.4%)
Concerns around staff time/work required to operate program	7 (9.6%)
Small scale of HCH patients enrolled impacted viability or unable to sufficiently evaluate viability due to small number of enrolments	6 (8.2%)
Viability is variable by patient tier	6 (8.2%)
Don't know/ no response	18 (24.7%)

[1] *Practices could provide more than one response. Number of practices is 73.*
Source: Practice survey R5, Mar–May 2021, question 32.

The responses echo the feedback from the interviews in that practices have varying perceptions about the impact of HCH on the financial viability for their practice.

To ensure that patients were getting services that reflected their needs as indicated by their tier and that the practice wasn't worse off financially, some practices carefully monitored patients' use of services:

> *"So, what happens is when the patient comes into the clinic and they see the doctor, the girls [sic] will process the account through the system, and give it a particular code that corresponds to that Health Care Home patient. And then, from there, that invoice is then transferred onto a spreadsheet, and the amount of money that they're utilising is recorded in that spreadsheet. And then, I will then get a bit of tally on what's left in that patient's funding area, to see what other things we can offer them if we can. Or, say, someone's running $1,000 behind, that's okay because there might be something else we can do for them that will alleviate the costs."* [Practice Manager, Practice 23, R4]

Practices that had enrolled more patients were more likely to report that the bundled payment was having a positive financial impact:

> *"Overall, financially … I really was very negative about the whole thing. But now that we have … capped at [more than 200 patients] … we're seeing a good amount of funding that's coming through to us now on a regular basis … it has made no difference to us and the consulting pattern of the GPs that are involved. So, to me, the income is additional to what we're seeing. So, I have changed from very negative to quite positive."* [Practice Manager, Practice 4, R4]

Others reported benefits of the model included increased financial flexibility, income certainty and time savings for GPs:

> *"…the benefit might be that a bit less time is needed by the doctor compared to the nurse. In other words, for some patients if it might have been a 15-minute*

discussion with the doctor, it could instead be with the nurse. Which then frees the doctor up to see other patients or do other things." [GP, Practice 22, R5]

"*The doctors loved it. I have to say all the doctors here are contracted and so when they go on annual leave, they don't get paid. Simple as that. And they get paid a percentage of the fees and so if they see no patients then they get 0% and there's no fees. Whereas in this case they still manage to get this amount of money paid for them whether they're on holiday or not and so as far as that side of it was concerned, the doctors absolutely loved it.*" [Practice Owner, Practice 6, R5]

However, even practices with a higher number of enrolments did not think that the bundled payment would allow them to offer additional patient services (that is, hiring allied health staff, additional nursing support, hosting group sessions, etc.):

"*The concept of having in-house clinical pharmacists, etc., somehow being funded through the program is a little bit pie in the sky as far as the current funding model is concerned…I think the program is funded to the point to which we've taken it.*" [GP, Practice 4, R4]

"*… our nurse here, she's only doing this part-time. This is where we see 100 patients, right? Because we cannot afford to provide a nurse to do this full-time with 100 where we sit down and find that out of the 100 patients of this quality registrations, how many of them would call per week, how many our nurse can do this. The nurse also has other responsibilities as well.*" [GP, Practice 3, R4]

"*… to be honest with you, I think the bundled payment doesn't really cover those services because the amount of time it takes…We have to do house calls…The administrative burden has been high.*" [GP, Practice 21, R5]

ACCHS suggested that the bundled payment may a viable and appropriate payment approach for their settings, potentially with some refinements. ACCHS typically offer a team-based approach in which there is much greater reliance on nurses, Aboriginal health practitioners and workers, and allied health professionals, and that these service providers are only partially and inadequately supported through MBS fee-for-service revenue. Additionally, the bundled payment offered greater predictability in revenue and opportunities to use funds more flexibly in addressing priority needs within the practice population.

Practice suggestions for the HCH financial model

Practices offered a range of ways in which the bundled payment could be improved. Many recommended increasing the level of funding by tier or expanding the tiers to recognise more costly patients:

"*I think the amount of funding would need to be increased at least maybe by a third, on a per patient basis. Because I think the financial structure, particularly with telehealth as it is now, has been barely enough to meet the status quo. And I don't think the perceived benefits for patient, doctor or clinic would be enough to*

incentivise at this stage, particularly because of the fears that the healthcare profession have about a UK style model. [GP, Practice 22, R5]

"*… the next thought is that we've got some very complex patients at our tier 3 level. And there's no way that the process of payments as they're coming through in Health Care Home block funding model would match the Medicare money that we would earn from seeing those more complex patients on a fee-for-service basis.*" [GP, Practice 12, R4]

"*In terms of the current program…there needs to be a tier four…there's some patients that will lose money badly if we enrolled them and we didn't…But likewise, you probably need a tier zero, because there's the 40 to 50-year-old working, busy, middle that are just separate…Their enrolment model would be perfect, insofar it would provide remote access. All their questions, their scripts, their referrals. And you don't need to pay much for that. But…that would be tier zero.*" [GP1, Practice 5, R4]

One GP suggested weighting the payment to account for locality, practice and patient factors. The GP had concerns about picking a subset of patients and treating them differently; therefore, they advocated for establishing an improvement-based-structure that incentivises the achievement of program objectives, with the aim of improving patient health outcomes:

"*…we actually offer the same level of offline support, non-face-to-face support to all patients at the practice…And then [the] improvement structure…it is a three-tier, 10-step program. The 10 steps are broken into three tiers, with the first tier, of course, being the main building blocks. And practices will only be eligible to move up to the next tier when they have demonstrated improvement and some level of mastery of those blocks in the first tier. And then…the payment structure to a practice goes up, according to each tier. And of course, the requirements and the deliverables for practice will be higher as you go up each tier as well. So, the concept of having it as a practice level payment is to allow that payment to be directed more towards team-based care. So, this allows the practice…* [to] *engage other staff and services as needed… we give them a pool of funds which can be used to engage. But to ensure that they are using it properly, you'll have a combination of deliverables, but also, you need to meet certain training levels in order to get to the next tier of payment… that then allows practices to take on a much better role within the healthcare neighbourhood. Which means we can talk about, say, hospital prevention and actually measure hospital prevention, reduction in progression to stage five CKD, chronic kidney disease, which is dialysis.*" [GP, Practice 11, R5]

A few practices suggested a wider rollout of the HCH model supported by a bundled payment:

> "*I think they should definitely embrace it because some model along this line, focusing on preventive health care and increasing patient autonomy, will have to be the way of the future. The fee-for-service model is not going to stay. It just can't.*" [GP, Practice 4, R5]

Several practices and PHNs suggested providing further incentives that focus on prevention and patient outcomes. These included engaging and incentivising other providers and stakeholders across the health system to work to achieve a common goal:

> "*...the government sees the big reward as they can keep people out of hospitals, then that's a lot cheaper for the government. But to really reflect that, it would be, for example, can clinics get paid more if their patients are hospitalised less compared to the expected rate? While in reality, yes, we get paid whether or not we see the patient, but it doesn't in itself incentivise better health outcomes...I think it's important to recognise that whether it's intended or not, however a system is set up will incentivise certain behaviours and not others. What's happened with Medicare is Medicare incentivises face-to-face generally quicker consults, because it doesn't pay as well for longer, complex care. And Health Care Homes in theory could address that, but it does have those weaknesses in the current format.*" [GP, Practice 22, R5]

> "*The Yanks, with their insurer for both the hospitals the primary care had a very clear reason for wanting to keep people in primary care and out of hospital, because it saved the insurer money. We don't have that here, because we've got the dual funding. So, it doesn't do the Commonwealth any direct benefit to keep people out of hospitals. And it doesn't do the states any direct benefit to invest in primary care, because they can't see that. But we saw it astoundingly when you had the insurer investing and putting a facilitator care, monitor care, manager, whatever, a nurse, in each practice. Because they were on top of their patients who were in hospital. And as soon as they got out of hospital, they did everything they could in primary care to keep them from going back. It was an investment well worth it...it goes back to the notion of how I think the further investment could play, by the hospitals investing in primary care.*" [GP, Practice 12, R5]

> "*There is no benefit to us as a practice, apart from making everyone feel good. So, I think that when we do talk about what we call level three improvement plan...there is definitely the concept of shared savings. This is where we have regional pool funded and shared savings.*" [GP, Practice 11, R5]

Many felt that running dual financial systems was too difficult and suggested a single financial model:

> "*I think probably a decision needs to be made one way or the other whether chronic disease management's going to be funded through fee-for-service or is it going to be funded through Health Care Homes and running the two systems side by side seems a bit dumb. So a decision needs to be made about what the*

funding model is. And as far as, and which model is used, doesn't bother me either way." [GP, Practice 2, R4]

Suggestions were also made about ensuring continuity of care for patients at least for their chronic illnesses:

> "*There's a different philosophy that you need to have patients say, but not like in the UK where … you just see your one GP, I think you should have your chronic GP and you're only allowed x amounts of visits per year with another GP that Medicare will pay for. They need to look at other options on how to manage chronic care, but I do agree you should have one GP, one home …*" [GP2, Practice 18, R4]

> "*… if I was in charge of Medicare, I would be saying look, I'm going to limit the number of care plans that can be done for X conditions. I'll be making sure people were locked in with their regular doctors for their chronic disease management so another doctor couldn't just do their [GP management plan] having seen them once or twice while that doctor was on holiday. So that would stop some of the abuse in the system. And just control it in that way, because obviously cost is an issue for the Department of Health and Medicare in terms of overbilling or too frequent attendances…But I think in terms of the chronic disease management, I think it is pretty well run here … I think the nurse's time is still undervalued, [so] I think again is an area which could be improved on. And … have an item number which may come out with this coronavirus thing that twice a year, or three or four times a year … you could have a telephone consultation included in that person's chronic disease care, to make it less arduous than coming in for normal results or for routine follow-up.*" [GP1, Practice 1, R4]

Key evaluation question 2: How does the HCH model change the way practices approach chronic disease management?

High-risk patients with chronic disease are the target group for the HCH program, and consequently, chronic disease management is a principal focus. The evaluation examined changes that occurred within practices over the course of the trial in managing patients' chronic diseases, recognising that some practices reported to have already incorporated chronic disease management processes within their practice before the trial.

The chapters in this section answer the following sub-questions of key evaluation question 2:

- 2.01 What did practices do to implement HCH, and how did this differ between practices, including changes to policies, procedures, systems, administrative processes, changes to manage payment for HCH patients, processes for risk stratification, and patient enrolment?
- 2.02 How did practices approach provision of chronic disease care before the implementation of HCH? What chronic disease management and quality improvement initiatives were in place within the practice at the commencement of the HCH program? Which of these were used and/or enhanced for the HCH implementation?
- 2.03 How did the mix, roles and activities of primary health care staff change following the HCH program implementation?
- 2.04 How did the relationship between the practice and other health care and service providers change during the HCH implementation? Did the HCH program provide opportunities for better coordination of care, information sharing and communication with other health care and service providers?
- 2.05 How did the additional flexibility associated with the bundled payment facilitate practice change? Was the value of the bundled payment sufficient to change the way practices provide chronic disease care?
- 2.06 How did practices change from before the HCH program implementation to the end of the trial in implementing the dimensions of the patient centred medical home?
- 2.07 Which practice level approaches to implementation worked well, and in what contexts?
- 2.08 How did the impact of HCH vary across practices with different characteristics (for example, across different remoteness areas and ownership arrangements)? How did these characteristics affect the success of the model? What does this tell us about the potential of the HCH program to improve access to primary health care, particularly for vulnerable and disadvantaged populations, and improve equity in health outcomes?
- 2.09 How did the HCH implementation change provider experiences of delivering primary care services?

9

Practice early implementation challenges

Box 15: Chapter summary

Practices had very little time to establish themselves as a HCH before patient enrolment opened. The start of the enrolment period also coincided with end-of-year staff leave and the busiest months of the year, delaying enrolment for most practices. The Department later rectified this by extending the enrolment period.

Practices were often unaware of or surprised about the level of training, set up, change management and staff engagement needed to implement the trial. Practices needed to better understand what it meant to be a HCH.

Some practices faced challenges launching HCH within the practice because they had not achieved buy-in and engagement from key staff in the practice, particularly GPs, before applying to participate the trial.

Practices felt that it was challenging to set up for HCH alongside their usually busy workloads. Set up included completing the modules, designing the model that the practice would adopt, installing IT, and preparing for enrolment. Practices needed time to prepare for this large-scale change.

Many practices reported "teething issues" with IT, which were largely resolved as the trial progressed. However, IT issues persisted for many practices in rural and remote locations.

A key lesson from the HCH trial is that for complex programs or innovations such as HCH, allow adequate time for implementation, including time for practices to prepare for change before going live with the initiative. Appropriate resourcing and support should be available during this preparatory period. Chapter 26 (p. 341) outlines key lessons from the HCH trial for implementing large-scale primary health reform initiatives.

Program timeframes

In May 2017, the Department of Health notified the practices that had been successful in their applications for HCH. Selected HCH practices were to begin enrolling patients from October 2017 and the remainder would do so from December 2017. Before practices could enrol patients, the Department had to execute the agreements with the practices and finalise aspects of the program, including the risk stratification software and training modules. The PHNs also had to recruit practice facilitators and the facilitators needed to be trained before they could help practices with setting up as a HCH. Therefore, there was very little time available to finalise elements of the program before the start date for enrolment. Practices also had very little time to prepare internally before the patient enrolment window opened. During this time they had to engage GPs and other staff in the practice, allocate time for staff to train and design their model while still managing their usual workload:

> *"I don't think practices have that long lead time, and that's the issue that you've got to be given time for this change to occur. It's a fundamental change."* [Practice owner, Practice 9, R2]

The enrolment start date also coincided with end-of-year staff leave. With February and March being the busiest months for practices due to the start of the school year, practices could not significantly progress enrolments until April 2018.

The timeframes for implementing HCH needed to both recognise the complexity of the model as well as the context, which is that general practices are busy places:

> *"The program has been quite difficult. There's been dramatic amount of change in a short period of time, and I can tell you now where practices are at. They're at change fatigue stages…"* [PHN 5, Interview, R2]

Practices and PHNs recommended allocating more time to getting ready before enrolling patients and to the program overall:

> *"Well, going back three years, when we started, it was a quick turnaround. I was thinking, we do programs for three years, give them three years of planning within the practice, one year, second year recruiting, third year actually implementing. Give them time. Because a lot of our programs run for the three years, and we get them involved, we set it up."* [PHN 10, Interview, R5]

> *"…If I was redesigning the program, I would say, give one year of investment into leadership, data, cleaning your data, some workflow issues and teamwork, before you are allowed to enrol a patient."* [GP and practice manager, Practice 5, R2].

> *"…give us another few years…We're getting there with a lot, absolutely. A few are really running with it now and we can see that engagement within the team, quality improvement activities happening, they're really running with it, and they're excited about change. COVID didn't upset them because it's something they embraced. So, give us another three years."* [PHN 2, Interview, R5]

> *"Yes, time…that would be the main thing because as you can appreciate, if you're dealing with a new thing what you need is time, and that's the thing you don't have a lot of. One of the things I'd keep going forward…is a certain amount of team time that involves just planning Health Care Homes. And the funding is only for that and can't be used for something else. I think that's one of the things our practice really needs."* [Nurse, Practice 9, R5]

Practice understanding of HCH

Both PHNs and practices reported a lack of understanding of what was required of practices participating in HCH before the start of the trial:

> *"It was very confusing, and even our [PHN] liaison wasn't sure. We were feeding back questions, and then she wasn't sure herself…And through no fault of her own too. Just, the information wasn't out there. It wasn't tried and tested…Maybe just*

really clear planning before the trial started would have been better." [Nurse, Practice 6, R2]

"*It was like the business model came really late in the process. We didn't even know what we were signing up to initially. It's like, here's an open-ended fuzzy, warm contract, and it's not until we were in the trenches that we knew what we signed up for because they didn't know what they were doing...*" [GP, Practice 7, R2]

PHN practice facilitators also described the level of transformation required of practices to become a HCH as a "*cultural change at several levels*" [PHN 1, Interview, R1] and an "*eye opener*" [PHN 2, interview R1]. This "*massive transformation change*" [PHN 1, interview, R1], was unanticipated by some practices who may not have understood or appreciated the extent of change required and thought it was simply a different way of paying for chronic disease management:

"[The bundled payment] *was such a compelling motivator that some of the other microlevel changes that are assumed in this model didn't really seem to get a look in some of the thinking. And because the funding issue was the big issue, I think in some ways Health Care Homes has seemed to be a back-in thing. Like, it's all about financing. And it's not about frontline practice.*" [PHN 8, interview, R1]

Buy-in from practice staff

Some practices faced challenges launching HCH within the practice because they had not achieved buy-in and engagement from key staff in the practice before applying to participate the trial:

"*...a significant omission at the beginning of the process was that when practices had to submit an expression of interest, there was no requirement on them to demonstrate that there had been adequate consultation within the practice about the EOI process and what it would mean for the practice.*" [PHN 5, interview, R1]

In some instances, GPs were unaware that their practice had applied to be part of the trial. This often meant that fewer GPs within practices were willing to participate than originally indicated in responses to the EOI, and practices achieved a much smaller scale of HCH patients than originally intended:

"*...it does come back mostly to really needing to do that engagement quite strongly with the GPs first. Tell them what it's all about and how it will impact them... makes them feel they get that story told first.*" [PHN 10, interview, R1]

PHN practice facilitators stated that working with practices that had little buy-in from GPs made patient enrolment and implementation of the model very difficult. The facilitators suggested that the HCH application process should have required practices to confirm they had agreement from a certain number or percentage of GPs. Other facilitators suggested that the agreements to participate in HCH should be with individual GPs rather than with the practice:

> *"I would consider having individual GP contracts because I do feel they feel slightly removed and slightly removed from responsibility."* [PHN 7, interview, R1]

Lack of buy-in from GPs became a major barrier for some practices in developing key aspects of the model, such as team-based care:

> *"I think if more GPs were involved, more staff would have been involved and more knowledge would have been around the program."* [Nurse, Practice 1, R5]).

One GP expressed ongoing difficulties in getting non-participating GPs within the practice to see his HCH patients when he was away or unavailable, and thought that not implementing the model practice-wide created a divide within the practice, at the disadvantage of patients:

> *"…it then seems that some doctors within the practice, whether it's because of a lack of information, they might feel that I'm being paid for them to see those patients. I don't know. I feel like there's a misinformation. Or other doctors getting the impression that they're doing work for me and I'm getting paid for it, which is wrong… But I think this is where Health Care Homes may actually fall over, … Doctors want to protect their own patients or keep their loyalties… But the Health Care Homes turns it into that individual business model as opposed to universal healthcare practice… I signed up to it for that potential to offer patients a lot more than what they currently received. But it seemed like it's actually created the opposite in terms of their willingness of others to provide care."* [GP, Practice 15, R5]

Information technology

To participate in the trial, practices had to set up new software, which included the RST and shared care planning software. There were also new ways of using existing software, such as enrolling patients in Services' Australia HPOS system, flagging enrolled patients in their clinical management systems, and entering their details in the evaluation app. While practices reported that IT issues were eventually resolved, some incurred high costs having to upgrade their IT systems to accommodate the various tools:

> *"So, we actually had to do a massive upgrade in our practice …equipment, servers and everything else to actually be able to implement all the programs that run… So it's actually been a very costly thing for us."* [Practice manager, Practice 4, R2]

Rural and remote practices tended to report IT issues more often, and in some instances, the issues were ongoing:

> *"I think the software problems has been one of our biggest problems and that took a lot of time to resolve. Not just the RST but everything. We're in a small town, quite isolated. Our IT's run remotely."* [GP, Practice 2, R2].

Practices suggested integration of the different software systems as the point of improvement for future initiatives:

> *We've got* [various software]. *But if it was truly integrated, I wouldn't have to open another software other than … my clinical software. I wouldn't have to have four different logins, even if they're saved, or different people. I'd be able to do it all from the one software that would talk to other people.*" [GP, Practice 7, R2]

Concurrent initiatives impacting the HCH trial

HCH was one of many initiatives operating in primary care in Australia, alongside other new and ongoing initiatives, including:

- The PIP Quality Improvement (QI) Incentive (introduced August 2019)
- My Health Record
- Accreditation
- Mental health initiatives
- Screening and other national prevention campaigns

Many PHNs were also rolling out PCMH models within their regions. Though these initiatives helped some of the HCH practices in these regions better prepare for implementing HCH, some PHNs did not allow practices to participate in initiatives concurrently. Some key reasons for this included being able to effectively evaluate what methods and approaches work and because some PHNs did not want practices to become overwhelmed juggling multiple initiatives:

> "*So, we didn't allow Health Care Homes to apply for those grants [relating to other local PCMH initiative], because it muddies the water too much, like how would you separate your success, then; how would you evaluate it? You just couldn't. So, we made a decision not to…. They all have commonalities, but they're all a different approach. So, yes, what we really want to know is…what works and what shows the best outcomes, and what is the best model, what are the elements that work…*" [PHN 9, Interview, R3]

> "*…the feedback we always get is there's just so much. There's so much stuff that general practice are working on just on a day-to-day basis. And then we put something else in there and we want something else to go in as well. There's all the national campaigns. There's bowel screening and breast screening and cervical screening and smoking cessation. There's so much out there that the general practice can be overwhelmed.*" [PHN 8, Interview, R3]

Some PHN practice facilitators were concerned that HCH practices were missing out on resources available to those participating in other local initiatives:

> "*Because I see at a higher level, both of these programs, I would say that that's one of the frustrations, because I can see in our [other PHN-initiated and supported] programs, we had some initiatives which are really encouraging team-based care or really encouraging some other building blocks, and I can't put them into the Health Care Homes program. Those practices that might be down the*

road, they aren't getting that assistance. They do come to the training, but…[for example] the PHNs do supply non dispensing pharmacists. Or they do supply program money for exercise physiologists, we haven't been able to do that in our Health Care Homes program. Sometimes, it looks like the other program gets all the goodies, as it were…we have continued to quarantine [the programs] and to keep it pure, but I'm not sure that our national colleagues have done that." [PHN02, Interview, R3]

In contrast, one PHN explained that they have pursued the opposite approach and encouraged practices to participate in concurrent local initiatives. In response to whether they have excluded HCH practices from any other local initiatives, they stated:

"No, not at all. If anything, we've probably been adding different services to support them for Health Care Homes." [PHN 4, Interview, R3]

10

Practice model of care changes

Box 16: Chapter summary

Practices were at varying stages of implementing the HCH model of care during the initial enrolment period (until the end of 2018). Some set-up processes for how they would manage their chronic disease patients, but changes were not yet visible to patients. A few made significant changes that affected both patients and staff. While some practices were making changes, others thought that their existing model was aligned with HCH and did not intend on doing anything new. PHN practice facilitators thought that some of the practices making this claim had a limited understanding of the HCH model.

In interviews, no practice mentioned involving patients or their carers/families in identifying priorities for the changes that the practice would implement as a HCH. Also, "*getting regular and actionable input from patients and families on all care delivery issues, and incorporating their feedback in quality improvement activities*" was the most poorly scored item on the HCH-A tool that only minimally improved for practices by the end of the trial.

The extension of the enrolment period (to June 2019) gave practices more time to engage staff and enrol more patients. However, practices still found it challenging to increase their enrolments, even with the time extension. Some deliberately only enrolled a few patients to test the model, and therefore did not enrol more patients when the trial was extended. A few practices were also concerned about investing significant resources in the model when it wasn't clear whether the program would continue.

Following the end of the enrolment period, those practices that thought their model already aligned with HCH before joining the trial continued with their usual practices. The practices that aspired to make changes but didn't identified staff turnover (especially losing champions who drove the program within their practice), the high administrative burden of the program and COVID-19 as factors that reduced staff enthusiasm and engagement with the program and hindered their progress.

While COVID-19 slowed some initiatives, it accelerated others such as HCH patients being able to call or email/text the practice about their health concerns or refill scripts without a GP consultation. Practices also reported that some of the initiatives that they had implemented as a HCH helped them better manage patients with chronic conditions during the pandemic. These included alternative communication mechanisms for patients (telephone, email, secure messaging), proactive contact to check on patients' health and regular meetings of the HCH practice team to review patients' care needs.

Some practices expressed that one of the effects of the pandemic was that it negated the need for a program like HCH with the increased use (and acceptance by patients) of telehealth, eScripts and eReferrals. However, this illustrates a narrow interpretation of the HCH model; that it is predominantly about offering patients alternatives to face-to-face contacts.

Practices reported issues with keeping up with chronic disease management during the pandemic, due to the inability to see patients face-to-face and pressures associated with the pandemic that made it difficult to provide proactive, planned care. Overall, the pandemic stifled HCH activities/progress for many practices.

Practices used the HCH-A tool to assess themselves against dimensions of the PCMH. The tool includes eight dimensions. Across 60 practices that reported their scores in both round 1 and round 5, the mean scores increased on each item and for each dimension. However, the increase was mostly below a value 1, and the increase was statistically significant on only selected items. Across all dimensions and most items, the proportion of practices reporting an increase in the score (that is, rather than the score remaining static or decreasing) was greater than 50%.

The dimensions with the greatest level of improvement were "2 Patient enrolment", "3 Quality improvement strategy", and "6 Patient-centred interactions". A relatively high proportion of practices (60%) reported improvements with the dimension of "5 Organised, evidence-based care", although the difference in mean scores were generally not significant for this dimension. Other items in which there was a statistically significant improvement in mean scores included "31 Practice approach to linking patients to supportive community-based resources" and "34 Contacting the care team during regular business hours".

Initiatives that less than half of the HCH practices said they had in place before the trial included: regular meetings of the practice team to review HCH patients and their care needs; reassigning components of care from the GP or nurse to a medical assistant; introducing new roles within the practice; proactive contact with patients to check how they are going; joint consultations for a patient involving a GP, nurse and allied health; dedicated clinics for patients with specific chronic conditions; group consultations; secure communications/ messaging between patients and GP or nurse; and a patient portal. Of these, during their time in the HCH trial, practices made the least progress with group consultations; reassigning components of care from the GP or nurse to a medical assistant; introducing new roles within the practice; dedicated clinics for patients with specific chronic conditions; introducing a patient portal; and joint consultations involving a GP, nurse and allied health.

Practice staff generally reported improvements in the care planning process during the HCH trial.

Using the Patient Activation Measure (PAM), HCH patients' knowledge, skill, and confidence for self-management did not change between the three time points at which patients were surveyed. Longitudinal analysis of patients who participated in all three surveys found there was an increase in the PAM score, but this was not statistically significant. This is possibly due to patients enrolled in HCH already starting with a higher level of activation than patients with chronic disease in the general Australian population. In the practice survey, almost all practices perceived an improvement in the level of engagement or activation of patients during the trial. The disagreement is possibly due to the PAM measuring patient activation in a different way to which practice staff tend to make these judgements or that practices have more positive perceptions of changes compared with patients, for example, being influenced by exceptions rather than the norm when responding to the question.

Several practices reported focusing on team-based care and delegation from the GP to other team members as part of their HCH transformation. For these practices this focus brought about positive results for both staff and patients and was considered a key change resulting from HCH. Team care was reinforced by routine team meetings or "huddles" and preparing patients for the team approach. GP lack of willingness to delegate care responsibilities (due to mindset or risk management) was a barrier for some practices in enhancing team-based care. Key enablers for team-based care, which were also barriers when not present, were staff engagement with the model, patients' willingness to receive care from other members of the team and awareness of the goals and mechanisms of the HCH model, and use of practices' shared care software by external providers. The practice staff survey showed improvements in team functioning between the beginning and the end of the trial. Nurses' ratings of the extent of team-based care tended to be slightly lower than other staff's ratings.

To keep up with enrolment and ongoing management of HCH patients, some practices hired new

staff and/ or established new roles responsible for HCH patients/ activities. New staff included nurses, medical practice assistants, and administrative assistants. Though some practices with a larger proportion of HCH patients would have liked to hire additional staff for HCH they felt that it was still not financially viable to do so or had issues with staff recruitment or retention.

Practices highlighted the importance and value of data in general practice, and many reported prioritising enhanced data collection and data quality since becoming a HCH. The practice staff survey showed improvements in the use of clinical data from the beginning to the end of the trial. Practices asked for additional external emphasis and work on data quality and benchmarking for enhancing quality of care, establishing targets and more effectively measuring outcomes.

Most practices participating in the trial anecdotally reported improvements in coordination of care, quality of care and access for their patients, and improvements in staff experience and satisfaction.

Overall, key enablers for implementing HCH that practices mentioned were leadership and staff participation, adequate enrolments, adequate resources and a focus on team-based and patient-centred care. Staff turnover and workforce shortages, administrative burden, patients' understanding and expectations of HCH and scale of enrolments were key challenges for practices throughout the trial.

Towards the end of the trial, most practices said that they would participate in a program like HCH in the future. Specific elements they identified that they would continue included telehealth, dedicated chronic disease management roles, team-based care and patient recalls. Elements that they would discontinue included use of shared care planning software and wide use of practice nurses due to lack of reimbursement under fee-for-service payment. While practices believed in the philosophy of HCH, many recommended further enhancements they thought would make it easier to operate the model within their practices or features they felt were necessary for successful implementation.

The HCH trial highlighted there is appetite for changing the focus of primary care toward the principles articulated by the PHCAG for a medical home model, but that there are variable capacities amongst practices to undertake and manage significant change within their practice. Chapter 26 (p. 341) describes steps that could be taken to guide and support practices in their transformation efforts.

Practices' experiences with implementation

Based on interviews with the case study practices and PHNs, in the period up until patient enrolment closed practices were mainly occupied in enrolment activities, and less in defining their HCH model. Therefore, below we represent practices' implementation of HCH in two phases:

- During the enrolment phase (from October or December 2017 until June 2019).
- Following the end of the enrolment phase (from July 2019 until the trial end in June 2021).

During the enrolment phase

Survey responses and case study interviews with both PHNs and practices revealed that practices were at varying stages of implementing HCH during the enrolment period. Some set-up processes for how they would manage their chronic disease patients, but changes were not yet visible to patients. A few made significant changes that affected both patients and staff.

While some practices were making changes, others stated that they already had processes in place for their chronic disease patients, such as care plans, access via phone, nurse-led management, team-based care and individualised treatment; therefore, they did not intend to change the way they practised. They had commented during interviews that they joined the trial to financially support the quality of care they were already providing to their patients:

> "*We spent a lot of time supporting our patients in extra ways, on the phone and so forth anyway. It's not that different that's just because of the way we did it anyway....I think they found some benefit, but a lot of patients probably haven't noticed any difference because we're doing the stuff already.*" [Practice manager, Practice 18, R2]

> "*The most important change? I think probably just thinking outside the square, thinking of a different way of doing things, I would honestly say that's probably the main difference. When I came here, I found the practice to be very patient-focussed, we were always trying to focus on what the patient wanted to do, and it wasn't a task-orientated place anyway. But I think Health Care Homes then gave us a bit of a model to work with, that was probably the only difference I would say.*" [Nurse, Practice 9, R5]

Some PHN practice facilitators agreed that some practices indeed had in place many of the key features of the model before participating in the trial. However, facilitators also felt that some practices had a limited understanding of HCH. For example, one practice facilitator stated that a few practices could not distinguish the HCH model from quality service delivery as articulated in standards against which they are accredited:

> "*...they were just saying 'We've got accreditation and they didn't have anything to say to us about how much we could improve'...*" [PHN 5, interview, R1]

> "*They already think they are providing the best care they can. They don't realise there is any other way of providing care.*" [PHN 9, interview, R1]

Patients' preferences and values are central to patient-centred care.[58] While involving patients in setting priorities at a practice level wasn't an explicit requirement of practices, it can result in priorities that are more aligned with patient-centred care principles than when health professionals alone set priorities.[59] "*Getting regular and actionable input from patients and families on all care delivery issues, and incorporating their feedback in quality improvement activities*" was practices' lowest scoring item on the HCH-A tool at the beginning of the trial (item 26, *Measurement of patient centred interactions*).[60] It had also only improved marginally by the end of the trial (upward movement of 0.98 units [95% CI 0.03 to 1.94] for practices that completed the tool both at the beginning and at the end of the

---

[58] World Health Organization. (2015). *WHO global strategy on people-centred and integrated health services: interim report*. https://apps.who.int/iris/handle/10665/155002

[59] Boivin, A., Lehoux, P., Lacombe, R., Burgers, J., & Grol, R. (2014). Involving patients in setting priorities for healthcare improvement: a cluster randomized trial. *Implementation science : IS*, *9*, 24.

[60] See *Practice self-assessment of* (p. 116) for further details of the tool and other results.

trial.[61] Also, in interviews, no practice mentioned involving patients or their carers/families in identifying priorities for practice change.

In December 2018, the Department announced the extension of the HCH trial. The trial was extended to 30 June 2021 (from 30 November 2019) and the patient enrolment period to 30 June 2019 (from 31 December 2018).

In some instances, practices reported that the trial extension gave them more time to engage staff and firmly implement HCH, allowing them to enrol more patients. Other practices found it challenging to increase their enrolments, even with the time extension:

> "*It was a bit frustrating that you only had a specific timeline to register the patients in, because we were experiencing a lot of [IT] issues…which then delayed it longer.*" [Practice Manager, Practice 23, R4]

> "*We would definitely have liked more [enrolments], yes. We spent all our time convincing the doctors, and then we had to convince the patients.*" [Owner, Practice 6, R4]

Another reason some practices chose not to increase their enrolments with the extension was because they wanted to test the model before committing to a larger HCH patient cohort. Others had concerns about investing significant resources in the trial when it was not clear whether it would continue:

> "*This…is why we choose 100. Because we want to try this out on all aspects from financial, from the doctor's happiness, patient's happiness. All these things we take into consideration. That's why we do not want to increase [the] number.*" [GP, Practice 3, R4]

> "*…the other reason why we didn't end up [enrolling] too many patients in the program was uncertainty about where the program would be after two years. So, it's difficult to get…a large cohort of patients used to it and then after two years say well, we're doing to now can it and we'll have to do things differently.*" [GP, Practice 11, R4]

> "*You'll get the cynic out of me, but generally, what happens in these situations is the program is started with fanfare and with plenty of funding and then once the hook is set and everybody is using it, it tends to get wound back… there'll be this expectation about what the care looks like in general practice and the funding will disappear for it.*" [GP, Practice 2, R4]

Post patient enrolment

Similar to the enrolment period, the level of change amongst HCHs varied in the post enrolment period. Those practices that thought their model already aligned with HCH before joining the trial continued with their usual practice:

[61] See Volume 3, Appendix 9, Table 137 for this analysis.

> *"I don't think we've gained or seen as much change within the practice as we might have been hoping might have occurred. So, we had already invested quite a bit of our time in developing a model of care for enhanced primary care, in particular, chronic disease management.* [GP, Practice 2, R4]

The practices that aspired to make changes but didn't identified staff turnover (especially losing practice champions who drove the program), the high administration burden of the program and COVID-19 as factors that reduced staff enthusiasm and engagement with the program and hindered their progress:

> *"It's hit a bit of a plateau probably due to a few things….[W]hat I'd say is that 90% of our focus ended up being on the administration implementation. That has made it very hard to change the clinical context too much because the administration load was high…And then our team administrator had a baby and has taken 12, 18 months off work. And our nurse who was running a program moved…And so with key staff and personnel and such a complex administrative system, it really has stifled our ability to innovate in the Health Care Homes space much in the last 12 or 18 months."* [GP, Practice 7, R4]

> *"…when it first started everyone had a lot of enthusiasm for the program, we had a dedicated Health Care Home nurse who was reviewing patients on a regular basis, leaving us messages. It seemed to be running quite well. And I see a lot of that enthusiasm has dropped off. I don't think patients are being reviewed as often, I don't think the Health Care Home nurse is telephoning people as often. I feel like it's just been fizzling it out."* [GP1, Practice 1, R5]

Practices highlighted the following as initiatives they had hoped to progress during the trial but didn't:

- group sessions
- nurse-led consults
- increased collaboration with the HCH neighbourhood via the shared care planning tools
- introduction of an Aboriginal liaison officer
- implementation of the PAM tool to measure patient activation and outcomes.

Impact of COVID-19

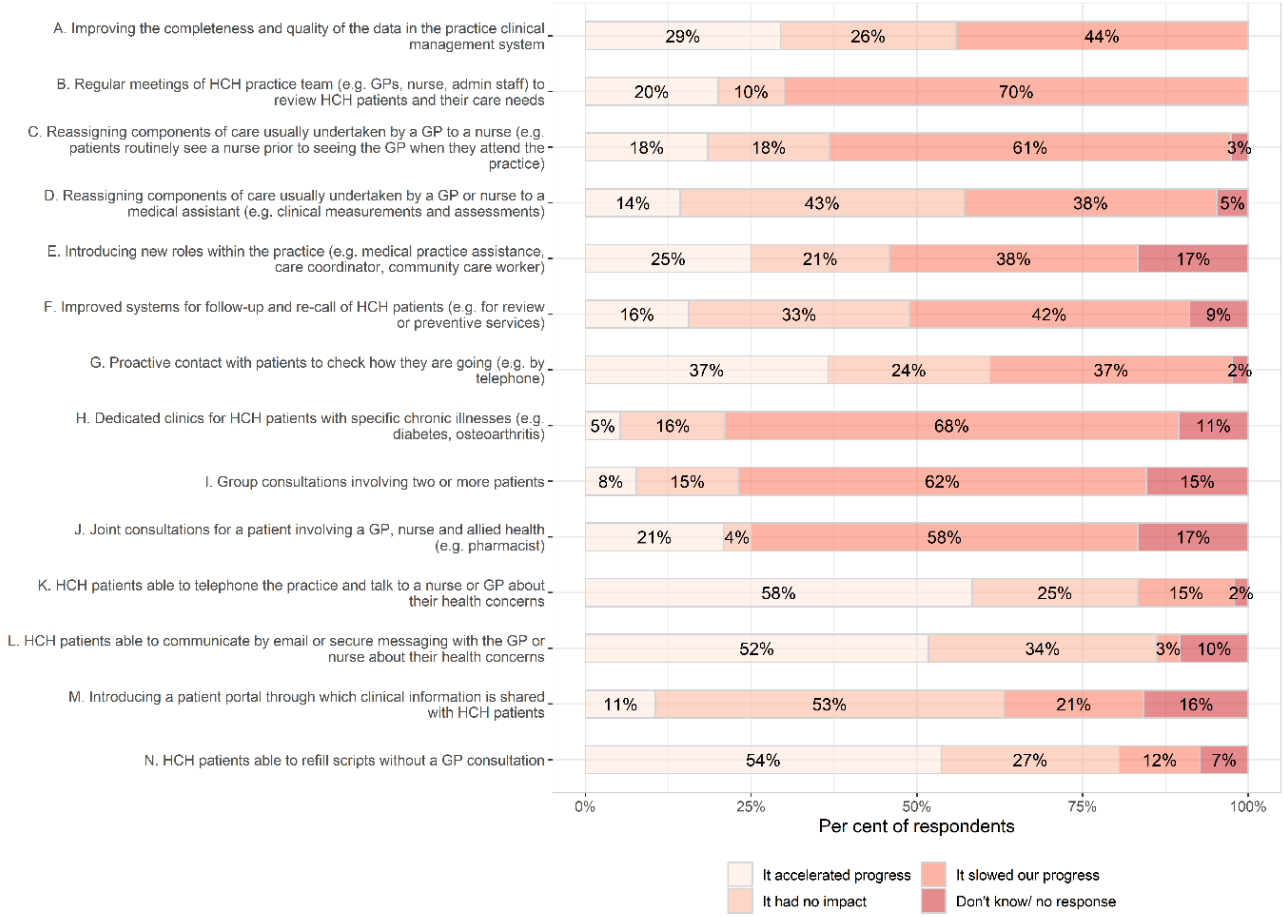
In the practice survey, practices reported the extent to which the COVID-19 pandemic affected their progress with HCH implementation (Figure 13). Initiatives where COVID had slowed practices progress included:

- B: Regular meetings of HCH practice team to review HCH patients and their care needs – 70%
- H: Dedicated clinics for patients with specific chronic conditions – 68%.
- I: Group consultations – 62%
- C: Reassigning components of care usually undertaken by a GP to a nurse – 61%
- J: Joint consultations for patients involving a GP, nurse and allied health – 58%.

Initiatives that the pandemic had accelerated progress included:

- K: HCH patients able to telephone the practice and talk to a nurse or GP about their health concerns – 58%
- N: HCH patients able to refill scripts without a GP consultation – 54%
- L: HCH patients able to communicate by email or secure messaging with the GP or nurse – 52%.

Figure 13: To what extent did the COVID-19 pandemic affect your progress with implementing this initiative?

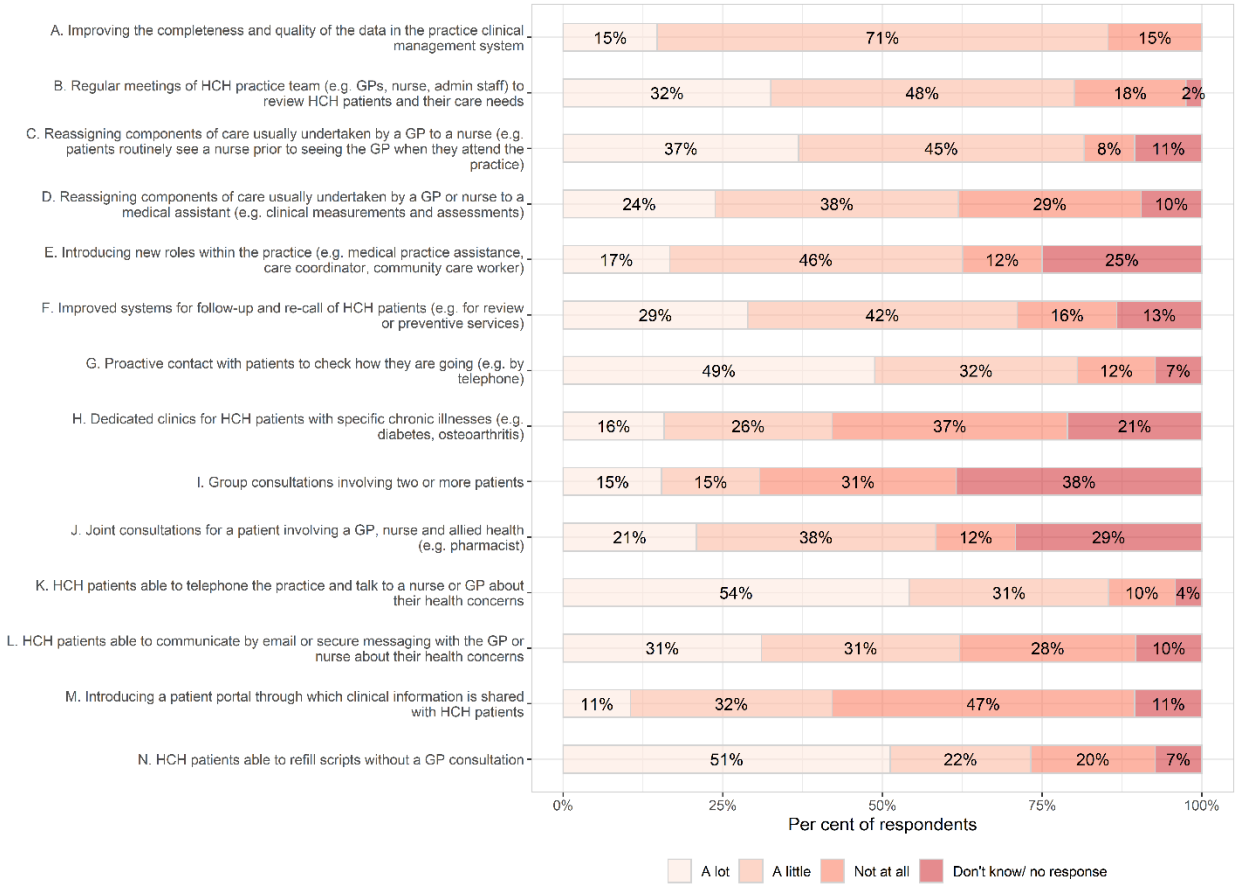


Source: Practice survey R5, Mar–May 2021, question 9.

Initiatives practices implemented that helped them better manage patients with chronic conditions during the pandemic included (Figure 14):

- K: HCH patients able to telephone the practice and talk to a nurse or GP about their health concerns – 54%
- G: Proactive contact with patients to check how they are going – 49%
- C: Reassigning components of care usually undertaken by a GP to a nurse – 37%
- B: Regular meetings of HCH practice team to review HCH patients and their care needs – 32%
- L: HCH patients able to communicate by email or secure messaging with the GP or nurse – 31%

Figure 14: Did implementing this initiative help your practice better manage patients' care during the COVID-19 pandemic?



Source: Practice survey R5, Mar–May 2021, question 9.

In the survey, practices were also asked about the relative use of specific contact modes in 2020 compared with the previous year. Most practices reported less face-to-face visits and more telephone and video calls and emails (Table 21). More than half of the practices said that they did not use video as a means of patient contact.

Table 21: Practices' contact modes with patients in 2020 compared with 2019

Mode	No. of practices providing this response[1] (% of practices with a response other than "Don't know/no response")				
	Did less of this in 2020 compared with 2019	Did more of this in 2020 compared with 2019	No change using this mode in 2020 compared with 2019	N/A (i.e. we do not use/offer this mode)	Don't know/ no response
Face-to-face	58 (84.1%)	2 (2.9%)	9 (13.0%)		4
Telephone		64 (92.8%)	6 (8.7%)		3
Video		20 (31.7%)	6 (9.5%)	37 (58.7%)	10
Email	4 (6.2%)	25 (38.5%)	20 (30.8%)	16 (24.6%)	8
Other (text/SMS, home visits, other)	1 (16.7%)	3 (50.0%)	2 (33.3%)		67

[1] *Number of practices is 73.*

Source: Practice survey R5, Mar–May, question 22.

In interviews, practices generally reported care for their HCH patients largely stayed the same throughout the pandemic. Many practices already had systems in place that allowed their HCH patients increased flexibility and access to the practice via phone and email:

> *"I don't feel for the Health Care Homes patients it's had a lot of impact on, because like I said, they've already been able to access that the same way."* [Practice Manager, Practice 16, R5]

> *"I don't really think it had any impact at all, because the patients were still getting spoken to. I was still calling them and they were still calling me back if they had any requirements. We still had to have doctors and others they need to see ideally. So, I can't say that there's been real effect of anything, knock-on effect of anything, at this stage."* [Nurse, Practice 21, R5]

There were a few instances where the changed arrangements during COVID helped with HCH patients' acceptance of telehealth by their doctor:

> *"No, we found right at the start, or the initial start, our patients didn't want to do the telehealth. They were happy to talk on the phone to the nurse, but not to the doctor, so we had a bit of push back, right at the start. I think COVID, then, made a huge impact, because we had to use a lot of telehealth and telephone. So, I think going forward, that will stay."* [Practice Manager, Practice 24, R5]

Several practices remarked that the increased use of telehealth, eScripts and eReferrals, during the pandemic "levelled out the playing field" between HCH and non-HCH patients within a practice:

> *"It hasn't changed dramatically. The only thing that's changed in the equation is with telehealth rebates, that previously it would be more worthwhile because we'd get paid with the Health Care Homes bundle for that work. And not through MBS unless we had a face-to-face appointment. Now, in theory a doctor could have a five to seven-minute phone appointment for an existing patient to do an updated script, and then get $37 for that rebate. So, it less incentivises the Health Care Homes approach."* [GP, Practice 22, R5]

> *"If Telehealth stays in some format long-term, then you're already cutting away one thing that you're saying the doctors… This payment can cover for you to talk to the patient on the phone is one of the things that was different about Health Care Homes. If you haven't got that, it definitely takes away something."* [Practice Manager, Practice 18, R5]

A few practices remarked that the systems they had implemented for their HCH patients made it easier to transition to telehealth and eScripts for their broader patient population:

> *"…while we're talking about phone consults, that the fact that we'd already done phone consults for our Health Care Homes patients I think put us miles ahead of lots of other practices who weren't already doing those things. So, I found our team didn't freak out about what the legalities around this are, what the standard call would be. And, similarly, patients were much more accepting of it as*

well because their other family members had participated in phone consults." [GP, Practice 9, R5]

"*…some things worked really well because we were doing them already with Health Care Homes like the emails of scripts and the finding of scripts and referrals and APC. So, we were already looking after our patients actually quite well before COVID. So, when COVID came, it actually was quite easy to keep looking after those patients because they were used to contact outside of the clinic, other communication means. So, it worked really well for those patients.*" [Nurse, Practice 4, R5]

A few practices reported increased pressures with the pandemic that made it difficult to provide proactive, planned care for their patients. Pressures included transitioning their non-HCH patients to telehealth, changing workflows, establishing respiratory clinics and preparing for the vaccine rollout:

"*…in more recent times, trying to establish the vaccination component of the GP respiratory clinic, as well as vaccination within the practice. Across all of those times, there's been a distraction from COVID, and that's really led us to fall back, I think, to just really providing, I'm going to say, reactive care. The most apparent demonstration of that is that the regular team meetings that we were having from early, through until perhaps, soon after March last year, stopped, because of simply being busy with the COVID issues.*" [GP, Practice12, R5]

"*In the last 12 months, we were almost forced to move a bit more digitally and embrace the whole telehealth concept. Our access has been more online than the previous 12 months. That's brought in some new advantages but then also some challenges as well. It made it difficult to get particularly these vulnerable patient groups compliant or willing to come into the clinic for a while there, when COVID was really quite bad. Which meant things like their blood pressure wasn't measured as regularly as what we previously would have been doing. You would have heard on the news and the media all of the mammograms and all of those sorts of screening was forced to be stopped as well.*" [Nurse, Practice 22, R5]

In some instances, practices reported that the pandemic shifted the focus away from HCH and that the program received less attention, they had to stop certain activities or were unable to make certain changes, such as introducing group sessions and nurse-only consults:

"*…it's almost like that took over our lives. There wasn't much space to think about Health Care Homes.*" [GP, Practice 9, R5]

"*We haven't really done anything different, I don't think, than we were doing before, we've just continued on. I think COVID didn't help…with some of the things we were planning to do, which we couldn't. But on the whole, it's just rolled on as we were doing it. We still wanted to do the patient's heath assessments, diabetes and asthma and all of those things as well, incorporated in the Health Care Homes payment…unfortunately, because COVID did impact us a lot. We couldn't do any group things.*" [Practice Manager, Practice 24, R4]

> *"Oh yes, [COVID-19] stopped [the group classes]. It stopped everything for a few months. Back in March last year. But then we were able to restart them up. I don't remember exactly how soon after it was. But it was a few months. And we restarted them just at a smaller capacity. So, we wouldn't fit as many in the class with social distancing and all of that sort of stuff. But we're back up and running now with it, which is good.* [Exercise Physiologist, Practice, R5]

Practices' qualitative feedback was consistent with the feedback from a wider range of practices responding to the survey (Table 22). Many reported positive impacts of the pandemic in boosting the use of telehealth and IT, and that processes that they established as part of HCH before the pandemic helped them during the pandemic. However, more reported negative impact, of which the most prevalent was that the pandemic stifled their HCH activities/progress. They gave similar responses to the effect of COVID-19 on their chronic disease management processes.

Table 22: Impact of COVID-19 on practices' HCH activities

Reflection	No. of times this reflection was mentioned (% of practices providing this reflection)[1]
Positive	
Increased telehealth/introduced IT initiatives (including eScripts)	21 (28.8%)
HCH processes established before COVID-19 made changes during COVID easier (that is, patients used to telehealth/enhanced chronic disease management already in place)	18 (24.7%)
Negative	
Stifled progress, COVID was priority	17 (23.3%)
Impacted group sessions/classes	7 (9.6%)
Fewer face-to-face appointments/patients hesitant to come in	5 (6.8%)
Telehealth and the rollout of other initiatives due to COVID negated some benefits of HCH	5 (6.8%)
Difficult to contact patients or resistance to telehealth	5 (6.8%)
Impacted staffing/staffing changes	5 (6.8%)
Fewer appointments allied health/specialists	1 (1.4%)
Reduced nurse role	1 (1.4%)
Other (negative impact on patient information, lack of direction)	2 (2.8%)
Other	
Limited/no change	7 (9.6%)
Don't know/ no response	13 (17.8%)

[1] *Practices could provide more than one reflection. Number of practices is 73.*

Source: Practice survey R5, Mar–May 2021, question 10.

Practice change initiatives

In practice surveys, practices were asked whether specific initiatives were features of their practices before the HCH trial. Initiatives that less than 50% of practices said they had in place before HCH included:

- B Regular meetings of HCH practice team to review HCH patients and their care needs
- D Reassigning components of care from the GP or nurse to a medical assistant
- E New roles within the practice
- G Proactive contact with patients to check how they are going (for example, by telephone)
- H Dedicated clinics for patients with specific chronic conditions
- I Group consultations
- J Joint consultations for a patient involving a GP, nurse and allied health (for example, pharmacist).
- L HCH patients able to communicate by email or secure messaging with the GP or nurse
- M Having a patient portal through which clinical information could be shared with patients.

Table 23: Initiatives that practices implemented as part of HCH – Whether the initiative was a feature of the practice before HCH and whether it was a focus during HCH trial

Initiatives practices implemented as part of HCH	Was this a feature of practice before HCH	Was a focus of change during HCH
A. Improving the completeness and quality of the data in the practice clinical management system	61 (82%)	42 (57%)
B. Regular meetings of HCH practice team (for example, GPs, nurse, admin staff) to review HCH patients and their care needs	33 (45%)	45 (61%)
C. Reassigning components of care usually undertaken by a GP to a nurse (for example, patients routinely see a nurse before seeing the GP when they attend the practice)	53 (72%)	38 (51%)
D. Reassigning components of care usually undertaken by a GP or nurse to a medical assistant (for example, clinical measurements and assessments)	23 (31%)	21 (28%)
E. Introducing new roles within the practice (for example, medical practice assistance, care coordinator, community care worker)	17 (23%)	24 (32%)
F. Improved systems for follow-up and re-call of HCH patients (for example, for review or preventive services)	53 (72%)	47 (64%)
G. Proactive contact with patients to check how they are going (for example, by telephone)	40 (54%)	45 (61%)
H. Dedicated clinics for HCH patients with specific chronic illnesses (for example, diabetes, osteoarthritis)	13 (18%)	20 (27%)
I. Group consultations involving two or more patients	7 (9%)	15 (20%)
J. Joint consultations for a patient involving a GP, nurse and allied health (for example, pharmacist)	25 (34%)	25 (34%)

Initiatives practices implemented as part of HCH	Was this a feature of practice before HCH	Was a focus of change during HCH
K. HCH patients able to telephone the practice and talk to a nurse or GP about their health concerns	50 (68%)	53 (72%)
L. HCH patients able to communicate by email or secure messaging with the GP or nurse about their health concerns	28 (38%)	30 (41%)
M. Introducing a patient portal through which clinical information is shared with HCH patients	9 (12%)	22 (30%)
N. HCH patients able to refill scripts without a GP consultation	44 (59%)	47 (64%)

Source: Practice survey R5, Mar–May 2021, question 9.

In the final practice survey (round 5), practices that remained in the trial were asked about which initiatives they were focussing on and about their progress on each initiative. The initiatives that practices were most commonly working on included (Figure 15):

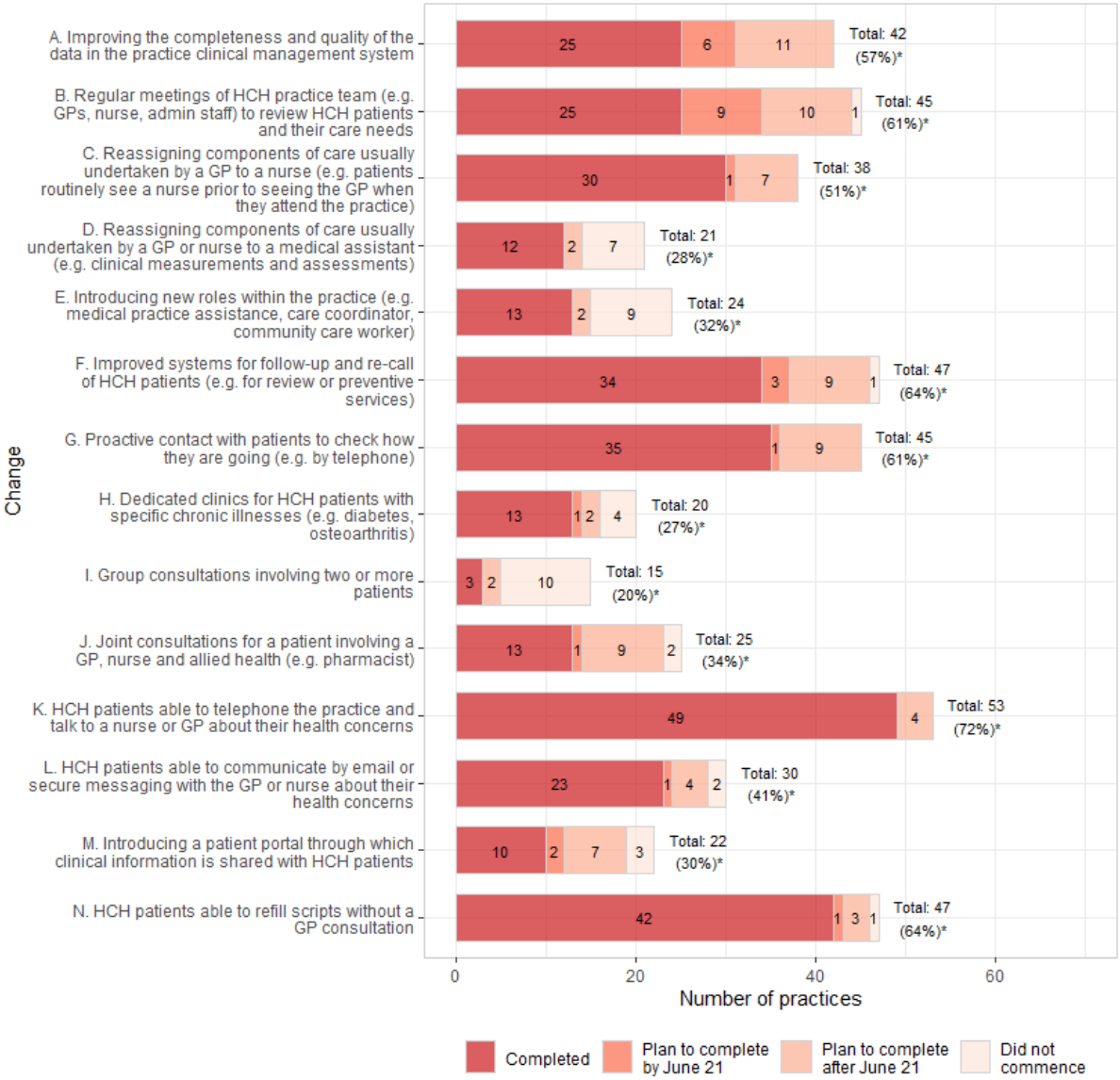
- K HCH patients able to telephone the practice and talk to a nurse or GP about their health concerns: 53 (72%) of practices responding to the round 5 survey identified this as a change they focussed on during the HCH trial, and 49 had completed this change at the time of the survey, with the remain 4 intending to complete the change by the end June 2021.
- N HCH patients able to refill scripts without a GP consultation: A focus of 47 (64%) of practices and achieved at the time of the survey by 42 practices.
- F Improved systems for follow-up and re-call of HCH patients: A focus of 47 (64%) of practices and achieved at the time of the survey by 34 practices.
- G Proactive contact with patients to check how they are going: A focus for 45 (61%) of practices and achieved at the time of the survey by 35 practices.
- B Regular meetings of HCH practice team to review HCH patients and their care needs: A focus for 45 (61%) of practices and achieved at the time of the survey by 25 practices, with a further 9 planning to achieve this by June 2021 and 10 at a later date.
- C Reassigning components of care from the GP to a nurse: A focus for 38 (51%) of practices and achieved at the time of the survey by 30 practices, with a further 1 planning to achieve this by June 2021 and 7 at a later date.
- A Improving the completeness and quality of the data in the practice clinical management system: A focus for 42 (57%) of practices and achieved at the time of the survey by 25 practices, with a further 6 planning to achieve this by June 2021 and 11 at a later date.

Changes that were a focus for fewer practices and for which there was generally less progress included:

- I Group consultations involving two or more patients: a focus for 15 practices (20%), of which only 3 had completed the change at the time of the survey.
- D Reassigning components of care usually undertaken by a GP or nurse to a medical practice assistant: A focus for 21 practices (28%), of which 12 had completed.
- E Introducing new roles within the practice (for example, a Medical Practice Assistant, care coordinator): a focus for 24 practices (32%), of which 13 had completed.

- H Dedicated clinics for patients with specific chronic conditions (for example, diabetes, osteoarthritis): a focus for 20 practices (27%), of which 13 had completed
- M Introducing a patient portal through which clinical information is shared with HCH patients: a focus for 22 practices (30%), of which 10 had completed.
- J Joint consultations for a patient involving a GP, nurse and allied health (for example, pharmacist): a focus for 25 practices (34%), of which 13 had completed.

Figure 15: Progress on changes that practices planned to make on during the HCH trial



Source: Practice survey R5, Mar–May 2021, question 9.

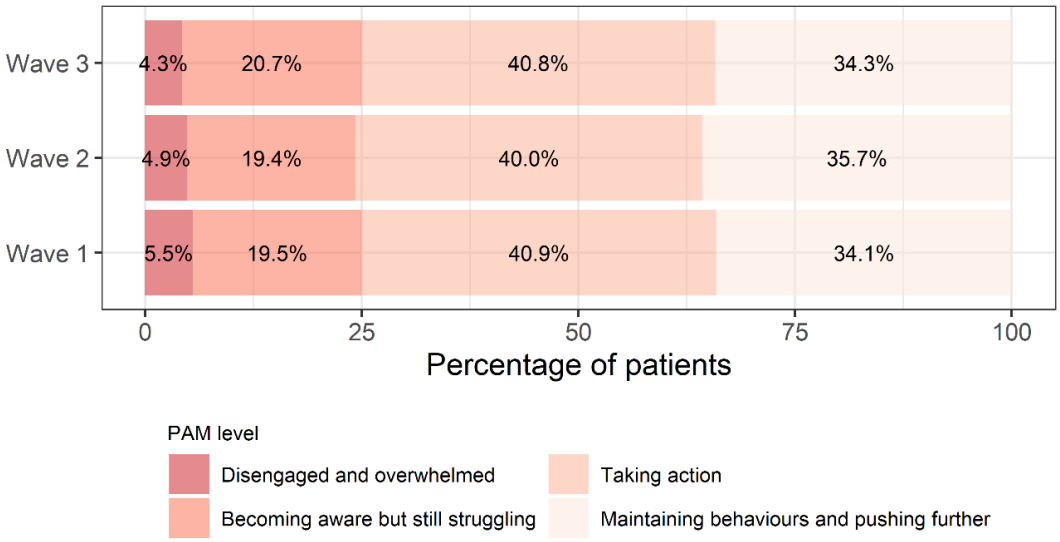
Selected components of the HCH model

Patient engagement/activation

The 13-item version of the Patient Activation Measure (PAM)[62] was included in each of the patient survey waves. Using each respondents' level of agreement with the 13 statements, a score was calculated ranging between 0 and 100, where 100 is the highest level of activation. Patients were then assigned to one of four categories based on their overall score. Figure 16 shows the distribution of HCH patients across the four categories at each of the three survey waves. Overall, there was little difference in scores between the three waves, with the mean increasing from 66 in wave 1 to 67 in waves 2 and 3. Longitudinal analysis of patients who participated in the three waves found there was an increase in the PAM score, but this was not statistically significant – an increase in the score of 0.67 (95% CI -0.07 to 1.38) at wave 2 and 0.30 (95% CI -0.44 to 0.99) at wave 3.

More detailed analysis of the PAM items and scores is in Volume 3 (Appendix 7). This shows that the level of patient activation declined between tier 1 (mean of 68), tier 2 (mean of 67) and tier 3 (mean of 64).

Figure 16: Patients by category derived from their PAM scores



Source: Patient survey Wave 1, Dec 2017–Mar 2019; Wave 2, Dec 2019–Mar 2020; and Wave 3 Mar–Apr 2021.

It is possible that levels of patient activation in the HCH patient cohort may have been higher than similar patients in the general population. The proportion of patients in the most "activated" categories were higher for the HCH cohort compared with a recent survey of patients with chronic disease drawn from the general Australian population.[63] Also, practices

[62] Hibbard, J. H., Mahoney, E. R., Stockard, J., & Tusler, M. (2005). Development and testing of a short form of the patient activation measure. *Health Serv Res*, *40*(6 Pt 1), 1918-1930.

[63] Consumers Health Forum of Australia. (2019). *Patient Activation in Australians with Chronic Illness – Survey Results*. https://chf.org.au/sites/default/files/20191030_rpt_patient_activation_survey_report_final.pdf

reported that they tended to target patients to enrol in HCH that they thought were more activated and willing to try new things:

> *"The experience that I've had so far, I would say, doesn't encourage me to recruit those that I feel are less likely to proceed, because I sort of have to predict in my head: are they likely to be agreeable to anything I suggest? If they're a patient that's not likely to be agreeable, I might not even offer them the option, just because I know the effort that was required and the fruitless effort that I've experienced in the past."* [GP, Practice 15, R4]

> *"…I suppose my issue with the trial is that it's a difficult trial because it's individual practices who cherry picked their patients, so I don't know if it's a particularly robust trial because the data that you get, we picked patients who want to do well, so their numbers or the fact that they come back, you know, you're going to get those numbers."* [GP2, Practice 18, R4]

In the practice survey, almost all practices perceived an improvement in the level of engagement/activation of patients during the trial (Table 24). The disagreement between the patient survey and practices' reports of changes in patient engagement/activation is possibly due to the PAM measuring patient activation in a different way to which practice staff judged patient engagement/activation. Another possible explanation is that practices have a more positive perception of changes that have occurred compared with patients, for example, being influenced by exceptions rather than the norm when responding to the question.

Table 24: Practices' perceptions about improvements in the level of engagement/activation of HCH patients

Improvement in the level of engagement/activation of patients	No. of practices (%)
Significant improvement	9 (12.3%)
Moderate improvement	33 (45.2%)
Small improvement	19 (26.0%)
No improvement/reduction	8 (11.0%)
Can't say/don't know	4 (5.5%)
Total	**73 (100%)**

Source: Practice survey R5, Mar–May 2021, question 6.

Practices attributed improvements they observed in their HCH patients in engagement, health literacy and self-management to the education they provided to patients and team care. They commented that with team care patients had more time with nurses to talk to them about their conditions through various modes of communication.

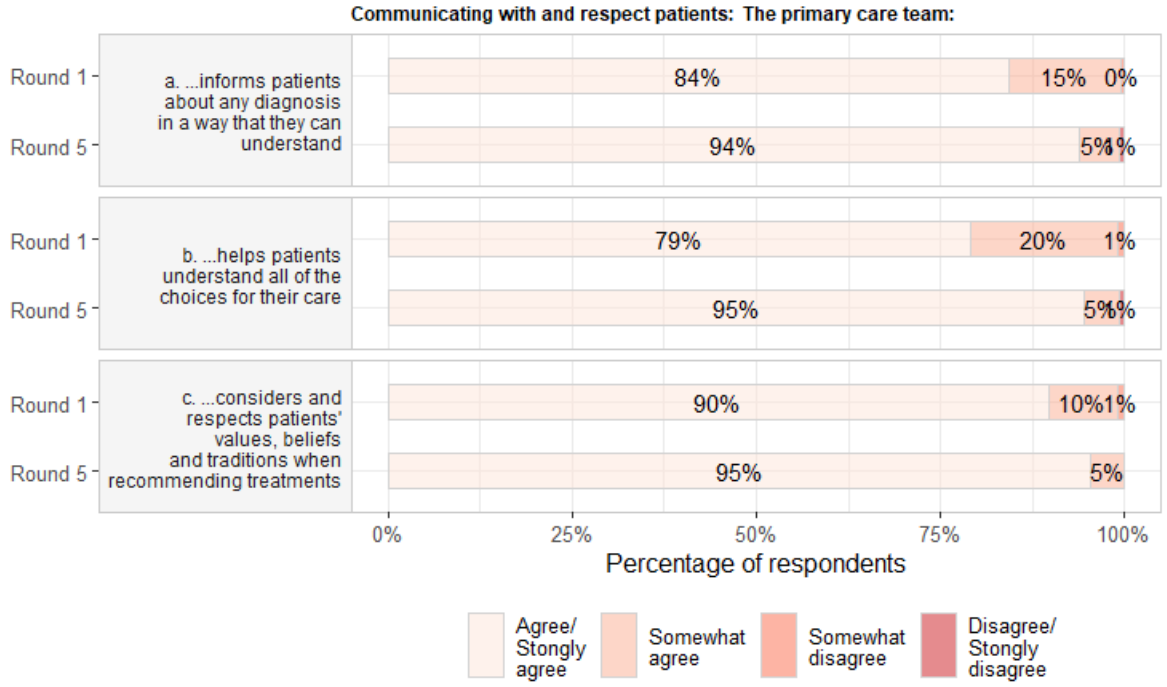
Some also felt that the practice being more proactive in looking after their patients encouraged patients to take more responsibility for their health and be more involved in their care:

> *"If they don't come to see a doctor, then they have to bear the consequence. We don't force them to come and see us. But now with this particular program, the responsibility is shifted over to our clinic, our doctor, and to our nursing staff. So…[we]…recall them and we have to spend a lot of time checking their results,*

whether they comply with all sort of thing that we expect them to do, so of course, this has become interactive." [GP, Practice 3, R5]

Staff responding to the staff survey reported that there were improvements in ways in which practice staff communicated with patients (Figure 17).

Figure 17: Staff assessment of primary care team's communications with patients



Source: Staff survey R1 Dec 2017–Jul 2018 and R5 Mar–May 2021.

In interviews conducted for the case studies, some patients mentioned that they were motivated to join HCH because they wanted further information and education on what they could do to manage their conditions and improve their overall health, and spoke of a desire to have more control or engagement in the management:

"*Simple awareness of what I can to do to help myself. I had a number of questions about my fluctuations in my diabetic levels…*" [Patient 1, Practice 18, R2]

"*… it means that I've got a little bit of control of what's going on with me, rather than me saying, someone else has got control and I don't know what's going on.*" [Patient 1, Practice 9, R4]

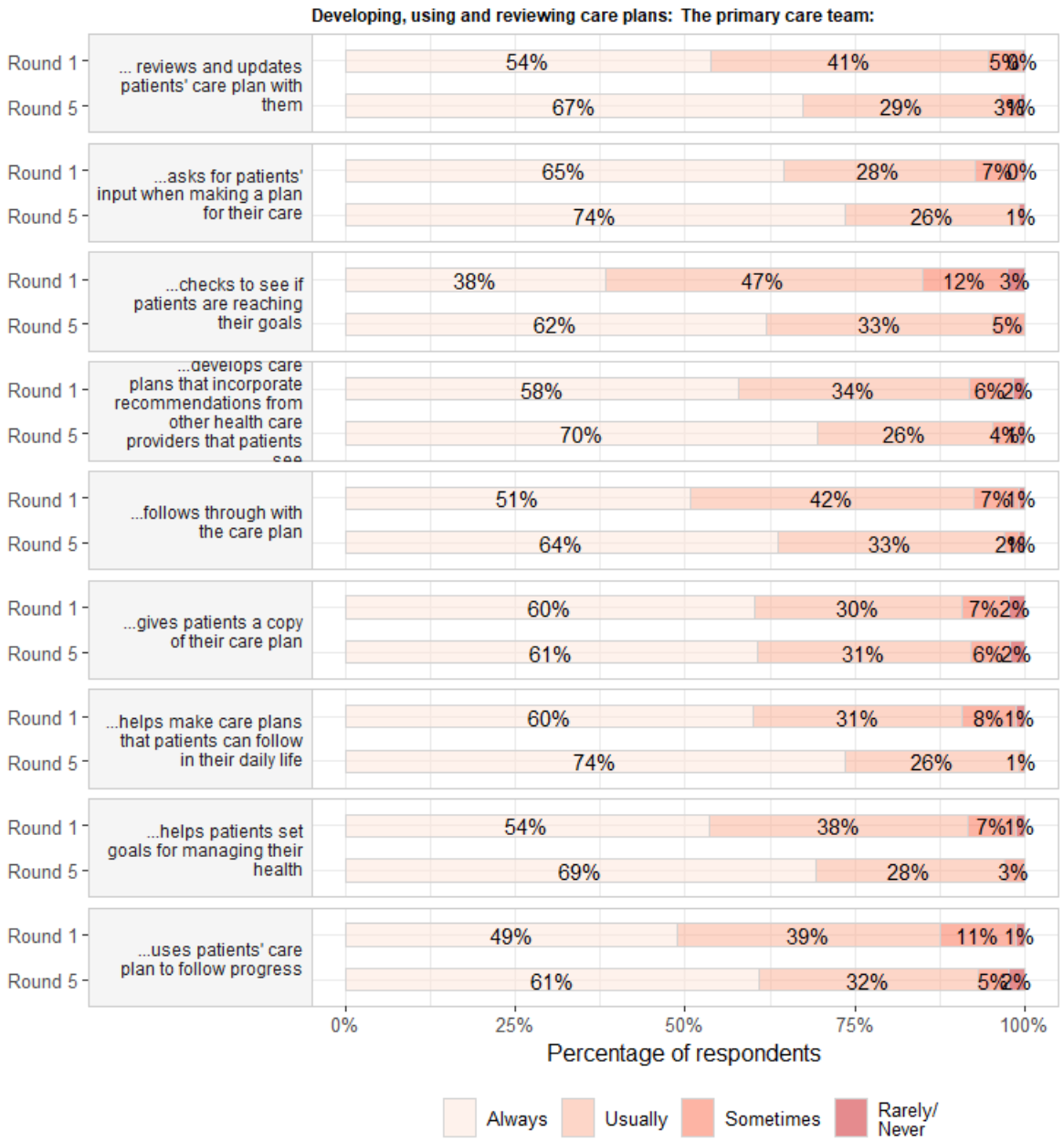
"*I think there's a part of the equation as well, and the notion of patient activation. There's only so much a practice can do. They're only seeing you for a very limited time over the course of a month or a year. So, ultimately I think the benefit of the Health Care Home is really about support of the patient to support themselves better.*" [Patient 7, Practice 7, R4]

"… I feel more confident. I feel less pressure. As if someone over there is looking after me and helping me. I can find a solution to my problem." [Patient 1, Practice 3, R4]

Care planning

Development of comprehensive care plans for patients was a key feature of HCH. In surveys conducted shortly after the start of the trial (round 1) and at the end of the trial (round 5), practice staff were asked a series of questions about care planning. Figure 18 presents the results. Across these questions practice staff generally reported improvements in the care planning process. Other aspects of care planning are discussed in Chapter 11 Shared care planning tools (p. 128).

Figure 18: Staff assessment of primary care team's care planning



Source: Staff survey R1 Dec 2017–Jul 2018 and R5 Mar–May 2021.

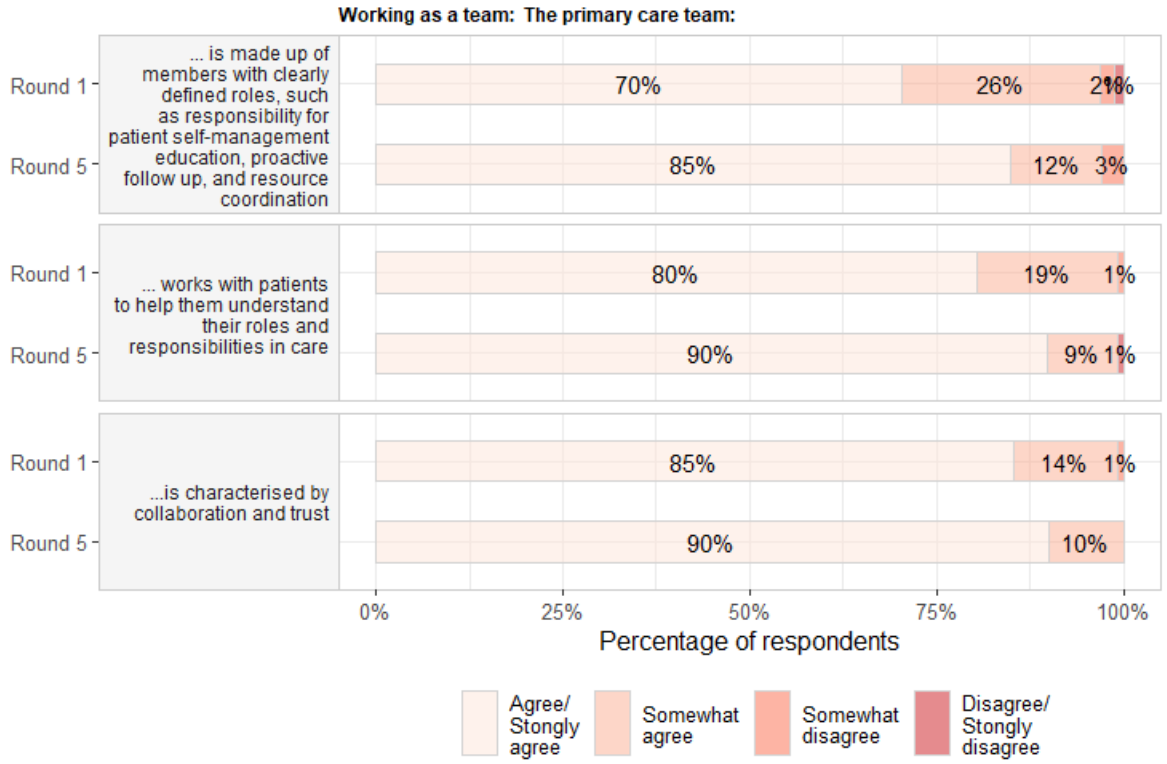
Team-based care

Team-based care is a fundamental building block of PCMH and was a core focus for many HCH practices throughout the trial.

In staff surveys conducted shortly after the start of the trial (round 1) and at the end of the trial (round 5), practice staff were asked questions about the primary care team (Figure 19). In the round 5 survey there was a higher level of agreement with statements reflecting good team functioning. Levels of agreement were high for all staff types, but tended to be slightly lower for nurses (*Source: Staff survey R1 Dec 2017–Jul 2018 and R5 Mar–May 2021.*

Table 25).

Figure 19: Staff assessment of team-based care



Source: Staff survey R1 Dec 2017–Jul 2018 and R5 Mar–May 2021.

Table 25: Staff assessment of team-based care, by staff type

	Percentage responding Agree or Somewhat agree				
	Total	GP	Nurse	Manager	Other
The primary care team...					
... is made up of members with clearly defined roles, such as responsibility for patient self-management education, proactive follow up, and resource coordination	172 (95%)	35 (97%)	38 (84%)	50 (100%)	49 (96%)
... is characterised by collaboration and trust	176 (97%)	36 (100%)	42 (93%)	50 (100%)	48 (96%)

	Percentage responding Agree or Somewhat agree				
	Total	GP	Nurse	Manager	Other
... works with patients to help them understand their roles and responsibilities in care	173 (96%)	35 (97%)	40 (91%)	50 (100%)	48 (96%)

Source: Staff survey R5 Mar–May 2021, question 5.

Qualitative data from the case studies provided further insights into how practices approached enhancing team care and how patients experienced these changes. Several practices reported focusing on team-based care and delegation from the GP to other team members early in the program. For many practices, it brought about positive results for both staff and patients and was considered a key change resulting from HCH. Team care was reinforced by routine team meetings or "huddles" and preparing patients for the team approach:

> "*...there's a weekly meeting where we talk about certain patients who are part of the Health Care Homes scheme...usually one doctor will present a patient to the other doctors and other members of the team and we can talk about the patient, and I might make contributions there to the diagnosis or management...I think the coordination of care with the nurses and the practice staff and all that, I think that's something that is better on the Health Care Homes.*" [Registrar, Practice 12, R2]

> "*...if [patients] ring now, if they want to talk to someone in the treatment room, it's whoever's on duty out in the treatment room. If they want to talk to admin, it's whoever is on admin. So, it's more of a team thing and they think that's really special.*" [Practice manager, Practice 4, R2]

The team approach helped some practices upskill their nurses to take on greater responsibilities with patients and others to engage allied health professionals as part of the team:

> "*I think a lot more trying to get the nurses involved. So much more of a team approach to it...I think the care plan side of it has helped get the nurses upskilled more...to have the nurses involved, and them doing it, it was a learning curve. And I think that's probably where the main changes happened. And I'm all for it, sharing the workload.*" [GP, Practice 10, R5]

> "*The nurses can check your work, can sort of tap your back and say, hey, doctor, you need to do this as well or you need to check the patient too, just probably a reminder to us as well and somebody's checking on us...it's a team effort. I really appreciate that one. That's the difference between the old paradigm and the new paradigm. Well, it's actually a very good program. I'm open to this kind of approach because it's very helpful for us GPs. It's just too much for us to do all these numbers every day, in and out every day without any help from the other members in the healthcare team.*" [GP, Practice 6, R5]

> "*...the dietician who comes to visit us was quite involved initially, so that was good. The way our practice is run, our practice nurses are involved in the care of*

our patients anyway. But that was good that they could check and probably get a couple more phone calls with the patient where they wouldn't have normally done it." [GP, Practice 18, R5]

GP lack of willingness to delegate care responsibilities was a barrier for some practices in enhancing team-based care and allowing other staff, especially nurses, to work at the top of their scope. While some attributed this to mindset, one GP highlighted the complexity and risk that GPs take on in a patient consult. They argued that implementing a model that supports task substitution and delegation from GPs to nurses and other members of the care team would, in many instances, not address patients' issues, which are often multifaceted and complex:

> "*So, in task substitution, it's very hard to replace a full consultation. And if you replace part of a consultation, it's still as costly to the level of care, because the nurse will often take 20 or 30 minutes. But the amount of time that 20 or 30-minute investment from an economic point, replaces a GP consult, might not be down to a whole consult and only part of a consult. So, it's very tricky to see the economics of it…the level of risk that the nurses were prepared to take on, when you actually came to it, we tried for a while, but invariably, when a patient comes [in]…they want scripts, they want pathology, they often talked about other issues other than just their chronic disease. So, whenever we tried it with the nurses, they still had to come to us outside of that chronic disease.*" [GP, Practice 7, R5]

Other barriers to team-based care practices identified included:

- limited staff engagement in HCH
- patients' expectations and willingness to participate in a team-based approach to care
- low program awareness
- use of practices' shared care software by external providers.

Despite challenges in establishing team-based care, some practices reported that, after a transition period for both staff and patients, they were able to develop a stronger team-based culture. Key enablers for team-based care included high level of participation and engagement amongst practice GPs and other staff members and involvement from both internal and external providers (including allied health professionals):

> "*[HCH] had a big impact on the team, obviously because when it first started, we didn't have all our doctors on board, assisting. And the reception staff were not familiar with what Health Care Homes was, and how the program worked, and what the program meant, and what patients could do, who were enrolled in that program. So, since we've had a re-evaluation of it since I started here last year…And with all the doctors on board now, too, it means that they've got a better understanding of why these patients are on this program, and what benefits it is to the doctor and the patient as well.*" [Practice Manager, Practice 23, R4]

> *"…the doctors are more trusting with us now under the Health Care Homes because they know that either way they're going to see them but it just depends on when."* [Nurse, Practice 6, R4]

Some practices that were able to enhance their team-based care commented on the impact of teamwork on their patients:

> *"I think that they feel that the team of people that's involved in their health care is better equipped. They're in more communication, they're talking more, and they feel that they are, again, better cared for by that team."* [Practice Manager, Practice 22, R4]

Interviews with patients also provided insights into their experience of team care. While patients often reported strong, long-standing relationships with their GPs and some had minimal interaction with nursing staff at the practice, many reported that practice nurses had a more active role in their care throughout the trial. Depending on the practice, this increased involvement often included additional time and access to practice nurses via in person visits, education sessions, "check-in" calls and through a designated HCH phone line. Many interviewees welcomed this increased nurse involvement and felt they were not wasting their doctors' time and were able to ask additional questions about their health and managing their condition(s). Some patients also developed strong relationships with their practice nurses:

> *"[It's] a great backup to the doctors…"* [Patient 4, Practice 4, R5]).

> *"But now we've met [nurse's name], the health care nurse, and gone through all that. Which will relieve [GP] of so much pressure, which I thought was brilliant."* [Patient 6, Practice 4, R2]

> *"I think that fact that I can contact my health care nurse now… And I spoke more openly with her than I ever have with my GP. Also, you know that you've got to talk there. And you know that if you can't get to your GP, she will do something about that. There's that reassurance, as a person living in their own home, that might have worries that they just need that reassurance."* [Patient 1, Practice 26, R5]

> *"Yes, [nurse] calls and said, we haven't caught up for three or four weeks, are you okay? …thinking I should need something checking or this or that, so she'll come down tomorrow and have a look, and if the doctor needs to look, we'll do whatever, and been very reassuring. She's a lovely person, and very good."* [Patient 7, Practice 24, R4]

> *"What I've noticed is, being on the program, with that nurse involvement, she will ring me up and she will say, we haven't seen you for a couple of months, how are you going? Come in, you need to come in and we can have a chat, or we'll do a phone interview. Especially the last 12 months, we've had the remote measures. But it makes me feel that I'm cared for as a person, it's not just I'm going in because I've got something wrong. It actually makes me think, well, they're actually aware of things."* [Patient 2, Practice 5, R5]

A few patients went further to say that having the nurse more involved in their care helped them manage their conditions more effectively, provided additional support and motivation and even improved their mental health:

> *"…the other young [nurse] is the good one. She's a good nurse. A very good one. I think I should see her more often. That ought to get me moving."* [Patient 1, Practice 23, R2]

> *"But [practice nurse] is very good. One of the last times I came out crying she got me, she calmed me down and she's very good. She's made a huge improvement in that sense, for me anyway, yes."* [Patient 1, Practice 3, R2]

> *"It's just improved things, especially with my depression issues and stuff. And I've had people to go and see, to talk to and face any more issues that I've had, without having to wait for a while. It's been there to support me, yes…"* [Patient 6, Practice 4, R5]

Case study

Anika* has severe asthma which has resulted in frequent hospitalisations. Her condition requires her to liaise with several specialists and has impacted her mental health. While she reported that her practice provided her outstanding care before she enrolled in HCH, she feels that her care management under HCH is more holistic and comprehensive. She has developed close relationships with the practice staff and feels more involved in her care. She described the practice as advocates in her care and takes comfort in knowing that she has support from the entire staff. She acknowledged herself as a "high-needs" patient and felt that extra support from the practice via HCH has kept her out of the hospital.

** Name changed to protect privacy.*

Some patients stated that they had access to a HCH coordinator. A few practices hired a coordinator or designated a practice nurse as the HCH coordinator to help actively manage their HCH patients and act as their main point of contact. In some instances, patients were not getting the benefit of the HCH nurse or coordinator because of turnover of staff. For example, one patient commented that their practice used to have a HCH coordinator who contacted them regularly, but the coordinator left the practice, and they no longer received "check-in" calls for the remainder of the trial. Another patient said the practice had quite a lot of nurse turnover, which made it difficult to establish or maintain a strong relationship with a practice nurse:

> *"Well, in the beginning we had a coordinator … And she was quite good. She'd ring every couple of months … she would always get me in … [HCH Coordinator1] and [Coordinator 2] mysteriously disappeared … in the beginning it was regular. But then the calls just … dried up."* [Patient 1, Practice 16, R4]

> *"The nurses change quite frequently, I don't know whether there would be some way of encouraging them to stay … it's a bit hard to build on a relationship with a nurse because each time you have to basically start afresh."* [Patient 3, Practice 6. R4]

Nevertheless, some patients were not comfortable with a transfer of aspects of their care to a nurse and, ultimately, preferred to see their GP:

> *"I don't think I've got problems that [the nurse] can fix…I think I'd always tend to go to [the GP] because she'll have the knowledge. I'm thinking possibly still with the GP because the nurse has limited knowledge. She's not a doctor."* [Patient 3, Practice 3, R2]

Some practices also had allied health professionals seeing patients within the clinic on a full or part-time basis. Patients reported positive experiences with these staff:

> *"…I'm trying to lose a bit of weight, which is going well…when I first went to* [the dietician], *I was 111 kilos, now I'm back to 103…so I went to see her last month. I went back to 105, and then she said, to prove yourself a bit better, one biscuit a day, and more veggies, which I'm doing. And lost another three kilos, so no, it's going well. So no, she's good…she's at the practice, yes. Only two, three days a week."* [Patient 2, Practice 1, R2]

> *"There was the podiatry stuff that I used with* [podiatrist] *from downstairs here. So, everyone's linked through here, directly."* [Patient 3, Practice 10, R2]

> *"We have podiatrists at the practice. Every 10 weeks we get a podiatrist down there, five a year. That's in our healthcare plan…They're already booked ahead for us. We have all our blood tests down there."* [Patient 1, Practice 16, R2]

Patients also acknowledged practice administrative staff as part of their care team, commenting on their proactivity and helpfulness:

> *"But the receptionists are very forward, you know, very proactive…if I contact them anytime to tell them I'm part of this program and I'll be given priority. I've not had the need to do so but I'm sure I could if I wanted to, I mean, it's a very friendly place, you know."* [Patient 2, Practice 5, R2]

> *"Where you walk into the* [practice] *and* [the receptionists are] *always, you know, oh, how can we help you? Or, well most of them now, they know who we are and you know, yes, so to make this really the ideal. It kind of makes you want to go to the doctor, you know, even though you don't really need to, yes. I mean you don't want to go, if possible, but if you have to go, then they make you feel welcome."* [Carer, Practice 4, R2]

> *"I'm getting what I class as excellent health care, given the complexity of the problems I've got. They all look after, no matter who it is, even the reception girls [sic], if I look a bit off, they'll ask me what's going on…"* [Patient 2, Practice 9, R5]

Enhanced access to care

In the interviews undertaken as part of the case studies, practices were asked about access to care. Practices reported that they improved access for HCH patients through offering telephone and (to a much lesser extent) video consultations with the nurse or GP, email correspondence, a direct telephone line for HCH patients to call, streamlined referral

processes, and increased nurse involvement in patient care. This was enabled by the bundled payment:

> *"One of our clinical changes is we now have a [video conferencing application] account. And in [region], it's really challenging for patients to see a doctor. There's a lot of high turnover…And so [it has] attracted a couple of patients from [suburb]…And so the ability…[of] being able to communicate over email, text message and [videoconferencing application] has been really helpful for them and for me to be able to do that side because I've got some level of funding attached to it. So that's probably our biggest change."* [GP, Practice 7, R4]

Case study

Sarah* has chronic lower back pain and asthma. While she only goes to the practice once or twice a year, she has had contact with the practice nurse who checks in on her and asks how she is managing her conditions. Her interactions with the practice nurse increased over the last 12 months through COVID-19, and she has built a relationship with the practice nurse. Sarah has appreciated having a single point of contact and feels she can speak more openly with the nurse than her GP. She feels reassured that if she has any worries or concerns, the practice nurse is only a phone call away.

** Name changed to protect privacy.*

The practices reported that these alternative access points and delivery modes reassured patients that they are there for them beyond their scheduled appointments, facilitated the practice to provide more personalised care and helped both practices and patients more effectively manage patients' care. Many practices also judged that they had enhanced patient monitoring, care management, and follow-up under the HCH model. Improvements often came in the form of improved monitoring, more frequent care plan reviews, pastoral care, and an overall increase in communication between the practice and their patients. This made practices feel their HCH patients were more closely monitored and would not, "*slip through the cracks*":

> *"We've got our spreadsheet we regularly contact them for phones calls in between their visits here with the care plans, care plan reviews."* [Coordinator, Practice 4, R4]

> *"Because I know the patients very well, I will be giving them frequent calls, especially when I know certain things are coming up. I keep my own little diary for my Health Care Homes patients knowing where you'd love to be able to do it for all patients. But with the Health Care Homes patients, I've got that ability to go, I know such and such is having surgery, which means that they make it onto my list to make sure I give them that welfare call."* [Nurse, Practice 12, R4]

> *"…there's a process that we've been working through called Ward Round, which sounds a bit ironic given we're not in a hospital. It's just been our way of trying to make sure that we're keeping tabs on the care of the people who are in the Health Care Homes program, those that aren't perhaps coming in as frequently as some of the others are. So it's just our way of making sure that no one's falling through the cracks in a sense. And we are checking in with them and seeing how*

they're going, and what goals they're working on at that time, and is there anything we can do to help them." [Nurse, Practice 9, R5]

Many practices felt the broader rollout of telehealth and eScripts during the pandemic negated many of the access benefits that HCH patients were getting over other patients:

> *"…with the event of coronavirus and telehealth becoming available, these services could now be provided over the phone. I could call the patient or the carer and have a discussion with them over the phone. I could actually get that done and be paid better under Medicare than I would be under the Health Care Homes arrangement. And so in the end there seemed to be no advantage…what additional support could I give them that I wasn't already giving them under the normal funding arrangement?"* [GP, Practice 15, R5]

However, some interviewees felt their HCH patients still had better management and support from their practices throughout COVID-19. Benefits of HCH extended to patient recalls, having a dedicated nurse, nurse check-ins, contact via email and phone, and priority with face-to-face or telephone appointments. These practices reported that this extra level of support often translated to stronger relationships and better communication with their HCH patients:

> *"…in my opinion, I have [a] better relationship with HCH patients."* [GP1, Practice 24, R5]

> *"We definitely have a very strong relationship with our Health Care Homes patients, and a lot of them know me very well. Often they'll ask specifically for me…with Health Care Homes, because obviously patients are managing chronic issues, we either hear via the telephone or see them a lot more often. So, they are regularly in, so I have a lot of friendly banter with a lot of the Health Care Homes patients. Yes, definitely on a more regular basis…when they are booking, first of all if they pop up and I realise that they're a Health Care Homes program patient, then I would ask what the appointment might be for. Whether they needed a referral or whether they specifically wanted to see [GP] or whether they were happy to be contacted by the nurse instead? That would be the main difference."* [Senior Receptionist, Practice 22, R5]

> *"And they've got a dedicated person to phone up if something goes wrong instead of just ringing the medical centre number, the same as 500 other patients each day…They could still ring and speak to the doctors and everything else like that, but they had a dedicated nurse assigned to every single Health Care Home patient. And that worked out very well during the lockdowns and at least they always had somebody contact."* [Practice Owner, Practice 6, R5]

While many practices thought about delivering group sessions for patients, they didn't think this was feasible due to allied health professionals not available to run them, lack of space, financial constraints and limited patient interest.

Box 17: Brief review of literature on the effects of PCMH on patient access

One of the key objectives of HCH was to improve patient access to primary care services. Several studies have evaluated the effectiveness of the PCMH model on access.

Aysola et al.[64] conducted a study in which research team members contacted primary care practices to arrange a new appointment, seeking to determine whether PCMH practices were more or less accessible to new patients than traditional practices, finding that the PCMH practices were more likely to offer an appointment as well as more likely to offer an appointment out of business hours.

Beal et al[65] examined whether patients from minority backgrounds were more able to access services under a PCMH model. They found that patients with a Latino background with access to a PCMH practice were more likely to experience high rates of preventive care and positive patient experience than a traditional practice, noting however that PCMH practices were less likely to be available in areas with majority Latino populations.

McGough et al[66] examined the factors that allow a primary care practice to offer enhanced patient access, reporting that simply expanding the number of doctors is not sufficient on its own. The most effective methods involved improved phone access for quick advice (thereby avoiding in-person appointments), patient access to the full electronic health record as a device for enhanced communication between the patient and practitioner, virtual care providing 24/7 access to the physician via phone or internet for a limited scope of situations, patient access to the full care team and team-based care allowing the physician to provide more efficient care.

Augustine et al.,[67] in a study of 75, 000 Veterans Health Administration chronic care patients examined the relationship between 13 potentially preventable hospitalisation types and five different forms of service type: routine care, care by phone during office hours, urgent care, after-hours care and care by phone after-hours, all care types associated with the PCMH model. The researchers found that those patients reporting greater access to after-hours care were less likely to be hospitalised, while those reporting poor access to routine care were more likely to be hospitalised. Interestingly the researchers reported that hospitalisation was more likely with increased access to phone-based care in business hours, noting that in the Veterans Health Administration population, this type of care is delivered via a nurse triage service.

Singh et al.[68] examined a move from a full fee-for-service payments system to an enhanced fee-for-service system in which the practice received higher payments for enrolled patients in an effort to increase patient enrolments with a PCMH. The authors report that the enhanced payment system resulted in an increased number of patients with a regular family doctor, but this led to a minimal decrease in emergency department attendances even though the literature suggests lower emergency department attendance with increased care continuity. In further examining this

---

[64] Aysola, J., Rhodes, K. V., & Polsky, D. (2015). Patient-centered medical homes and access to services for new primary care patients. *Medical care*, *53*(10), 857-862.

[65] Beal, A., Hernandez, S., & Doty, M. (2009). Latino access to the patient-centered medical home. *Journal of general internal medicine*, *24 Suppl 3*, 514-520.

[66] McGough, P. M., Norris, T. E., Scott, J. D., & Burner, T. G. (2017). Meeting the Demands of the Affordable Care Act: Improving Access to Primary Care. *Population health management*, *20*(2), 87-89.

[67] Augustine, M. R., Nelson, K. M., Fihn, S. D., & Wong, E. S. (2019). Patient-Reported Access in the Patient-Centered Medical Home and Avoidable Hospitalizations: an Observational Analysis of the Veterans Health Administration [Observational Study]. *Journal of general internal medicine*, *34*(8), 1546-1553.

[68] Singh, J., Dahrouge, S., & Green, M. E. (2019). The impact of the adoption of a patient rostering model on primary care access and continuity of care in urban family practices in Ontario, Canada. *BMC family practice*, *20*(1), 52.

association the researchers reported that under the new system there was a decline in patient-reported continuity and care coordination, concluding there is an important distinction between practice-level and provider-level continuity. The new payment system encouraged practice-level continuity, which in turn encouraged sharing of patients between the practitioners in the practice. This effectively reduced provider-level continuity when compared with the previous arrangements where it was more likely that the patient would wait until their regular doctor was available rather than see a different doctor in the practice.

Finally, Schuttner et al.[69] examined the association between perceived patient access and organisational factors in primary care clinics, finding that perceived greater access is associated with lower staff turnover and burnout, leadership supportive of the PCMH model and greater use of open access (a focus on enhanced continuity) and virtual care (telephone, SMS or video).

The studies of patient access suggest that under the PCMH model there is perceived improved access compared with traditional arrangements, but that the method of implementation plays an important role. After-hours arrangements, virtual care (video, SMS etc.) and access to the care team rather than necessarily the physician appear to be associated with improved access. Incentives at the practice-level rather than the individual practitioner may improve access but diminish care continuity.

New roles

To keep up with enrolment and ongoing management of HCH patients, some practices hired new staff and/ or established new roles responsible for HCH patients/ activities. New staff included nurses, medical practice assistants (MPAs), and administrative assistants. New roles were HCH coordinator/ nurse. These positions had responsibilities for:

- enrolling patients
- patient recall
- preparing care plans
- patient monitoring
- chronic disease management
- running patient groups
- liaising with specialists
- entering data
- tracking and handling finances.

Staff members elaborated on the contribution of new roles in HCH patient care delivery:

> "*...[The MPA] helps us out with other things. Like a lot of excisions and things that we don't need to actually to be there to assist the doctor. So, she does those kinds of jobs. And then it makes more room for us to, so we are doing well but I think...[MPA]'s only on that role, two days, three days a week, two days a week. So even if she was to come on more time as MPA, that would help us out more. But, she's still got to do reception. She's all over the place. She's at reception and here and she helps us. She's everywhere. She's a big, very important role.*" [Nurse, Practice 5, R4]

[69] Schuttner, L., Gunnink, E., Sylling, P., Taylor, L., Fihn, S. D., & Nelson, K. (2020). Components of the Patient-Centered Medical Home Associated with Perceived Access to Primary Care. *Journal of general internal medicine*, *35*(6), 1736-1742.

Though some practices with a larger proportion of HCH patients would have liked to hire additional staff for HCH they felt that it was still not financially viable to do so or they had issues with recruiting staff or turnover.

Enhanced use of data

Practices highlighted the importance and value of data in general practice, and many reported prioritising enhanced data collection and data quality since becoming a HCH. Some PHNs were working hard in this area and practices in their regions found this beneficial. Practices expressed the need for additional external emphasis and work on data quality and benchmarking for enhancing quality of care, establishing targets and more effectively measuring outcomes:

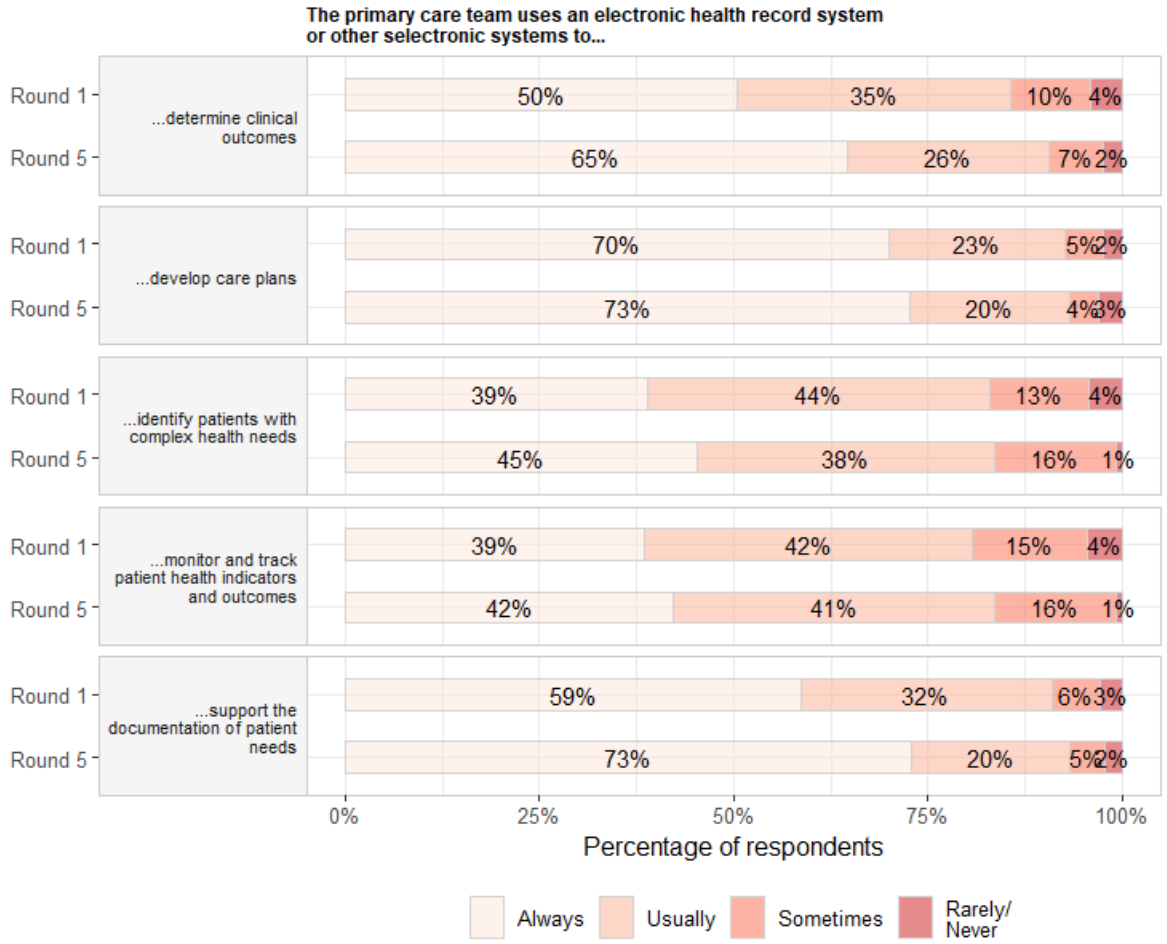
> *"…we've implemented a couple of new things. We've started [measuring patient activation] and the patient-reported outcomes measure which we didn't do before. So, we think that's been a bonus. We actually went to the [November 2019 HCH] forum and got a better tool… So, we're going to use that now instead."* [Practice Manager, Practice 24, R4]

> *"The PHN is doing a bit of that work with data and that's been really helpful for our quality improvement. That's not just helped us with Health Care Homes, it's helped us as a practice for our patient outcomes and those sort of things. So that's certainly, I think, beneficial to have that."* [Practice Manager, Practice 10, R4]

> *"…I think a key weakness of our system and I think it also relates to Health Care Home program is benchmarking…it's very difficult as the practice principal here to have much data about how do we compare to other practices with almost any metric, you might want to pick…if in theory being part of the Health Care Home program means that we're more proactive with helping people manage their chronic health issues and that maybe they end up with better targets for blood pressure or fewer relapses or whatever… And I think without that level of data tracking, it's hard for us to understand at an individual level, is this even beneficial in making a difference to anyone."* [GP, Practice 22, R4]

Staff surveys conducted shortly after the start of HCH (round 1) and at the end of the trial (round 5) included questions about the availability and use of clinical data within the practice (Figure 20). In round 5, there was a higher level of agreement with positive statements about the use of clinical data.

Figure 20: Staff assessment of primary care team's use of electronic health records and other electronic systems



Source: Staff survey R1 Dec 2017–Jul 2018 and R5 Mar–May 2021.

Evaluation benchmarking reports

To help practices identify areas for improvement in their data, such as the completeness and quality of data collected, and as a means of feeding back data received for the evaluation, the evaluators disseminated benchmark reports for active practices and for PHNs at six-monthly intervals. The reports were largely based on practice data extracts, with selected demographic and enrolment data from the HPOS extracts.

The practice reports compared data for HCH patients in the practice with HCH patients in practices of similar size and geographic remoteness, and HCH patients in all other HCH practices. Information presented included:

- recording of patient clinical assessments (for example, smoking status, height, weight)
- patient measurements (for example, blood pressure, cholesterol, HbA1c)
- recording on various patient health conditions.

Practices were asked about the benchmark reports in the surveys. One third rated the reports as moderately useful (Table 26). They commented qualitatively that they generally found the reports valuable, asking for them to be more frequent and automatically emailed to the practice for easier access (they were distributed to practices through the HCH evaluation online portal, which required a secure login for each practice). They expressed an interest in seeing more comparisons of patient outcomes, or proxies for patient outcomes like average HbA1c, and were also interested in seeing deeper comparisons with like practices through more detailed patient demographics. One practice suggested self-comparison or tracking of the practice's progress over time as a useful addition.

Table 26: Practice and PHN rating of benchmark reports provided during the trial

Rating	Number of practices (%)	Number of PHNs
Very useful	0 (0%)	2
Moderately useful	19 (34.5%)	4
Limited usefulness	9 (16.4%)	2
Not useful	3 (5.5%)	0
Did not receive[1]	9 (16.4%)	0
Can't say/don't know	15 (27.3%)	1
Total	**55 (100%)[2]**	**9[3]**

Notes: [1] Some practices did not receive a report as there were issues with their practice extracts (for example, not available or HCH patients not flagged). [2] 55 of the 120 practices participating responded to the survey. [3] 9 of the 10 PHNs participating in HCH responded to the survey.
Source: Practice and PHN survey R4 Nov 2019–Mar 2020.

PHNs also rated the benchmark reports in their survey. Six of the nine PHNs responding rated the reports as moderately useful to very useful (Table 26). Qualitatively they commented that they would like practice-level reports (PHNs were receiving aggregated reports across all their HCH practices), as:

> "*The reports provide interesting information, good talking points with practices. If possible would be nice to have access to practice reports so we can support practices to analyse the data.*" [PHN survey, PHN 10, R4].

They also thought that the reports could be more frequent, for example:

> "*Practices are accustomed to quarterly reporting, benchmarking reports would assist practices on a quarterly basis in line with practice PIP payments and quality improvement activities.*" [PHN survey, PHN 1, R3].

One PHN suggested that standardised codes for activities undertaken by practices may have provided greater insight into changes in chronic disease management across practices. Another requested the template for the reports to continue to provide them to their practices beyond the trial.

Practice self-assessment of HCH capabilities

Practices were provided with a tool – the Health Care Home Assessment (HCH-A) tool[70] – for assessing their capabilities as a HCH. HCH-A is based on the Patient Centred Medical Home Assessment (PCMH-A) tool[71] developed in the United States. It was initially adapted by the WentWest PHN in 2015 and was further refined for the HCH trial by AGPAL in 2017.

For the evaluation, HPA provided practices with an Excel version of the HCH-A tool to collect and collate responses from individual staff members.

HCH-A is made up of eight dimensions. Within each dimension, practices determined how they were performing on specific items. Overall, there are 36 items (questions) that are assessed on an ordinal scale of ranging from 1 to 12, where 1 represents the lowest "performance" and 12 the highest. The scale is broken into 4 sub-ranges (1–3, 4–6, 7–9, 10–12) and descriptors provided for each sub-range. The recommended approach for applying the tool is for practice staff to each do their assessments separately and their anonymous assessments are collated, and then they discuss the collated results as a group to reach a consensus. This was not always the approach taken by practices, and this should be considered when interpreting the results presented here. For the evaluation, practices were asked to undertake the self-assessment process in rounds 1 and 5, with the consensus values for the practice reported.

The overall results comparing the 60 practices that reported the HCH-A consensus score in rounds 1 and 5 are shown in Volume 3 Appendix 9. We assessed changes in the mean score for each item and dimension. The comparison of mean scores should be treated with caution due to the ordinal scale used. Across these practices the mean scores increased on each item and for each dimension. However, the increase was mostly below a value 1, and the increase statistically significant on only selected items. We also estimated the number of practices reporting an increase in the assessed scores. Across all dimensions and most items, the proportion of practice reporting an increase in the score was greater than 50%.

The dimensions on which the data suggests there was greatest improvement were "2 Patient enrolment", "3 Quality improvement strategy", and "6 Patient-centred interactions" (Table 27). A relatively high proportion of practices (60%) reported improvements on "5 Organised, evidence-based care", although the differences in mean scores were generally not significant for this dimension. Other areas in which there was a statistically significant improvement in mean scores included "31 Practice approach to linking patients to supportive community-based resources" and "34 Contacting the care team during regular business hours".

[70] MacColl Center for Health Care Innovation at Group Health Research Institute, Qualis Health, WentWest, & AGPAL. (2017). *Health Care Home Assessment*.

[71] MacColl Center for Health Care Innovation at Group Health Research Institute, & Qualis Health. (2014). *The Patient-Centred Medical Home Assessment Version 4.0*.

Table 27: Change in HCH-A assessment from round 1 to round 5

HCH-A dimension and item	Number of practices where assessed score:			Mean score		Estimate of change (95% CI)
	Decreased	Did not change	Increased	R1	R5	
2 Patient enrolment						
05 Patient linkage to nominated GP & care team	15 (25%)	14 (23%)	31 (52%)	7.76	8.57	0.81 (0.06 to 1.56)
06 Practice data availability	19 (32%)	9 (15%)	32 (53%)	7.76	8.58	0.83 (0.09 to 1.57)
07 Patient records availability for pre-visit planning & outreach	16 (27%)	10 (17%)	34 (57%)	8.17	8.79	0.62 (-0.1 to 1.35)
08 Availability of reports on care processes & outcomes of care	20 (33%)	11 (18%)	29 (48%)	7.14	7.63	0.49 (-0.3 to 1.27)
Average score	21 (35%)	4 (7%)	35 (58%)	7.71	8.39	0.69 (0.00 to 1.37)
3 Quality improvement strategy						
09 Conduct of quality improvement activities	21 (35%)	7 (12%)	32 (53%)	7.1	7.88	0.78 (0.01 to 1.55)
10 Availability of performance measures	19 (32%)	8 (13%)	33 (55%)	6.69	7.47	0.78 (0.00 to 1.56)
11 Care team and patient involvement in QI activities	16 (27%)	10 (17%)	34 (57%)	6.1	7.2	1.09 (0.25 to 1.93)
12 Clinical information systems that optimise use of information	16 (27%)	9 (15%)	35 (58%)	7.28	8.03	0.75 (-0.03 to 1.54)
Average score	19 (32%)	3 (5%)	38 (63%)	6.79	7.64	0.85 (0.11 to 1.59)
6 Patient-centred interactions						
21 Assessing & respecting patient & family values & preferences	13 (22%)	5 (8%)	42 (70%)	8.35	9.25	0.9 (0.09 to 1.72)
22 Involving patients in decision-making & care	13 (22%)	4 (7%)	43 (72%)	8.1	8.91	0.81 (0 to 1.63)
23 Assessment of patient comprehens. of verbal & written mater.	17 (28%)	7 (12%)	36 (60%)	7.32	8.03	0.71 (-0.11 to 1.53)
24 Self-management support	13 (22%)	7 (12%)	40 (67%)	7.28	8.27	0.99 (0.27 to 1.72)
25 Incorporation of the principles of patient-centred care	16 (27%)	5 (8%)	39 (65%)	7.24	8.32	1.08 (0.23 to 1.93)
26 Measurement of patient-centred interactions	20 (33%)	8 (13%)	32 (53%)	5.72	6.7	0.98 (0.03 to 1.94)
Average score	14 (23%)	1 (2%)	45 (75%)	7.33	8.25	0.91 (0.19 to 1.64)
7 Care coordination (selected item)						
31 Approach to linking patients to supportive community resources	13 (22%)	11 (18%)	36 (60%)	6.89	7.95	1.07 (0.38 to 1.75)
8 Enhanced access (selected item)						
34 Contacting the care team during regular business hours	12 (20%)	11 (18%)	37 (62%)	8.48	9.26	0.78 (0.08 to 1.48)

Source: Practice survey R1 Dec 2017–Jul 2018 and R5 Mar–May 2021.

Practice assessment of improvements in processes and outcomes

In the practice surveys, practices were asked what the impact of HCH was on coordination of care, quality of care and patient outcomes compared with what would occur under usual care for similar patients (Table 28). In addition to the overall responses in round 5, Table 28 also shows the responses of practices that enrolled less than 50 patients compared with those that enrolled 50 or more patients, together with the results of a statistical test to assess whether the differences between the two groups of practices were significant.

Table 28: Practice assessment of the overall impact of HCH (compared with usual care) on coordination of care, patient outcomes and quality of care

Outcome dimension / Practice subgroup	Practice assessment of improvement compared with usual care					chi-square
	Significant	Moderate	Small	None	Worse	
Impact on coordination of care						
All R5 practices	16 (23%)	21 (30%)	21 (30%)	12 (17%)	1 (1%)	6.375 (p=0.095)
Practice enrolled <50 patients	6 (17%)	8 (22%)	12 (33%)	10 (28%)		
Practice enrolled 50+ patients	10 (29%)	13 (37%)	9 (26%)	2 (6%)	1 (3%)	
Impact on quality of care						
All R5 practices	15 (23%)	17 (26%)	18 (27%)	16 (24%)		4.668 (p=0.198)
Practice enrolled <50 patients	5 (15%)	7 (21%)	10 (30%)	11 (33%)		
Practice enrolled 50+ patients	10 (30%)	10 (30%)	8 (24%)	5 (15%)		
Impact on patient outcomes						
All R5 practices	9 (14%)	19 (30%)	23 (37%)	12 (19%)		4.081 (p=0.253)
Practice enrolled <50 patients	3 (9%)	9 (28%)	11 (34%)	9 (28%)		
Practice enrolled 50+ patients	6 (19%)	10 (32%)	12 (39%)	3 (10%)		
Staff experience & satisfaction						
All R5 practices	9 (14%)	18 (27%)	19 (29%)	18 (27%)	2 (3%)	17.297 (p=0.001)
Practice enrolled <50 patients	1 (3%)	6 (18%)	9 (27%)	16 (48%)	1 (3%)	
Practice enrolled 50+ patients	8 (24%)	12 (36%)	10 (30%)	2 (6%)	1 (3%)	

Source: Practice survey R5, Mar–May 2021, questions 16–18.

Coordination of care

Most practices (83%) reported an improvement in coordination of care, with more than half (53%) reporting a moderate or significant improvement (Table 28). There is no statistical evidence that practices with higher enrolments reported greater levels of improvements in coordination of care.

Practices were also asked about the main ways in which coordination of care was improved for HCH patients compared with similar patients receiving usual care and features of the model that facilitated the improvement.

Practices reported that team care as part of HCH enabled care coordination within their practices, specifically, regular team meetings or huddles and case conferencing. They also reported that collaboration with external care providers was improved as part of HCH, although respondents had mixed experiences with the shared care platforms.

A few practices noted care coordination was improved because the HCH nurse had access to comprehensive, up-to-date information from a patient's care plan. However, some reported that software integration was problematic, coupled with the experience of external specialists' and allied health providers' resistance to or inability to use shared care platforms.

Practices also noted that the focus of HCH on care planning improved their care planning processes. Teamwork meant that nurses could take more time with care plans and ask for input from patients, resulting in the care plans better reflecting patients' goals.

Quality of care

More than three quarters of practices (76%) reported an improvement in quality of care, with almost half (49%) reporting a moderate or significant improvement (Table 28). There is no statistical evidence that practices with higher enrolments reported greater levels of improvements in quality of care.

Practices were also asked about the main ways in which quality of care was improved for HCH patients and features of the model that facilitated improved quality of care. Practices identified access as a key way in which quality of care was improved for HCH patients. Practices mentioned that patients were able to have more timely access to clinicians at the practice overall, and specifically to GPs, nurses and allied health, and better access to scripts and referrals. They attributed this to teamwork (especially GPs being able to delegate to other team members, thus being free to see patients when needed), dedicated roles (for example, HCH nurse) and the ability to offer alternative modes of delivery under the bundled payment.

Another key way in which quality of care was improved for patients that practices identified was through improved practice processes. A commonly mentioned example was scheduling regular reviews/recalls where patients would get the necessary tests and preventative care (such as immunisations). Another example was communication between practice clinicians, and between practice clinicians and patients, both in-person and through care plans. Some practices attributed the ability to improve these processes to the flexibility provided by the bundled payment.

In addition, some practices implemented new services to help enhance their chronic disease management, including home visits, group sessions, remote monitoring and point-of-care testing:

> "*So, we've had a lot of our Health Care Home patients that have also got obesity and diabetes issues. So, from that we've actually brought in a diabetes educator, who sees them free of charge. There's no cost to the patient, and we also order them in the free glucometers, so that they can have better understanding of how to manage their diabetes and the devices that they need to be using.*" [Practice Manager, Practice 23, R4]

> "*...I suppose...[HCH] has the potential for people to, you know, so we can do things a little bit different. You can do some stuff on the phone if you need, you know, scripts and repeat referrals and things like that. Like that was another thing that's one of the benefits is to try and do some group stuff.*" [GP, Practice 18, R4]

Patient outcomes

In the practice surveys, practices were asked what the impact of HCH was on outcomes for patients compared with what would occur under usual care for similar patients (Table 28). Most (81%) reported an improvement, with two thirds (67%) reporting a moderate or significant improvement. There is no statistical evidence that practices with higher enrolments reported greater levels of improvements in patient outcomes.

Practices were also asked about the main ways in which outcomes were improved for HCH patients compared with similar patients receiving usual care, and features of the model that facilitated the improvement.

Practices reported that chronic disease management, which included patient outreach and recall systems, played a significant part in improving patient compliance with medications and disease-specific cycles of care documented in their care plans. Practices perceived that patient had improved blood pressure and HbA1c, although this was not substantiated by the analysis of the practice data (see Chapter 15 Changes to chronic disease management). They also perceived that HCH patients had avoided hospitalisation by having a model of care that allowed them to call and discuss issues with the HCH nurse. This was also not substantiated by analysis of the linked data (see Chapter 18 Patient outcomes: Linked data). It is likely that practice staff recalled exceptional cases when answering this question rather than the norm across patients.

While practices reported a perceived improvement in patient outcomes overall, there were concerns that aspects of the model may have led to poorer outcomes for patients. Practices identified enrolling patients with a specific GP limited options for patients in certain circumstances. For example, limited availability of a GP due to planned leave or other reasons meant that patients had to wait longer to see the GP rather than booking in with another GP at the practice. Practices also raised negative impacts of telehealth as a form of care delivery. While respondents commented on the patient and practice convenience of telehealth, some had concerns about the potential for missed diagnoses resulting from increased use of telehealth. Lastly, practices also suggested that the increase in paper and

administrative work associated with HCH, including the shared care platforms, may have drawn time away from patient care and affected patient outcomes.

The interviews undertaken as part of the case studies also asked practices about outcomes for patients. A few practices stated they were able to see measurable improvements in some of their HCH patients' health. They identified these improvements through their data and re-stratification of their patients:

> "*We have one of our doctors do some data extraction and get some graphs up for us…We picked just five random patients…and we just did some charting for their HbA1c and their cholesterol from 2017 to current…but from that, it shows us that all five patients in both categories all improved. So from that perspective, yes, it's of benefit to the patients because it's all about their health, so yes, their health is a lot better. It's showing that it's working. There's constant contact and follow-up…It's just encouragement to take care of themselves. Now, we were just talking about it on a percentage basis as well. I wanted to know percentages of how things were running. Out of the 97 [HCH] patients, 94 had pathology, their vaccinations were at 73%, care plans were at 85%, HMRs were as high as I thought they should've been. We're at about nearly 30%. I think, compared to patients that are not in the program, there's definitely more going on with these patients in regards to the care that they're provided with because there's this constant encouragement to stay in touch and stay on top of things.*" [GP, Practice 3, R5]

> "*I think we've had some patients that have gone down tiers, so I think that's a bonus, because that's obviously an improvement in their general care.*" [Practice Manager, Practice 24, R5]

However, many practices felt it was still too early to tell whether patients' health had improved because of the changes they made as a HCH, and a few felt the changes made little to no difference. Some were hoping to begin tracking and monitoring patient outcomes to see if there were changes for their HCH patients and if they could improve any components of the model or their care delivery:

> "*In terms of the outcomes…I think we're still in early territory here, I can't see that it's changed a great deal in just the last 18 months, especially the 18 months we've had.*" [GP, Practice 9, R5]

> "*We're at this point, what's the next thing that we can focus on to try and improve. Get better outcomes. So, it's that in general. But, certainly, the Health Care Homes clients are the ones that we tend to focus on a little bit more because we can identify those and we can track them a little better through the system.*" [Practice Manager, Practice 10, R4]

> "*…my reflection is that we need more time and I think we need more input and orientation to the patient and probably more enrolments as well.*" [GP, Practice 6, R5]

> *"…it's made not a scrap of difference to patients, and nothing different to doctors. Only that they don't bill on the spot and then make mistakes with the billing sometimes, and I have to fix them up."* [Practice Manager, Practice 11, R5]

Others cited more intangible patient benefits that arose due to regular contact with patients and greater involvement of patients in their care:

> *"I think having your regular evaluations with a patient, I think has made a difference…I think that when the nurse is doing those, there's more time for them to actually talk to the patient, so I think they get more detail from the patient, especially if there's problems or issues. I think having that regular review has been really, really beneficial, and that's something, I think, in some way, shape or form, that if it doesn't keep going, that we would keep doing. I think we've honed our care planning more to tie in with that."* [Practice Manager, Practice 22, R5]

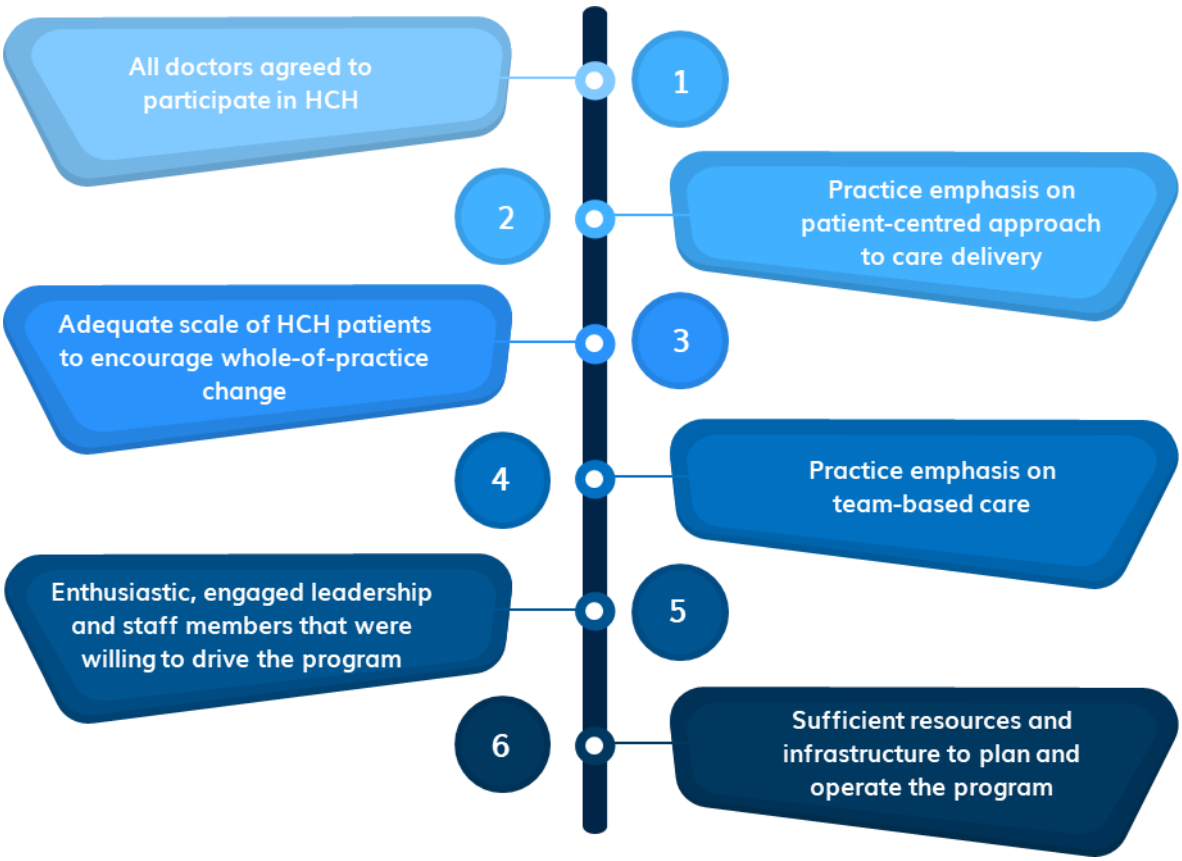
> *"Heaps of patients have gone through [the group exercise physiology class] and found it really beneficial. And I guess the thing I usually like to promote with the groups is teach them stuff that they can do in the group, but also self-management strategies too. So, there's been lots of patients that have come for a short period of time…then that's been enough for them to continue their exercise on their own. Other patients have been coming a lot longer than that, because they enjoy it. And they still do it at home, but they enjoy it."* [Exercise Physiologist, Practice 25, R5]

> *"…if you polled our patients, I'm sure they would say so, that they liked it. They liked particularly the relationship they developed with one or two people. Some of them particularly liked the feeling that they were more involved in what was going on. And they liked the regularity, even if it was to say, look, there's nothing particularly new or whatever. And the ones that came out of hospital poorly organised, which is par for the course, they really liked the fact that the nursing staff could ring and get a discharge letter and lists of drugs and organise things and visit them at home and so on. So that was really helpful to them."* [GP, Practice 4, R5]

Key enablers

When asked about what factors that made it easier to implement the HCH model, practices mentioned leadership and staff participation, adequate enrolments, adequate resources and a focus on team-based and patient-centred care (Figure 21).

Figure 21: Enablers of HCH program implementation reported by practices



Source: Case study interviews, R2 Sept–Oct 2018, R4 Nov 2019–Mar 2020, R5 Mar–May 2021.

Leadership was particularly important according to practices and PHNs. In most practices there were individuals who were strong believers in the model and drove change within their practice. They were often the individuals that applied for the practice to join the trial. Though some leaders were practice owners or senior GPs, practice managers and nurses often took on this role.

One thing that became evident throughout the trial was that more than one leader was needed:

> "*You… have to have a group of people that want to make it happen. It's not a half-hearted exercise.*" [Practice Manager, R4, Practice 4]

Having a team to drive change became more important as the trial progressed as progress stopped altogether in some practices when the person that left was the one key person driving the initiative.

Key challenges

Practices frequently mentioned staff turnover and workforce shortages, administrative burden, patients' understanding and expectations of HCH and scale of enrolments as key challenges throughout the trial. These are described below.

Staff turnover and workforce shortages

Practices discussed difficulties with key staff leaving the practice or retiring. These included HCH coordinators, nurses or GPs who were often drivers of the program. These staff leaving often delayed implementation, decreased motivation and enthusiasm for the initiative amongst other staff, limited the time and resources that staff members could devote to their HCH patients or reduced some of the additional benefits and services that HCH patients were receiving:

> "*Timewise, for a while I was the only nurse here and I'm only part time as well, so there wasn't that time for check-in calls, out of the blue to touch base with the patients as well.*" [Nurse, Practice 22, R5]

> "*One of the issues of course is that the practice manager who was…in on the ground with setting this up…moved on…And we've got a new practice manager. So she wasn't as up to speed with the way Health Care Homes works.*" [GP, Practice 4, R5]

> "*So, when we first embarked on the journey, I had a nurse manager…and that's where I thought, this would be great because she's across the doctors. She knows the conditions, she's a little bit more experienced. She'd help with sitting in on their care plans, so that was great…but then [Nurse Manager]…resigned and moved onto a new role. With her moving, the two nurses that I have here are fairly new to general practice, so putting them into a program such as this, which is a lot more involvement with the amount of patients that we have was just not worth it for me…So, that I think was a barrier for us.*" [Practice Manager, Practice 15, R4]

These reflections were especially prevalent during the last round of interviews. Staff members described how they grappled with staff turnover throughout the pandemic which often made it difficult for them to continue providing the same level of care to their HCH patients, re-train and engage new or existing staff members who were not involved in the program and complete the administrative processes required to operate the initiative within their practices:

> "*…because we have a lot more of our new staff, a lot of them probably aren't that familiar with Health Care Homes. To the extent that they've been told what they need to do if somebody calls, but maybe not exactly what the program's about, why we have it… That's definitely been one of the challenges, a lot of new staff means a lot of information doesn't change hands. And those things can again fall by the wayside.*" [Practice Manager, Practice 22, R5]

> *"When the Health Care Home started, we educated all the receptionists and things like that but with all the new staff, I don't even know whether they even know what it is to be honest."* [Nurse, Practice 1, R5]

> *"…I joined [Practice 16] in end of August last year and I must be honest I haven't had much to do with the HCH at all. I've not had any training as such… So, a handover would have been a nice… But like I said the nurse wasn't here so that wasn't going to happen and the GPs are fully booked."* [Nurse, Practice 16, R5]

Administrative burden

Practices often mentioned the high administrative load associated with the HCH trial. This included enrolment of patients (the two-staged RST process, registering patients in HPOS, and flagging them as enrolled in clinical management systems), entering data into a separate system to create care plans, regular review of patients' tier status, managing the bundled payment and other processes associated with the trial:

> *"Health Care Homes, the administrative burden just got too hard. There was multiple log ins, multiple passwords. We had to do lots of back-end accounting processes. I couldn't get a receptionist $23 an hour doing it. It was quite high-level work. I had to pay my managers $40 an hour plus, to go on do these constant analysis, constant manual processes. Whereas with Medicare, our system would do a 23, automatically gets batched, patient automatically pays, automatic reports and payments. So, our systems for the individual doctor or receptionist doing that one consult, plus then overall payment, were a nightmare."* [GP, Practice 7, R5]

> *"It's also about time and teaching some of the older doctors and older nurses to incorporate two programs together and it's time consuming and trying to import data from… I know Medical Director exports data into [shared care planning software], but then you've got to import it back into [practice clinical management system] so it is senseless in one respect."* [Nurse, Practice 4, R5]

> *"I don't like it. I find it a real pain. I just want to have one software system that I can use. I'm so busy, you know what I mean, with patients coming to me left, right and centre, fully booked days, that any extra tiers and any extra things to do was a bit of a headache for me."* [GP, Practice 1, R5]

More streamlined processes, particularly streamlining software applications, was a common recommendation.

Patients' understanding and expectations of the HCH model

Practices reported challenges with patients' understanding and expectations of the model starting with enrolment and continuing throughout the trial.

During enrolment, practices reported challenges explaining the HCH model and benefits to patients. The name of the program commonly led patients to interpret it as meaning home visits from the practice or nursing home care:

> *"Do you mean I go to a home? I think it was because of the name. That's still an issue for us."* [Nurse, Practice 24, R4]

> *"So, when I first started enrolling them in the program, things were a little bit more unknown at that time. And as a result of that, we were seeing that some patients, they just weren't coming in. And it was like, why aren't they coming in?...as it turned out, they just thought that because they're on that program, that someone would come to their home every day, and that's what that meant. So, they got a bit confused. So, then we had to re-explain it..."* [Practice Manager, Practice 23, R4]

Patients particularly struggled to understand the extent to which they would have access to their GP once they enrolled in HCH, and some thought that enrolling in HCH meant that they had access to the GP all the time:

> *"The downside is the misconception of having...access to the GP all the time. I'm not sure if it's just in our practice or it may be different with practices if they're not too busy, but some of the patients complain that because they're in Health Care Homes they thought that whenever they needed to see their regular GP they'll be able to see their GP, but it's not the case... I'm happy for it to continue but I think what I mentioned a while ago in terms of, I think, better understanding of the patient to what expect, for their expectations to be a little bit more realistic."* [GP 1, Practice 24, R5]

Some patients withdrew from the trial when they discovered that they would not be seeing their GP each time they came to the practice. Some who had concerns but persevered found benefits in the team-based approach (see Chapter 16 Patient and carer experiences, p. 193).

Similarly, some patients thought that as a HCH patient they would have access to the practice more readily and called or booked appointments frequently:

> *"You have to be a little bit careful. We do have a handful of people that they step into the realm of dependent personality and you don't want them to use the Health Care Homes thing as an excuse to call every ten minutes. We have had experience of that, and we've managed to sort that out."* [GP, Practice 10, R4]

> *"...we have had one in particular patient, that just comes to my mind, she's on the Health Care Homes but she's in here every second day...And the fact that they have someone to go to, yes, it can be taken a little bit too far. We've got the point with this particular person that I've... If it gets much worse, I'll have to have a chat with her and say look, this isn't quite how the program works. We're almost becoming her social director. So, you've got people that just self-manage, they're great. But then, other people are very needy. And I'm not saying that in a bad way, they're isolated, they've got no support. So, they really take advantage of the fact that they have specialised contacts in the practice. So, that is just something we have to manage ourselves."* [Practice Manager, Practice 4, R4]

While practices could have done more to better communicate the program to patients, there was also potentially room for community awareness of the program and the model:

> "*...I think there would be lack of knowledge and understanding for patients and the community about the Health Care Homes. Due to only a small number of clinics being a part of it, most people haven't even heard of it or understand what it means and I think that then dilutes the effectiveness of it.*" [GP, Practice 22, R5]

The anecdotes provided by the practices also reinforce a balance between providing extra support to patients and working on enhancing their self-management.

Scale of enrolment

The number of patients that practices enrolled influenced how much change they could make and the level of benefit that they and their patients could derive from the trial, such as the ability to create additional roles and/or recruit new staff or implement initiatives like group sessions. In turn, the number of enrolments was influenced by GP participation in the trial.

Where practices had a small number of enrolments, they ran two different systems for their chronic disease patients, which created stress within the practice:

> "*...the practice managers have got to negotiate two different types of business models, two different types of service models, keep everybody happy, try and sort out how they're going to use their nurses in an effective way...for some of my practice managers, it's been extremely stressful.*" [PHN 7, interview, R1]

Where practices had few enrolments, it was hard to justify the investment of time and other resources to make any significant changes:

> "*It's that critical mass to making a practice, it becomes their way of working rather than a model that's running on the side of the desk ultimately.*" [PHN 7, Interview, R5]

A few practices suggested 100 patients as the minimum number at which they could start to make changes, mainly because they could fund additional staff and services with this volume of patients. Others suggested that practices should have been required to enrol a minimum number of patients and have all their GPs (or a large proportion) participate in HCH:

> "*Those practices that have bit piece number of patients, they can't change that model of care. They just don't have the volume to justify changing it...I knew, once you get to the tipping point, or mass of patients, you don't have to worry about the funding.*" [Practice Owner, Practice 9, R4]

> "*We were a slice of doctors and a slice of nursing staff and a very small slice of patients, just as part of the test. And part of the feedback that I've given the whole time, is that it doesn't work that way. It needs to be a whole practice change, rather than a slice of a practice.*" [GP Practice 12, R5]

Practices with a high number of enrolments felt that the program was financially advantageous to their practice. Having more patients enrolled allowed implementation costs to be spread, and the swings and roundabouts of a bundled payment to be better managed. It also meant specific processes for HCH patients were better absorbed into the everyday operations of the practice.

Program sustainability

In the final practice survey, practices were asked whether they would participate in a program like HCH in the future (Table 29). Most practices said that they would continue (42%), and almost as many said that they might continue (39%). The proportion wishing to continue was greater in practices enrolling 50 or more patients.

Table 29: Whether the practice wishes to continue to participate in a program like HCH

Practice subgroup	Yes	Maybe	No
Does the practice wish to continue to participate in a program like HCH:			
All R5 practices	30 (42%)	28 (39%)	14 (19%)
Practice enrolled <50 patients	9 (25%)	16 (44%)	11 (31%)
Practice enrolled 50+ patients	21 (58%)	12 (33%)	3 (8%)

Source: Practice survey R5, Mar–May 2021, question 33.

Practices were also asked which elements they would continue beyond the trial and which ones they would stop. Telehealth, dedicated chronic disease management roles, team-based care and patient recalls were the top four elements identified (Table 30). Use of shared care planning software was identified as one of the elements they would stop, and they also mentioned reducing the role of practice nurses due to lack of reimbursement under fee-for-service.

Table 30: HCH elements that practices would continue beyond the trial and elements that they will stop

Element	Practices identifying this element: n (%)[1]
Continue	
Telehealth	19 (26.0%)
Dedicated care coordination/ chronic disease staff	14 (19.2%)
Team-based care, including team meetings/ huddles	11 (15.0%)
Recalls	10 (13.7%)
No appointment prescriptions	6 (8.2%)
Quality improvement, including data cleansing	6 (8.2%)
Nurse led care	5 (6.8%)
Expanded scope of practice for staff	5 (6.8%)
Care plans and care plan review	5 (6.8%)
Collaboration with other providers	3 (4.1%)
SMS and email contact	3 (4.1%)
Maintain HCH software, including shared care	3 (4.1%)
Training medical assistants	2 (2.7%)
Patient lifestyle groups / education	1 (1.4%)
Increased recording of health data (incl. alcohol/tobacco use) screening	1 (1.4%)
Stop	
Use of shared care platform	4 (5.5%)
Reduce the role of practice nurse (due to lack of reimbursement for many HCH activities)	4 (5.5%)
No appointment prescriptions	1 (1.4%)

Notes: [1] Practices could identify more than one element. Number of practices is 73.
Source: Practice survey R5, Mar–May 2021, question 14.

Practices interviewed were also asked whether they would continue any elements of the HCH model beyond the trial. In addition to the elements identified in Table 30, interviewed practices also mentioned measuring patient activation. A few practices also expanded on increased nurse involvement, which they were particularly interested in continuing, as it had upskilled their nursing staff:

> "*It's subtle. I think one of the virtues of the Health Care Home model is that it indirectly empowers our nurses more regarding assessment, advice and arranging. I think that that's a skill that they can continue whether or not it's a Health Care Homes patient.*" [GP, Practice 22, R5]

> "*One of the things I think has been really helpful for us is the multi-skilling that our nursing staff have managed to get…with Health Care Homes it's almost like you're upskilling them and you're giving them back that autonomy that they're really trained for in terms of managing, helping patients to manage clinic problems on a day to day basis, and they're looking for extra input from the doctors if they need to. But that brings with it a sense of satisfaction with their job, and I think I've certainly noticed that with our staff. I think that's been a big additional benefit.*" [GP, Practice 4, R5]

Practice suggestions for HCH

When asked whether HCH should continue, practices' responses ranged from discontinuing the program ("*I'd scrap it.*" [GP, Practice 15, R5]) to advocating for an extension or wider rollout ("*I'd make it broader, so there [are] more practices.*" [GP, Practice 10, R5]). While practices believed in the philosophy of HCH, many recommended further enhancements they thought would make it easier to operate the model within their practices or features they felt were necessary for successful implementation of the program:

- engagement of most or all GPs
- a high level of staff buy-in and nurse involvement
- higher number of enrolments
- strong leadership
- additional program guidance around integral features of the program (that is, bundled payment)
- reduction of the administrative burden
- more education for external health providers, patients and the wider community.

11

Shared care planning tools

Box 18: Chapter summary

Using shared care planning software was a requirement for practices to participate in the HCH trial. More practices had negative than positive reflections of their experiences with the shared care planning software. Implementation issues, poor fitness-for-purpose and the complicated nature of the tools accounted for most of the negative experiences. Improved team communication (internal and external) was the most commonly reported positive experience.

Many practices experienced problems with installing shared care software. Beyond installation they described ongoing challenges with usability that persisted throughout the trial. They described the tools as "clunky" and "cumbersome" and often commented that the functionality was far below that of their existing clinical management systems. Problems reported were: lack of integration with their clinical management systems and therefore manual re-entry of patient information; hard to navigate templates for less common chronic conditions; inability to customise; and inability to support key patient activities, such as monitoring physiological measures or tracking patient goals. Overall, stakeholders felt that the software available on the market was not mature enough for implementation.

While practices supported the idea of tools for communicating patient information between providers, a barrier to achieving this included the wide range of software tools used within a region and therefore lack of familiarity amongst providers of the various systems used. Lack of awareness of HCH and the small scale of patients and GPs participating were also identified as barriers to using shared care software by external providers.

Practices reported that their processes for creating care plans were largely the same as before they implemented shared care planning software. They also reported still supplying patients with a paper-based copy of their care plan even when a patient portal was available to access the plan. They reported that there were very few patients who were keen on accessing their care plan through a portal or otherwise.

Suggestions for improving shared care planning tools included training external health care providers on how to access the plans and better integrating the software with practice clinical management systems.

Over the course of the trial, practices increasingly rated My Health Record as useful for sharing information about HCH patients with external providers, and close to half reported moderate or significant increased use of the tool since the beginning of the trial.

The HCH trial highlighted many of the challenges in providing effective platforms for undertaking shared care planning, and in Chapter 26 (p. 341), future steps to address these challenges are outlined.

Shared care planning was a key design feature of HCH, to increase the involvement of patients in their own care and improve the coordination of services within the practice and between the practice and patients' other health care providers.

The agreements with practices to participate in HCH required they implement shared care planning software. Practices were given until 30 November 2018 to implement suitable software (about a year after the trial started). The extra time was due to feedback that the Department received that practices didn't have enough information to select a tool meeting the minimum requirements. Also, some coordination would be required across each region to ensure that providers outside of HCH would be able to access patients' plans and potentially contribute to them. The Department was careful to state that "*the time frame only applies to the use of compliant software – all enrolled patients must still have a shared care plan developed following their enrolment, which is shared with all members of the patient's care team*".[72]

The Department outlined the minimum requirements for shared care planning software.[73] PHNs also assessed tools. Some selected a single tool to promote to their practices while others presented options.

How practices selected a shared care planning tool

Many practices reported using their clinical management systems as their main care planning tools before joining HCH. They would communicate with external providers via fax, phone, paper, and/or secure messaging.

For the HCH trial, practices opted for specific tools due to cost, experience with a platform in a past initiative they were involved with and what others in the region were using. In some instances, the PHN purchased licences for practices. One vendor offered the use of its shared care planning tool at no cost for the trial. This influenced many practices and regions to take up this software. Some selected a platform outside of the list developed by the Department of Health. A few practices tried one or multiple tools throughout the trial before settling on one. Some practices didn't implement a tool at all during the trial. This was due to poor functionality of available tools, concerns about the cost of the shared care planning tools after the trial, increased administrative burden and duplication of work from using multiple platforms and time and effort to engage with external health professionals using a tool compared with traditional means.

Table 31 shows the tools that practices reported they were using in the final survey.

[72] Australian Government Department of Health. (2017b). *Minimum requirements of shared care plans* http://www.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-cp/$File/Minimum%20requirements%20shared%20care%20plans_December.pdf
[73] Ibid.

Table 31: Shared care planning software used by practices

Tool	Total
cdmNet Coordinated Care Platform (Precedence Health Care)	56
LinkedEHR	9
Care Monitor	7
Other	12
No response	5

Source: Practice survey R5, Mar–May 2021, question 1.

Practices' reflections on how shared care planning worked for them were both positive and negative (Table 32). More practices had negative than positive reflections. Software issues, the need for better mechanisms to monitor patients and complicated nature of the tools accounted for most of the negative reflections. Improved team care communication, internal and external, was the most commonly reported positive reflection. The responses in the previous survey round (4) were almost identical.

Table 32: Practices' reflections on how shared care planning worked for them

Reflection	No. of times this reflection was mentioned (% of practices providing this reflection)[1]
Positive	
Improved team care communication internal and external	15 (20.5%)
Improved patient engagement	5 (6.8%)
Improved patient access	5 (6.8%)
Improved patient to practice communication	3 (4.1%)
Enhanced chronic disease management	3 (4.1%)
Negative	
Not worked/ software issues	11 (15.1%)
Need more effective ways to monitor patients	11 (15.1%)
Complicated/ time consuming/ duplication of work	11 (15.1%)
Other health providers/allied health don't have access/ don't use	8 (11.0%)
Most patients are not accessing their care plans	4 (5.5%)
Issues with training/limited education	2 (2.7%)
Too expensive	1 (1.4%)
Patients over-reliant and overuse tools as form of communication	1 (1.4%)
Other	
No change	8 (11.0%)
Don't use it	6 (8.2%)

Notes: [1] Practices could provide more than one reflection. Number of practices is 73.
Source: Practice survey R5, Mar–May 2021, question 2.

Implementing tools within practices

Practices reported "teething issues" with implementing shared care planning software. At the start, these were predominantly about software installation. Though installation issues were ultimately resolved, some practices had strong opinions about the software ["*Yes, I hated it. It's horrible.*" [GP, Practice 1, R5]).

Beyond installation they described ongoing challenges with usability that persisted throughout the trial. They described the tools as "clunky" and "cumbersome" and thought that the functionality was often far below that of their existing clinical management systems:

> "*On average, 20 to 30 minutes for [the existing clinical management system] and at least an hour to an hour and 20 minutes it takes me to do a [new shared care planning tool] care plan.*" [Practice nurse, Practice 7, R2]

> "*The care planning part is just a bit too tedious at the moment…*" [GP, Practice 21, R5].

> "*One of the things we wouldn't want to take forward from Health Care Homes is [the new shared care planning tool], it's been considerably clunky. I feel like the technology fails us in general practice in so many areas, and it really shouldn't be that hard. I'm not sure any other industry would really tolerate it. But we've really appreciated a shared platform, however using that platform is really difficult unnecessarily. It's been difficult to put things into [the new shared care planning tool] one at a time when you could quite easily change swathes of information quite quickly.*" [GP, Practice 9, R5]

A key issue was the inability to auto-populate patient information from practices' existing clinical management systems, creating additional workload and resulting in less staff engagement with the shared care planning tools, especially from GPs:

> "*…having two different systems hasn't been great either. I think as a GP, I'm working pretty flat out from 7:45 in the morning till six o'clock at night, and people are coming at me quickly. And I'm sorting out the problems as they're coming. And for me to go into a different software at the end of the day when I've already been at it for 10 hours is probably not the easiest thing to manage…So I think having one system would be very much easier.*" [GP, Practice 1, R4]

> "*…you look at things like…[different shared care planning software], they don't extract that kind of stuff. They've got their own sections, where you have to re-enter what you're actually doing. So, in both the desktop software and those handheld software for care planning, you've actually got to redo stuff, re-enter stuff. And it's only in the output documents that you're putting that. It's not actually being embedded within the patient's file. So, it just takes more work to do it.*" [GP, Practice12, R5]

> "*…they're seeing their own patients and having to revert back to their own clinical software. So, they find that just quite painful. And again, that's due to the numbers, because you might see one Health Care Homes patient, you might see two or three of your non-Health Care Homes, so you're jumping in and out of different software. They say the software can be quite clunky. Initially too, setting it up, it's quite time-consuming. And then you've got the other problem, the GPs don't want to use it.*" [PHN 9, Interview, R5]

Although the tools tended to have templates for common chronic conditions such as diabetes and COPD, they were difficult to use with less common conditions due to the lack of prompts to include all necessary patient history and information. Practices were also frustrated that they couldn't customise templates to make them more user friendly.

In the round 4 and 5 practice interviews for the evaluation, staff reported ongoing issues with the limited functionality of the systems that extended beyond the creation of care plans and included the tools' inability to support key patient activities, such as monitoring physiological measures or setting and tracking patient goals. Because of these challenges, some practices stated they were not using the shared care planning tools at all or opted to use other tools outside of the shared care planning software options:

> "*I think if there were better systems in place to help patients track things, and I don't think what we use with [shared care planning software] is effective in that way… I think other businesses have great tools for you can see when things are due or get automated reminders in ways that are maybe more effective than what our current tools, be it [system 1] or [system 2], offer. And I think it's the tools that constrain us.*" [GP, Practice 22, R4]

> "*I know we've had lots of support from [shared care planning software vendor] but it's quite time-consuming and I found that's probably the biggest part of the Health Care Homes trial that didn't work with us.*" [Nurse, Practice 4, R5]

> "*…the way I'm doing the care plans, because I tried to use the [shared care planning software] to do a care plan before, it's just so inconvenient. So, I'm still doing the same way of care plan as usual on our software, on the [practice clinical management system].*" [Nurse, Practice 10, R4]

> "*…even some of the allied health providers that used to be quite comfortable and familiar with [shared care planning software] are using it less and less, and probably because of the functionality.*" [Senior Receptionist, Practice 9, R5]

One PHN commented that the software was not "*advanced enough for the implementation*" [PHN survey, PHN 5, R4]. Practices also echoed this, in some instances reporting that the use of the software reduced the quality of their care plans:

> "*The issue with, I think the software, has been a bit clunky at times. We found that having to use the [shared care planning] software, it didn't mesh very well with the software we were using, and the nursing staff when they were using it, were finding, they felt like they were double handling data…Whereas I think the care plans we'd previously been producing were of pretty high standard and we couldn't see that there was a lot of benefit in us using [it].*" [GP, Practice 2, R4]

> "*I think one of the other big limitations has been one of the tools we were required to use, the shared care plan…And the reason why I say that's limiting is because I found when we were using it early on, I didn't feel it was enhancing patient care. It was more of a check box exercise. It led to duplication in some situations because we'd record certain information in the clinical record… but it wouldn't necessarily sync well with the third-party software…. I'd simplify it. For*

example, not forcing people to use tools like the shared care planning tool." [GP, Practice 22, R5]

Practices were also concerned about whether they would continue to have access to the information that they input into the software that was provided at no cost by one vendor for the trial:

> "*I think one other issue, probably, with using the [shared care planning software], is that it doesn't store into your clinical software. So, that's a bit of an issue, because if it all ends, we're not going to have access to any of those documents.*" [Practice Manager, Practice 24, R5]

Communication across the neighbourhood

Practices supported the idea of tools through which they could share information about a patient with other providers:

> "*For this program to run effectively, we need a very effective shared health summary that everybody who's dealing with that particular patient can talk to. And that will be the medium that we will talk to each other.*" [GP, Practice 17, R2]

However, they were concerned about how they could achieve a common tool within a region:

> "*I really think that it's going to be difficult to actually tie the specialists into the shared care planning products because they're going to say: No, look, I'm using this one. I'm not going to go and open up another one.*" [GP, Practice 12, R2]

One of the barriers to communicating with external providers that practices reported was the range of shared care planning software used by the practices within the region, requiring external providers to be across multiple software tools. Most practices reported limited engagement from external providers via the shared care platforms and were unsure whether external providers were using their software or receiving communications from them:

> "*Say, I had a consult with a patient, I would upload it onto [shared care planning software], that we'd had a consultation. But I never saw anybody enter anything back… I have no idea, and I don't even know if anyone was reading the messages I was putting on there.*" [GP, Practice 1, R5]

> "*As far as I know, with [the new shared care planning tool]…the people who [we] put in as part of their shared care [plan] will receive an email that that patient has a care plan and then they can access their care plan. But I've never really had anyone come up to me and be like, great care plan [nurse], and I read that stuff about [that patient] or whatever. So, yes, I don't know.*" Practice nurse, Practice 10, R2]

Some practices attributed the lack of external provider interest and engagement in shared care planning to the small scale of patients and GPs participating in HCH:

> "*The idea was that all the providers in the community would be on this amazing platform, we'd all talk together. In reality, none of them, in the end, wanted to*

sign up for 20 patients in our local area. So, if you don't get economies of scale, you won't get it to work." [GP, Practice 7, R5]

"…the specialists were reluctant to get on-board because it's such a small number. Why bother for 10, why bother for 50?" [PHN 9, Interview, R5]

Lack of program awareness was also a barrier to effectively sharing patient care:

"So, honestly, I was quite confused with Health Care Homes… I'm not sure if I didn't get the right picture of what Health Care Homes was… I still don't really fully understand the program." [Exercise Physiologist, R5]

To increase the uptake of shared care planning software amongst external providers, some practices were proactive, explaining the HCH model to providers they share care with and providing education about how to use their nominated shared care planning software:

"We have all the allied health providers and the mental health clinicians and how to access these because you're not going to do any faxes or anything now, it's just all electronically. It involves a lot of myself and [admin]'s time and the nurses time. So, you have to spend that time with the allied health people just to set it up and then this is how you are going to receive the electronic referrals on your PCs… That initial communication is the key I think." [Practice Manager, Practice 9, R4]

However, this was not always successful:

"… we've got allied health who come to the building here. So, they're the ones we refer to mostly. So, we actually met with them as well and got the guy from [shared care planning software vendor] on the computer and we did a demonstration. But I honestly don't think they're really using it." [Practice Manager, Practice 24, R4]

"Getting allied health on board is another challenge. So, it's hard enough getting your own team, that you employ, on board, and then trying to get other people who are not even that related to the organisation, or anything, trying to them to participate in that, the shared care planning, is quite tricky…Most of it's been individual discussions. And I often get met with a glazed-over look." [GP, Practice 10, R5]

Impact of shared care planning software on care planning and patient access to the plan

Practice processes for creating care plans for their HCH patients were largely the same as before they implemented shared care planning software:

"…it's really not that much different than what we were already doing with the care planning part." [Practice nurse, Practice 6, R2]

"we've sort of been often doing care plans how we used to do them." [Practice nurse, Practice 10, R2]

They also reported still supplying patients with a paper-based copy of their care plan despite the availability of a patient portal to access the plan. There were very few patients who were keen on accessing their care plan, through a portal or otherwise:

> *"None of them are interested in looking at the care plan. I think in our area, we have one of the oldest populations in Australia."* [Nurse, Practice 4, R5]

> *"…I think for a practice like [General Practice 1] where it is a low socioeconomic area, those patients are harder to work with to start off. So, they're not tech savvy, they're not health literate 100%. They'll do what the doctor says. With our patients, in particular, probably 2% are interested in looking at it and that's literally true. It is probably two or three of our total health care population who would want to look at it."* [Practice Manager, Practice 15, R5]

> *"I'd say there's probably two, maybe three patients who, separate to the My Health Record, which they're familiar with anyway, have enjoyed using the* [shared care planning tool] *patient portal, one of whom uploads quite actively a fair bit of enough, blood pressures and sugars and so on."* [GP, Practice 9, R2]

> *"…he puts in his own glucose results every day, and his own blood pressure, and things like that. So the ones that are really keen and hands on, they're getting in there with their logon…But some have no understanding, they're not IT savvy and they go, why am I getting a message to log in to something? What is that? I don't know."* [Practice manager, Practice 16, R2]

Suggestions for improving shared care planning tools

In the final survey, practices were asked how the shared care planning tools could be improved. Of those that responded to this question, most (32%) suggested training of health care providers outside of the practice to access the plans (Table 33). Many also suggested integrating with practice clinical management systems (22%). Very few (11%) said that no change was required. The responses in the previous survey round (4) were almost identical.

Table 33: Practices' suggestions for how shared care planning tools could be improved

Improvement	No. of practices mentioning improvement (% of practices)[1]
Better training/engagement of health care providers to increase access of shared care plans	23 (31.5%)
Needs to integrate with practice clinical management systems	17 (23.3%)
Move to a single system (that is, across different health care providers)	10 (13.7%)
Enhance software by fixing issues around functionality	9 (12.3%)
Better training/support for practice staff	3 (4.1%)
Reliability	1 (1.4%)
Additional patient education/make plans more patient-focussed	1 (1.4%)
No change required	8 (11.0%)

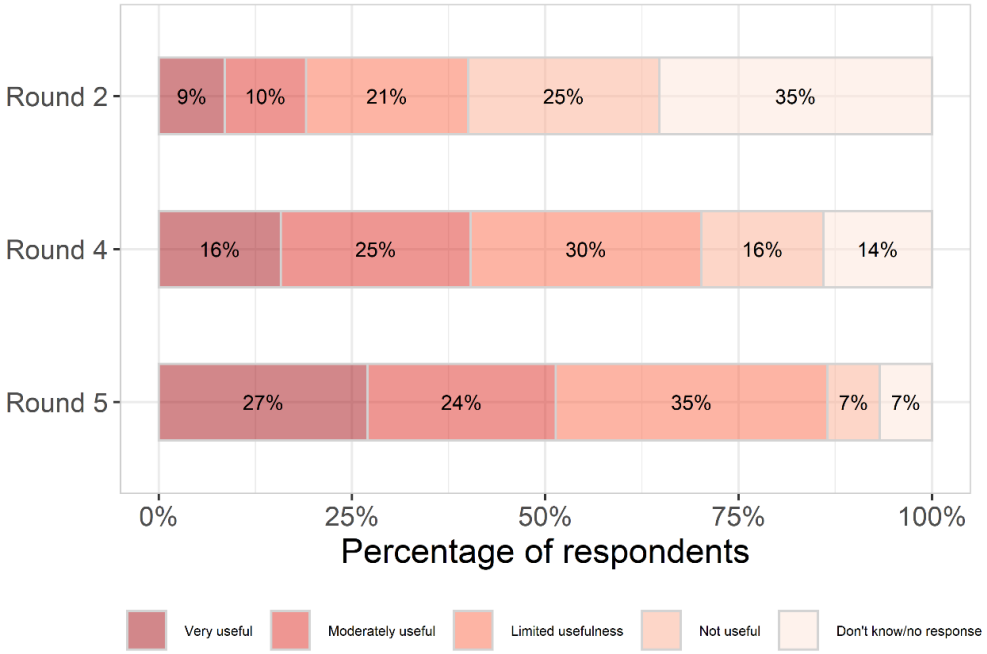
Notes: [1] Practices could suggest more than one improvement. Number of practices is 73.
Source: Practice survey R5, Mar–May 2021, question 3.

Contribution of My Health Record to sharing information

Initially in the HCH trial, practices needed to be registered with the My Health Record System, and enrolled patients were required to have a My Health Record within a month of enrolment. These requirements were intended to enhance sharing of information between service providers and with patients. The requirement for patients to have a My Health Record was lifted in late 2018. Shortly after My Health Record was transitioned to an opt-out arrangement.

In surveys, practices were asked how useful My Health Record was for sharing information about HCH patients with other service providers (Figure 22). In the final survey (round 5: March to May 2021), more than half of the practices (51%) reported that it was moderately useful or very useful. In the same survey, most (49%) also said that there was a moderate or significant increase in the level of use of My Health Record for HCH patients by GPs and other clinicians in the practice over the course of the trial (Table 34). This aligns with the data in Figure 22, which shows the changes in practices' assessment of the usefulness of My Health Record over the survey rounds.

Figure 22: Usefulness of My Health Record for sharing information about HCH patients with other service providers



Source: Practice surveys R2 Nov 2018–Mar 2019, question 17; R4 Nov 2019–Mar 2020, question 6; R5 Mar–May 2021 question 4.

Table 34: Practices' perceptions of the level of change in use of My Health Record for HCH patients by GPs and other clinicians in the practice

Level of change in use of My Health Record	No of practices (%)
Significant increase	11 (16%)
Moderate increase	25 (37%)
Much the same	32 (47%)
Total	**68 (100%)**

Source: Practice survey R5, Mar–May 2021, question 4.

12

HCH in Aboriginal Community Controlled Health Services

Box 19: Chapter summary

Eighteen community clinics managed by Aboriginal Community Controlled Health Services (ACCHS) in the Northern Territory participated in the trial, of which 14 continued to participate through to June 2021, with one withdrawing in March 2021. The 14 clinics enrolled 1,025 patients, with a median of 53 patients per clinic (10 minimum and 268 maximum). Two clinics located in two different remote Aboriginal communities and managed by two different ACCHS were selected as case study sites for the HCH evaluation. Staff members and patients within these communities were interviewed about their experience with the trial at two time points: in 2019 and in 2020.

The two Northern Territory ACCHS clinics involved with the case studies reported that although the HCH model is similar to the way they were already delivering care, implementing HCH meant more frequent reviews of patients' care plans and, overall, more comprehensive plans. They also found that team meetings were more effective and efficient, mostly due to improved care planning, which allowed all members of the team (including visiting allied health and other health professionals) to be across what was happening with individual patients.

Another key benefit of HCH for the ACCHS was that HCH provided certainty of income and enabled staff to get paid for after-hours work that is not supported under Medicare. ACCHS clinic staff were concerned that at the end of the trial they would not be able to provide the level of care needed by their patients with chronic disease without the bundled payment.

ACCHS staff felt that the RST was not suitable for their context as it did not adequately account for the cultural, social and geographic issues of their clients. They also faced many issues implementing the software.

Key enablers for implementing programs like HCH were the ACCHS structure, the community and relationships of clinical staff with their patients.

Challenge included the transient nature of community populations (which made it difficult for a single clinic to operate as their medical home), suboptimal and inconsistent communications with external health care providers (specialists and hospitals) about their patients; and availability of staff and services to follow through with care plans.

During the pandemic the services used more telehealth. This included for specialist consultations, where patients were accompanied by a clinical nurse or a GP would for a videoconsult with a specialist located in a regional centre or hospital. ACCHS staff thought that telehealth could not entirely replace specialists physically visiting the communities. The reasons are that for many patients, English is their second, third or fourth language, and they prefer personal (face-to-face) relationships.

Staff workload at both sites was impacted in the set-up phase of the trial and continued for one of the sites throughout the trial. Nevertheless, staff at this site reported that the model allowed them to get to know their patients better and understand their complexities. Staffing at the second site were affected by other factors, including the inability to recruit to positions that had become vacant.

Relationships with clinic staff and continuity of care were important to patients.

Patients of the ACCHS clinics were largely not aware of what the HCH model entailed and did not notice any changes to their care. Most were aware of their care plan and that the doctors monitored their health through regular follow-ups. They understood the association between lifestyle factors and their medical conditions, and the need to modify their lifestyle to improve their health. Some also mentioned working towards specific health goals (for example, quitting smoking).

Patients' lack of awareness of being enrolled in HCH could be due to the similarity of the HCH model to the ACCHS model, but, as with mainstream practices, raising awareness of initiatives is important so that patients know what to expect.

Of the 227 practices that participated in HCH at any time, 32 were clinics operated by Aboriginal Medical Services (AMSs), including ACCHS. AMSs withdrew from the trial at a similar rate as all other practice types (16 out of 32 or 52%). Of the 16 AMSs that withdrew, 9 had not enrolled any patients and another 5 had enrolled fewer than 5. There were 3 AMSs active in the trial outside of the Northern Territory, and between them they had 570 patients when enrolment closed in June 2019.

The participating AMSs in the Northern Territory were all ACCHS. Of the 18 clinics that initially participated, 14 clinics stayed until the end of the trial (although one withdrew in March 2021). The four that withdrew had enrolled only one patient between them. The total number of patients enrolled in the 14 ACCHS clinics that remained until the end (including the one that withdrew in March 2021) was 1,025, with a median of 53 patients per ACCHS clinic (10 minimum and 268 maximum).

Following community consultations, two clinics located in two different remote Aboriginal communities and managed by two different ACCHS were nominated as case study sites for the HCH evaluation. Staff members and patients within these communities were interviewed about their experience with the trial in 2019 and in 2020. This chapter reports on these experiences. The staff members interviewed represented all the key roles at both sites.

Context

ACCHS are governed by community members and leadership involves both ACCHS management and the community. ACCHS tend to operate multiple clinics located in different communities, but with a central administration located in a regional centre. Depending on the clinic location and resourcing, staff either live in the community or regularly travel to the community, with many communities having a mix of these arrangements. Lack of staff and high staff turnover commonly impact service delivery.

In remote communities, services such as pharmacy, community nursing, and allied health are rarely consistently available and residents rely on clinics. Due to high staffing costs and small population sizes within these communities, albeit with complex health needs, there are often relatively few staff members available to support a clinic, and they tend to work across a spectrum of health needs.

Participants reported that residents of both communities in the case studies had a high degree of complex health needs and conditions, exacerbated by poor social determinants of

health, low health literacy and a limited number of health service options available within their communities.

Motivations to join HCH

Both case study sites felt that their model of care closely aligned with the HCH model, and this was a key motivation to join the trial. Several other factors also influenced participation. One was the opportunity to fund clinical work that they felt wasn't supported by MBS. Another was that the tiered nature of the bundled payment meant that they would be better able to support the needs of their patients compared with the MBS.

The medical director at one case study site also felt that the model would allow them more time for care planning, and considered that patient care plans were not working as effectively as they could. It was their experience that when they saw a patient with complex health problems, too much time was spent identifying the diseases and management issues and not enough time resolving them:

> "*I spend the first 10 minutes of a consultation coming to grips with the fact that she's got diabetes and bronchiectasis, I spend the next 15 minutes coming to grips with the fact that she does or doesn't take her medication. And although we certainly had care plans, and were paid by Medicare when we completed a 721 and a 723, because it was tied to a patient consult and because we knew there were other patients waiting in the waiting room, we never really, I believe, developed what I would consider a good care plan.*" [Medical Director, Practice 20, R3]

Initiation and implementation

The two case study sites approached the initiation and implementation of the trial differently. The decision to enrol in HCH at the first site was made centrally by the ACCHS, by senior medical staff. The ACCHS then arranged a meeting with clinic staff to explain what HCH would mean to them and the clinic.

The other site set up a project team comprised of clinicians, admin, the senior business manager and an IT representative. A part of their initial process was observing the implementation experience of the other ACCHS, and this helped to inform decisions, particularly in relation to IT.

Training and support

The sites had different experiences with training and support. At the first site, it was unclear whether staff received training and support for implementing HCH. One allied health professional said they did not participate in training related to HCH. The clinic nurse also did not recognise terms associated with the online training modules, and the regular GP at the clinic had not used the modules. The clinical staff from the various clinics that are part of the ACCHS participated in weekly team meetings to discuss complex patients and for teaching sessions. During these meetings they discussed HCH. Some staff expressed initial difficulties

"wrapping their head around" the program but felt their understanding of the program improved over time:

> "*Yes, it was confusing in a sense, but after you live and eat and breathe it for a bit, you start to get your head around it.*" [Allied Health Professional, R5, Practice 20]

The new clinic coordinator, who had just started working at this site echoed this sentiment and expressed interest in receiving additional training to expand their knowledge of the program and its objectives.

Staff at the other site stated that they initially worked closely with the PHN and their sector body – the Australian Medical Services Alliance Northern Territory (AMSANT) – to gather knowledge about the program. AMSANT also employed a person to support the ACCHS with piloting HCH and their role was to work closely with the ACCHS as well as liaise with the PHN and HCH staff to provide support and information. The organisation also built a strong team that included IT, administrative staff and clinicians and they worked effectively as a team through challenges that emerged.

The medical director at one site expressed some frustration with the initial HCH process and the lack of answers to questions about implementation. They understood it was a trial and that some of the answers may not have been known, but nonetheless felt frustrated.

Patient enrolment

Staff at the one site described significant learning required to manage patient enrolment. To enrol patients, initially, a community barbeque was held (food events in remote communities are important for bringing people together to share information) and information about HCH was combined with health checks. While the barbeque formed the introduction to HCH, the GPs followed up with enrolling patients when the patients attended the clinic. It was decided that GPs and the clinic manager would be involved in enrolling patients because they were thought to have *the strongest relationships with community members*. Although it was useful to introduce HCH at a community event, in retrospect several people involved in the event felt that the process could have been undertaken solely within the clinic setting.

There was an attempt to use community liaison officers in the enrolment process, but there was little interest on their part. This lack of motivation was attributed to the perceived lack of difference HCH would make *on the ground*.

Clinic staff commented that the similarity of the ACCHS model to HCH model meant patients were unlikely to notice any difference in their care. Even though the PHN had produced videos in the local language, clinic staff found it challenging to explain HCH to clients, as they did not think the clients' care would change. HCH was explained as being about the way the clinic was funded to deliver health care to clients. A shared care record already existed, so that component of the model was easier to discuss. However, some patients were still concerned that their care might change.

The transient nature of people living in the community was a challenge for enrolling clients. Initially GPs had to consider which clients to recruit, as for most community members, their

care is shared among several clinics. There was a strong reliance on longer-term clinic staff to identify which patients *truly call* the community home.

No patient declined to enrol. This was attributed to the strong relationship that GPs and clinics have with their clients. A GP pointed out that they know their clients and their families very well and attends their funerals and celebrations, and that this positively affected enrolment.

Identification of patients eligible for HCH at the other case study site was done centrally. The medical director went through the records of all potentially eligible patients and selected those to approach. They provided the list of patients to be approached to staff at the clinic. The clinic coordinator (a nurse) then went into the community and approached each of the patients about participating in HCH. The main encouragement provided to patients to participate was that HCH would provide more resources for the clinic and consequently enhance care for them, and that the patient's care would not be adversely affected in any way. Most patients agreed to participate when they were approached by the nurse.

Risk stratification tool

The RST caused significant challenges at both case study sites. Due to issues with the software, the first case study site did not use the tool and identified patients across the organisation's clinics to approach to enrol manually:

> "*I actually manually got a list of all of our chronic disease clients with more than two chronic diseases, and actually went through the 700 of them, working out who engaged with the service enough, and who fulfilled the criteria in order to create a list that was a meaningful list for people to go out and seek their consent.*" [Medical Director, Practice 20, R4]

The GPs divided up the 700 patients selected and went through their medical records and developed a care plan for each patient. This was all done in the absence of the patient.

At the second site, the team initially compared patients to other patients within the community and, after extensive team discussions, it became apparent that they needed to compare their client experience to people living in regional areas. In a remote setting, questions of access to transport, housing, allied health services and specialists are crucial. For example, while the clinic provides transport for clients to attend health services, it is not always available at times that enable clients to access the clinic when they need.

The following additional issues with the RST were also raised:

- The tool does not consider certain chronic conditions:
  "Some *of our most complex patients who have extremely high care requirement needs but they don't actually come under any of those other chronic conditions that are included in the HARP. For example, people with malignancies just don't quite fit into that algorithm somehow and they are incredibly complex.*" [Staff member, Practice 20, R4]

- Social determinants of health should carry more weight in the tiering process, as they play a significant role in health in remote communities.
- Tier 3 does not provide enough support or cater to the needs of patients who are *some of the sickest in the country*. Many of these clients are in the clinic on a regular basis for support with their conditions.
- The tool is subjective and the questions are broad and binary: *"The HARP is very open to interpretation I would say, the way the questions are phrased …"* [GP, Practice 20, R4].

Overall, staff members were critical of the usefulness of the tool and felt that it did it not adequately account for the cultural, social or geographic issues of their clients, which often entail extreme challenges and disadvantage.

Shared care planning

Though shared care plans were already in place at both case study sites before HCH, the process differed at the two sites.

GPs at the first site prepared care plans for all patients registered for HCH, in the absence of the patient. Additional funding was provided by the site to free-up doctors to develop the care plan. Although the method used to develop the care plans would suggest the care plans are not patient-centred, this is not the way the GPs saw it. There is a section of the care plan that allows the GP to engage the patient during a consultation. For example, the GP is prompted to ask the patient, "Do you want to give up smoking?", "Do you want to improve your diet?", etc. The patient has the opportunity to input at these points.

Sections of the care plan allow other staff members, and those who provide care to the patient (such as, allied health), to also have input to the care plan. This may lead to GPs being more aware of what other care providers suggest:

> *"… maybe before I might not have read the podiatrist's entry, I might not have read the optometrist's entry, I'd sort of notice that they'd seen them, whereas this way I actually read the optometrist's entry, I read the podiatrist's entry, I read the Tackling Indigenous Smoking entry …"* [GP, R4, Practice 20]

One site stated that their plans were stored in their practice clinical management system. Involving patients in care planning aligned with the site's usual practice and was viewed as a fundamental component of the patient-clinician relationship. However, the level of engagement often depended upon the capacity of the patient to engage with staff.

Staff members at both sites discussed the main differences with their own shared care planning process and that as part of HCH. Interviewees at the first site stated that care plans were used in referral letters to the hospital and specialists. A marked difference with the shared care plans under HCH is that revision of the plans was prompted more frequently than previously undertaken. Staff thought that the care plans developed as part of HCH were more comprehensive:

> *"There were care plans in place. They were a different sort of care plan. Probably Health Care Homes are more up to date and more cohesive. I think the care plans we had before actually weren't that wonderful, really. They were a bit scattered. I find these ones quite good."* [Nurse, Practice 20, R4]

> *"I've come to see, and I think this is what's so great about the Health Care Homes, seeing as a model where all the different health people who are involved with a patient care communicate with each other in an effective manner."* [GP, Practice 20, R4]

Staff commented that HCH made it easier for nurses to access the care plan and that the nurse had greater ability to influence the doctors to change the care plans. This allowed nurses to advocate for the patient and discuss their concerns further with the GP. The GP said they overhauled the way they were doing care plans. They had consulted other organisations and created a template they thought would be good for them. The GP thought this was a real positive from HCH:

> "*You get a better perspective on it, especially if you're new or somebody doesn't know the client, you've got a perspective on them that it doesn't take a lot of time to figure out. Yes, it's much more effective and much more efficient*." [GP, Practice 20, R4]

At this site there were monthly meetings attended by the GP, the many nurses, and a pharmacist, where they discussed the care of patients. Both GPs thought the meetings were substantially better and more efficient than previously. The care plans were simplified and updated, which allowed locums and other GPs not familiar with the patient to identify more easily who the patient was seeing, when and for what. However, although one of the GPs could see the benefit of the improved care plans, they commented on the additional burden this puts on them to keep the plans up to date.

Staff members at the second site stated that because of the transient nature of the population in remote communities, care of patients is spread across the clinics in the communities the patients visit. For security purposes, each clinic has its own practice clinical management database, which results in multiple entries for the same client across the clinics that are part of the ACCHS. Notes are made on the client's file to indicate their "home" clinic, which is the clinic that is allocated responsibility for their shared care plan. The ACCHS is moving towards a centralised client database and will eventually centralise shared care plans.

Communication with the regional hospital also remains a challenge that can affect shared care plans and the maintenance of client records. For example, hospital discharge summaries and letters from specialist appointments are inconsistent, which can lead to inconsistencies in patient data kept by the service. The GPs reported spending significant time and effort following up information from the hospital, although they acknowledged that this is not unique to them – it is experienced by GPs across the country. The allied health professional interviewed also reported similar challenges.

HCH model

From the outset, staff from both case study sites maintained that HCH was very similar to their model. Two similarities were using data and a strong commitment to continuous quality improvement, which both sites continued under the HCH model.

In the first round of interviews, an allied health practitioner at the first case study site indicated that they had not noticed any difference in the way patients were treated since the introduction of HCH. They knew whether a patient was a HCH patient because there was a sticker in the patient's notes indicating their tier. At that stage, they did not feel anything had changed and that patients with a chronic disease were treated the same regardless of whether they were a HCH patient or not.

While the care for HCH versus non-HCH patients was largely the same, staff members felt that documentation via the care plan and patient monitoring was enhanced under HCH. An allied health practitioner reflected in the final interview that HCH patients were monitored more closely by clinicians and other health professionals, with more efforts to "chase people up" (mainly other health providers), to ensure HCH patients received high quality chronic disease management. They considered this increased the willingness of patients to engage with the health service:

> "*They're more willing to come, that's all I can see, so something is registering somewhere in their head and they're more willing to present*." [AHP, R5, Practice 20].

A practice nurse, who was interviewed in the first round of interviews and subsequently left the clinic before the second round of interviews, could not think of any specific changes at the time, but stated that HCH would bring the health care components together in a cohesive way. The nurse believed in patient-centred care and was practising it at the clinic, and outlined the approach used to ensure patients understood what was being asking of them (the "teach back" method). The nurse described one example where a patient became more confident and self-sufficient, and less reliant on the clinic:

> "*You need to goal set with them. Achievable goals. SMART goals rather than set goals for them*." [Nurse, R4, Practice 20].

The staff at the clinic believed that patients had good access to services at the clinic. Patients were booked to see specialists or other visiting health professionals, but they could turn up any time to see someone at the clinic. If a patient came to the clinic for a booked appointment, staff attempted to get the patient to see other healthcare professionals at the same time. For example, while the HPA team was conducting the first round of interviews, patients were coming to the clinic to see a podiatrist who was visiting the clinic and staff encouraged patients to see the GP and the nurse while they were there. The nurse believed that access to allied health workers had improved since the introduction of HCH.

A new clinic coordinator felt that HCH patients were monitored more closely, which, in turn, improved continuity of care. They highlighted enhanced follow up, referral and care planning processes as things that had improved patient management. They felt that HCH patients a

generally had better understanding of their health and how to manage their conditions compared with other patients.

While the GP felt that the clinic was already delivering care to chronic disease patients based on a model similar to HCH, they felt that the biggest benefit of the program had been the improvement in care planning processes. This resulted in updated care plans that were more detailed and provided a better source of information for other health professionals who were assisting with HCH patients' care. Many visiting health professionals, including allied health, may not know a patient or be intimately familiar with their condition(s); therefore, these care plans allowed staff to provide other clinicians with a holistic view of HCH patients in a timely and efficient manner. As a result, the GP felt HCH clients:

> "*...are getting a better service because people are more informed about them than they were before...*" [GP, Practice 20, R5].

The GP and the medical director discussed the benefits of the flexible program funding arrangements. The medical director cited this as the main benefit of HCH as it provided the health service certainty of income and enabled staff to get paid for after-hours work that they believed was not supported under Medicare. Both had concerns about the end of the trial and how they would continue to provide this level of care to their patients with chronic disease without the bundled payment. The medical director described the HCH funding model as:

> "*...ideal for regional and remote and it's a way for us to actually be funded for all the work we already do on the ground and don't ever get paid for*." [Medical Director, R5, Practice 20]

The GP observed improvements in the health of some HCH patients over the course of the trial, particularly patients with diabetes, but felt that this was a result of better management, rather than improved patient activation. They stated that patient activation comes from the patient, and that HCH has not changed that. They did not believe that the way they spoke to or interacted with their patients has changed because of HCH. They did state that some of their patients experiencing positive health outcomes are excited about these results which, in turn, increased their involvement and overall positivity as it relates to managing their conditions. Ultimately, they noted that changing peoples' behaviour is a slow process that does not happen in a short period of time.

Clinical staff and management at the second case study site commented that the comprehensive shared care plan was useful for health staff to document the more complex patients:

> *"...we often use our care plans as a running summary of what area needs focus on in the next few months, which I think is helpful to staff coming in, not knowing patient's background." [GP, Practice 19, R5]*

In addition, the twice-yearly audits provided a framework to ensure everyone is followed up. This was considered useful and did not significantly add to day-to-day work, which was important with staff shortages.

GPs at this site reflected that once the HCH program was up and running, there was minimal additional work. From their perspective, getting paid for the administrative work they were already doing but could not claim under fee-for-service was a strength of the program.

The additional resources allowed the medical director to advocate for a new diabetes program. It was observed that although HCH focused on innovation, often simple initiatives such as exercise and committing health resources (such as facilities) to support exercise could make a big difference.

Implementation enablers and barriers

During the enrolment phase

One of the case study site identified their ACCHS structure as a key enabler. Senior staff in the ACCHS championed the model in the first instance and facilitated its trial in the clinic, supporting the implementation when the challenges arose requiring an extensive investment of labour (such as IT implementation). The ACCHS also provided a lot of practical support along the way, for example, understanding of billing and help with this.

The site also identified the community and the strong relationships the clinic staff have with patients as an enabler, which meant it was relatively easy to enrol patients for the trial.

The same organisational structure that supported implementation was also identified as a potential barrier to introducing new approaches. That is, individual clinics and their boards have the final say as to whether they would participate in the trial. In some instances, it was difficult to convince them to participate in the HCH trial.

As with other sites around Australia, staff of ACCHS clinics found it difficult to explain the model to patients and how it would benefit them. This was especially a problem with ACCHS clinics and other practices that were already using a chronic disease management approach similar to the HCH model. The services reported that some patients were concerned that things might change.

One of the sites reported that software issues were also a large barrier in the early stages of the trial. These issues often took an extensive amount of effort, funding and commitment to address. Other practical issues clinics had difficulty with were understanding billing, for example, what services would form part of the bundled payment for a patient, and what could be billed separately.

Clinic staff commented that innovations that may be appropriate in other settings do not necessarily work in a remote context. For example, group sessions with patients are rarely appropriate. This is due to issues of confidentiality and privacy, which are critical to manage in a small community, coupled with long-standing issues between different family groups. Therefore, services need to find alternative methods of educating people living in this environmental context.

The two case study sites found it difficult to share care with care providers not employed by the ACCHS. For example, they found it hard to get feedback from specialists, and discharge summaries from specialists and other providers were often inconsistent.

Access to staff and other services to follow through with care plans was also more complicated for the ACCHS clinics. For example, they commented that it is often difficult to access particular sorts of specialists in remote communities, as well as aged care and disability services (plus distinguishing between the two).

Post patient enrolment

In the post patient enrolment period, strong relationships facilitated ongoing HCH work. It was observed that communities with a higher reliance on fly-in-fly-out staff would find HCH challenging to implement.

Other post-enrolment enablers included education supports. One of these was the HCH Forum hosted by the Department of Health in November 2019. It was still being talked about long after the event, and interviewees felt that those that attended came away with ideas about how you could do something different and wished they had it earlier. The AGPAL webinars were also considered useful although not frequently attended due to time constraints.

Patient engagement was also cited as an ongoing challenge for the clinics:

> *"I think you could say 70% of the patients we don't see as often as we'd like…"* [Medical Director, R5, Practice 20]

The medical director at the first case study site identified patient engagement as an ongoing barrier that did not improve with the implementation of HCH. It was estimated that the main GP saw their tier 3 patients about three or four times in three months at most and others less than that on an ad hoc basis:

> *"I would be surprised, and we haven't pre-empted anyone, I would be surprised if any one of them would still know that they're in Health Care Homes…, we definitely explained to them what it was about, and we talked to them about the care plans that we've developed for them. I don't believe anyone would say I'm in Health Care Homes and therefore I should get this, this, and this."* [Medical Director, R5, Practice 20]

The transient population provided challenges for keeping patients enrolled in the trial. Patients often travel to other communities and GPs were unsure at what stage to unenroll them; it was not unusual for patients to be gone for three or six months but the clinics had no way of knowing whether they would be coming back. At the first case study site, any patients who did not actively engage with the service were removed from the program, although the staff didn't state the time frame at which this would occur. The second study site suggested an option to pause enrolment.

Other contextual inhibitors included:

- The shortage of staff and overworked GPs made shared care plan reviews a challenge.
- A question remained whether a second round of enrolments would have made a difference to counteract dropouts and ensure there were enough people enrolled to make it financially viable.
- IT issues continued to be a challenge for telehealth. Patients do not have reliable access to video nor the technology. The popular videoconferencing platforms lack security that would guarantee confidentiality and were therefore not an option.
- Health literacy is a long, slow process. The focus for staff is building strong relationships with clients to ensure that people feel more comfortable to talk about what they want and need in relation to their health care.

Well into the trial concerns remained around the financial viability of the model; whether it could support patients who had almost weekly follow-ups. An additional tier or tiers were suggested to improve this.

Accountability emerged as a key theme from both clinical and non-clinical staff. Concerns were that urban GPs could bill for care plans but there was no accountability that a plan was developed. Staff were also concerned about being clear on what could be claimed under HCH versus Medicare for acute versus chronic conditions: *it's ...an honesty system* and questions were raised about what's happening on a national scale. They pointed out that Medicare doesn't reject inappropriate claims so it's up to clinicians, and this was a source of stress for GPs who were keen to ensure they were not inadvertently double-dipping.

Securing funding for transient community members was also an ongoing concern. Managing highly mobile patients was difficult. The lack of connectivity in many remote communities coupled with people changing phone numbers makes contact difficult. In the trial, patients who were known to be relatively stable were deliberately chosen to address this challenge. However, this does not address the challenge on how to fund this cohort.

Bundled payment

Although both case study sites reported additional flexibility with the bundled payment – that HCH funds were not tied to individual clients and could be used flexibly across the clinic – this did not mean that they were necessarily better off compared with fee-for-service. Interviewees at one of the case study sites roughly calculated that they needed about 500 enrolees to employ a new staff member, but that this number would be impossible to achieve in small and transient communities. At best they could share a full-time role among a few clinics.

Feedback from ACCHS suggested that the bundled payment – with refinements – may a viable and appropriate approach in these settings. This partly reflects that ACCHS are typically offering a team-based approach in which there is much greater reliance on nurses, Aboriginal health practitioners and workers, and allied health professionals in addition to the GPs, and that these service providers are only partially and inadequately supported through MBS fee-for-service revenue. Additionally, the bundled payment offered greater predictability

in revenue and opportunities to use funds more flexibly in addressing priority needs of the ACCHS populations.

COVID-19 impacts

Northern Territory communities were in lockdown for about four months in 2020 and were affected by other states' lockdowns, making it harder to get services and specialists in. Despite this, both sites reported that they were surprisingly minimally disrupted by the pandemic and it was *business as usual*.

Both sites made additional use of telehealth during the pandemic. Increased use of telehealth was one area of innovation directly resulting from COVID-19:

> "*...we just started thinking outside the box a little bit, and actually using other means to make sure that we could continue to service these communities.*" [Business manager, Practice 19, R5]

At the first site, the health service provided iPads to its clinics to maintain continuity of service by clinicians working off-site.

At the second site, telehealth was mainly used for specialist appointments, for specialists who could not visit from places like Sydney and Melbourne. Telehealth consisted of the patient sitting with the clinic nurse or GP having a consultation with a specialist using technology within the clinic. Although the health service wanted to continue to use telehealth for specialist appointments, particularly as there was an increasing difficulty in getting clinical staff into remote clinics, it could not entirely replace specialists physically visiting the communities. The reasons are that for many patients, English is their second, third or fourth language, and they prefer personal (face-to-face) relationships.

One of the sites noticed that community members were less transient than usual, so GPs were able to have stronger contact with patients during the pandemic.

Impact of HCH on practice staff

While staff at the first case study site had positive experiences with the program, the trial impacted their workload. This was particularly apparent for the GPs who took ownership of HCH and played a central role in patient management and care planning. However, the main GP commented that despite their increased workload, HCH was advantageous as it allowed them to get to know their patients better and understand their complexities and what needs to be done to manage their care:

> "*Because the GPs have enjoyed it, even though they've found it onerous, they've also enjoyed feeling more to grips with their patients than they have when they randomly see them.*" [Medical Director, R5, Practice 20]

In the first round of interviews at this site, the allied health practitioner said they had been given the role of chronic conditions coordinator, but there had been no change to the work they were doing. These observations were echoed by the nurse who stated that their role, and the role of the other nurse, had not changed with the implementation of HCH.

In the final round of interviews, the allied health practitioner reflected that while they had to work "*a little bit harder*," the enhancement of patients' care plans had given their role "*a bit more purpose*" as they were able to gain a better understanding of patients' problems. While the new clinic coordinator felt HCH had minimal impact on their role, they had a positive experience with the program and felt the clinic's more complex patients were being followed up and monitored more regularly which, in turn, had "*reduced the incidence of [patients] presenting acutely unwell.*"

At the second site, staff reported that their workload was predominantly affected during the learning phase of the HCH trial when the clinic was working out how to introduce the model to patients, gather their consent and work out aspects of billing (chronic versus acute care). However, the shared care planning process and other aspects of the model were considered to be very similar to what was done with the previous care planning system. No one cited a significant effect on workload. If anything, in relation to billing, it was considered to "*definitely be more straightforward*".

Although staff at this clinic continued to report minimal impact of HCH, staff workload was impacted by other factors. After an extended period of staffing stability, the clinic experienced staff turnover; two remote area nurses left and the service was unable to fill the vacancies. This resulted in staffing shortages and intermittent clinic closures (30–60 minutes). Simultaneously, there was an extensive period of sorry business in the community, which meant that local support staff were not available to work, placing an additional burden on the clinic. Sorry business combined with staff shortages resulted in the second round of community research being delayed by several months.

Staff turnover was also an issue at the first case study site, and the clinic also faced issues with recruiting to vacant positions. The medical director described the long-term staff, such as the main GP and the allied health practitioner, as "*linchpins*". Staffing stability was seen as key to improving health outcomes. The medical director acknowledged that HCH wasn't going to fix this issue, but that additional funds that might come from the funding model could be used to improve the service to counteract issues caused by high staff turnover:

> "*What I've noticed is when we've got stable staff and the client knows that they're going to come up to the clinic and say can I have my medication, and the person's going to know their name, know where their medication is, know that that insulin pen isn't available yet, but it might be available next week, not give them the wrong patient's medications and not give them the wrong information. I think that's when patient outcomes will improve when we've got a lot more stability of staff…But being involved in Health Care Homes gives the service more money then I believe we can implement more changes to mop up the problems with the rapid turnover of staff.*" [Medical Director, R5, Practice 20]

Patient experiences

Over the two rounds of interviews, 18 patients were interviewed at one case study site and only one at the other site, despite numerous efforts by the researcher to visit the site and efforts by local GPs to recruit patients for the case study interviews.

The clinic staff at both sites thought patients would not be aware of any changes to their medical care; therefore, they would not be able to attribute any changes to HCH. Patient awareness of their involvement in the program was in fact low and most of them were unaware of HCH or that they had signed up for the program.

The patients who were interviewed had a good understanding of the association between lifestyle factors and their medical conditions, and they expressed awareness that they needed to modify their lifestyle to improve their health. Most were aware of their care plan and that the doctors monitored their health through regular follow-ups. Some also mentioned working towards specific goals, such as reducing or quitting smoking (among the smokers), lowering alcohol consumption, improving their diet, and increasing physical activity:

> "*It was a continuous thing. I am a person with diabetes, so I've got my doctor and every time I come and check in they keep track of me with…Records and chart going and I've got a goal that I have to try follow up. And I'm sure that other people have the same goal as well.*" [Patient 6, R5, Practice 20]

No patient indicated they exercised to increase their physical activity; instead they mentioned doing work around the house and recreational outdoor activities (such as camping).

Interviewees expressed ownership of their health. This was evident when they were asked about how they manage their health. They felt comfortable expressing their opinions and felt they had some control in managing their health. Some reflected on past cultural history which had contributed to their health:

> "*I think [looking after my health is] my responsibility. You've got to try to look after yourself with doctor guidance and advice.*" [Patient 6, R5, Practice 20]

> "*…We've got ourselves into this, to be honest we've been diabetic and things like that, even increase sugar. But in our day, here was no sugar or anything, [unclear] health everything people but not we…In a month now, so it's pretty hard to get it but I'm trying my best to try.*" [Patient 4, R5, Practice 20]

> "*Well, it's my responsibility to [look after] my health…look after myself and to show my young kids and grandsons to do..all that sort of thing, like what are definitely giving me problem with that now that I've had blood pressure problem. And all that gout thing from drinking [inaudible]. I'm going to try telling my grandkids and my families and grandkids…I keep telling them…*" [Patient 7, R5, Practice 20]

Patients appeared to have good access to the medical staff at the clinic and most patients indicated they felt comfortable speaking to the doctor and the nurse about their medical conditions. They appreciated the support they received from clinic staff and indicated certain staff members had been a major source of support for them and their families:

> "*…[the] family support was helpful…Yes, nurses and doctor. [GP1] looks after me. He takes care of me so much, my medication, and he tells me if I need to take a different tablet…*" [Patient 5, R5, Practice 20]

Their routine checks allowed for more consistency and relationship building. Relationships with clinic staff and continuity of care were important to patients:

> *"I'd rather stay with one doctor. In fact, if [GP1] left here and somebody else, [GP1] is going on holiday and we get another doctor here, I actually avoid that doctor. I'll wait for [GP1] to come back."* [Patient 6, R5, Practice 20]

> *"So, there's different doctors sometimes that makes is hard because you've got to repeat yourself."* [Patient 4, R5, Practice 20]

Interviewees also highlighted access to other health professionals who visited the community. These additional services included pharmacy, podiatry, dentistry and optometry.

Most patients did not recommend any changes to the health care provided at the clinic, but a few highlighted specific enhancements they felt would improve the health of the community, such as additional contact from clinic staff and more support to older community members.

Pharmacy services

Neither site had referred patients to a community pharmacy to receive services under the community pharmacy trial. One of the sites had a medicine room that was overseen by the clinic manager. Patients received medicines at the clinic and the GPs had access to a pharmacist for any questions. Pharmacists employed by the ACCHS travelled to the clinic about every eight weeks to review the medicine room and oversee processes. A contracted pharmacy provider also undertook six-monthly reviews.

The other case study site ordered medications for patients through a pharmacy in Darwin. The medications were delivered each week. The ACCHS employed a pharmacist, and they participate in the monthly meetings where patient care is discussed. On other occasions, the pharmacist contacts the GP to discuss the medications a patient is taking. Some patients looked after their own medicines, but for others, the clinic dispensed their medicines each day.

Remote clinics operate under the Highly Specialised Drugs program that provides access to specialised PBS medicines for the treatment of chronic conditions. Dispensing staff are required to undertake specific training.

The community pharmacy trial was not viewed as relevant in the remote context by staff at one of the case study sites. For clinics in remote communities, teaming up with a pharmacy would not lighten their workload as clinic staff dispensed medications.

In addition, staff members at one of the sites felt that it wasn't desirable to have visiting community pharmacists consult with their patients, as it is clinic staff that have the ongoing relationships with patients. Also, patients should get advice and other services related to their medicines when its suits them rather than when a community pharmacist is visiting. A special example of this is patients visiting from other communities, who often require an unscheduled visit to the clinic for their medicines.

The GP at the other site had heard of the community pharmacy trial but had not referred patients.

ACCHS staff suggestions for HCH

Staff members at the first case study site described the program as a "success" and hoped to continue certain aspects of the model, such as care planning, if existing funding arrangements permitted this. Staff advocated for the program to continue as they felt it was too soon to effectively measure health impacts and that the funding model was much more advantageous for health services in rural and remote areas compared with the traditional fee-for-service model:

> *"I note the undeniable value of the HCH model (capitated payments for chronic disease) in supporting health services deliver care to people from culturally and linguistically diverse (CALD) groups, including Aboriginal people as well as migrants…HCH provided resources which allowed [health service] to fund detailed and regular review of care plans thus ensuring items included in the "to do box" at any one time made medical sense… In addition, the up-to-date care plans could be read by other treating clinicians and a more consistent medical approach could be counted on for that client…The usual fee-for-service billing model for services can miss out on the MBS funding for 721 and 723 for people from CALD backgrounds because GPs may not be satisfied the patient has been appropriately/ sufficiently engaged in the consultations."* [Medical Director, Email correspondence, R5, Practice 20]

The flexibility of the model allowed staff to be compensated for their non-client facing work, which they reflected had enhanced patient management and promoted preventative rather than reactive care. In the long run, staff felt the program would help to improve patient outcomes:

> *"…if I had control, I would continue it because two years is very difficult to actually measure quantitatively the outcomes. You can probably do a qualitative measure of the outcomes but quantitatively two years probably is a small amount of time."* [Clinic Coordinator, R5, Practice 20]

Staff members at the second case study site had several recommendations for HCH. These included:

- Clarification of explanations of what constitutes acute care versus chronic care in the context of chronic disease.
- Consider an additional tier – or even tiers – for remote chronic disease stratification.
- In future iterations of HCH that involve additional pharmacy services, consider how pharmacy is delivered in remote settings.
- Review the HARP tool for plain language wording and the degree to which it reflects the remote context, particularly Part B.
- Consider developing a consent form that is relevant to ACCHS and is in plain language.

In the second round of interviews, ACCHS staff and the peak body reiterated some of the earlier suggestions and added to them.

In relation to additional tier or tiers they suggested that stratification that reflects the complexity and uniqueness of the client base is required. Some complex clients have more than 250 clinic contacts in a year. It's clear that some high need clients do better under Medicare and concern exists that this could lead to cherry picking if not managed through clear guidelines. A guide to the number of contacts in each tier was also suggested.

In relation to patient enrolment, it was suggested that an opt out process to simplify the enrolment process would be useful.

Finally, in relation to the HCH model, they suggested that it could be simplified. It was thought that the training modules contained too many concepts for people on the ground to absorb due to time, and the philosophy and theory in particular could be pared back to expose the practical elements of the model that could be implemented.

13

Effects of location, size, ownership or patient volume

Box 20: Chapter summary

Different barriers and enablers presented for practices in their implementation and operation of HCH based on their location, size, ownership model or volume of patients enrolled in the trial.

Compared with practices in metropolitan and regional areas, rural and remote practices described additional challenges with participating in the trial. These were especially apparent during the early implementation phase and included difficulties with IT set-up and internet connections, recruiting and retaining staff, and availability of supports and medical resources within the community resulting in reduced access to services. Collaboration with the PHN and other practices within the region was also more challenging due to the wide geographic distribution. Widespread use and acceptance of telehealth and videoconferencing, which accelerated during COVID-19, helped to improve collaboration.

On the other hand, due to the lack of services outside of primary care, rural practices tend to be more holistic and team-oriented in their approach, and the bundled payment supported them in this, providing certainty of funding and backing for clinical staff to work at the top of their scope.

While larger practices had more staff and infrastructure to implement the model, they also took more time for implementation due to the need to get a larger group of people engaged and a wider set of processes to change. Smaller practices had more flexibility to make and implement decisions, but they had less resources and were more greatly affected by turnover of key staff compared with larger practices. Regardless of practice size, PHNs and practices reinforced that strong leadership, staff buy-in and a larger scale of HCH patients were integral to program success.

Similar to practice size, there were advantages and disadvantages to operating HCH in corporate versus independently-owned practices. In many instances corporate practices were also large practices and independently-owned practices were usually small or medium-sized; therefore, there was some level of overlap when comparing practices' experiences based on practice size and ownership.

Practices with very low numbers of enrolees didn't have the flexibility from the bundled payments to introduce new or different supports for patients and had difficulties with maintaining the model given that it was such a small part of their practice.

Rural and remote vs metropolitan-based practices

Compared with practices in metropolitan and regional areas, rural and remote practices described additional challenges with participating in the HCH trial. These were especially apparent during the implementation phase and included difficulties with IT set-up and internet connections, recruiting and retaining staff, and availability of supports and medical resources within the community resulting in reduced access to services:

> *"Some practices have diabetes educators and or a, like one of their practice nurses may be a diabetes educator or respiratory nurse or a something or other else, who might take on some activity. But…the resources are just really stretched in most of our practices…And the GPs are actually covering the hospital as well as the practice … So, there's a number of things impacting on the practice."* [PHN 10, interview, R2]

> *"…I'm personally booked out six weeks in advance as a GP, and…[GP] is booked out six weeks…And we've got a bit of a crisis at how do people access stuff…"* [GP, Practice 7 R1]

> *"We have lots of internet problems so me trying to … log onto HPOS to do this… Sometimes I can log on and it takes me five seconds to logon to HPOS, sometimes it takes six or seven attempts."* [GP, Practice 17, R1]

> *"Not to discredit the practices, I'm sure that they would have had good intentions to really start team-based care and integrated care, but they just don't have the infrastructure to do it in the way that intended. The resources are not there. As [Practice facilitator 2] says, the transient workforce is a massive issue here. Even in my time supporting the practices, you would go to the practice and it's a new nurse. The one you saw last time has left and that new nurse knows nothing about Health Care Homes or even what it is. So, not much progress at all…"* [PHN 8, Interview, R5]

Rural and remote practices and PHNs also discussed additional challenges collaborating with other HCH practices, arranging meetings and organising face-to-face training activities due to the wide geographic distribution of practices in some regions:

> *"The PHNs don't seem to have organised any collaboratives. And I don't know that there's anybody locally from our point of view that's involved. Part of the difficulty with the primary health is that it's not very local. It covers the whole of the state….And I don't know that there'd be small practices like ours involved virtually anywhere, really."* [GP, Practice 2, R1]

Widespread use and acceptance of telehealth and videoconferencing, which accelerated during COVID-19, helped to improve collaboration.

An often-mentioned challenge for rural practices is the lack of services to refer patients to. However, this reality means that practices in these situations tend to be more holistic and team-oriented in their approach to care:

> *"Maybe that's a reflection of the type of practice we are, because we're in a community where there isn't a hospital, and we've come from that culture of managing everything anyway…We haven't got the hospital just right here, so if we saw people for home visits, we might engage the pharmacy to help and so on. So we've had that culture of seeking allied support before. So it wasn't such a change for us. I can quickly speak to the nursing staff, or speak to the pharmacy, or speak to one of my partners, or…whatever needs to happen….it happens here*

and it's always been the way, because of the nature of this practice…As opposed to say, [town], *where they've got the hospital right there…*" [GP, Practice 4, R2]

This sentiment was echoed amongst a few other rural and regional practices. Since there are often fewer health supports available to patients in these areas, practices commented that they already had an expanded scope of practice before participating in HCH and that they provide additional supports to all their patients. This expanded scope of practice was especially relevant for nurses. A few practices in rural and remote areas felt that the HCH program aligned with their existing model of care, allowed them additional financial flexibility and the ability to be compensated for services that they were already providing:

"*…Because we are working in a remote area here, only those who are in chronic condition. We are already doing this one, even those who are not Health Care Home patients…it doesn't really matter whether they're Health Care Homes or not. They still get the recall.*" [GP, Practice 24, R4]

"*The other thing you have to remember is that we're a rural practice, and so our nurses are used to doing things like people popping in to get their blood pressure checked, and if their blood pressure's normal, the nurses will send them on their way…Our nurses are used to triaging people. So it wasn't, for some of them anyway, it wasn't a big step for them. And our nurses take blood and put drips in and are used to emergency care. Maybe if you were in a city practice, and your nurses weren't as skilled, then there would be more instruction that would be needed. I don't think it was such a big leap for ours really.*" [GP, Practice 4, R5]

"*We spent a lot of time supporting our patients in extra ways, on the phone and so forth anyway. It's not that different that's just because of the way we did it anyway. I spent a lot of time on the phone to [unclear] pharmacies and patients and following things up. I think that individualised care we were giving to a lot of these high needs patients anyway without a name on it.*" [Practice Manager/Nurse, Practice 18, R2]

One practice also commented that rural practices tend to be better at continuity of care compared with their metropolitan counterparts:

"*A few of my colleagues, they work in urban areas…Their question was…how they can implement [HCH]…they say that, look, I am working in the surgery and I know that the patient who comes to see me, that [they] will be seen by another GP on some other day. How it will be implemented in the urban areas…Because the difference comes if you are working in an urban area where the GP is there but the patients are changing. In rural area[s]…[the] same patient] is coming to see the same GP.*" [GP, Practice 24, R4]

Some interviewees felt that the bundled payment may better serve practices in rural and remote areas. Practices and PHNs commented on the advantages of having certainty of funding and for clinical staff to work at the top of their scope:

"*…the way that general practice is funded from MBS it doesn't set practices up to the top of the scope. It just doesn't. MBS doesn't allow for that to happen. It's a*

system that's built on that foundation…When you are out in remote you have to do it. You don't have a GP, so your nurses are specialist nurses because they have to be. [Allied health professionals] are specialists because they have to be…If we want that kind of work to happen in general practice [in rural and remote areas] the funding model has to be reviewed to allow people to work to scope and be paid for it…They need to look at and review the MBS system and look at bulk funding services and giving them flexibility so that they can incentivise their workers, their staff so that they can pay people who have the skills and they can retain that staff." [PHN 8, Interview, R5]

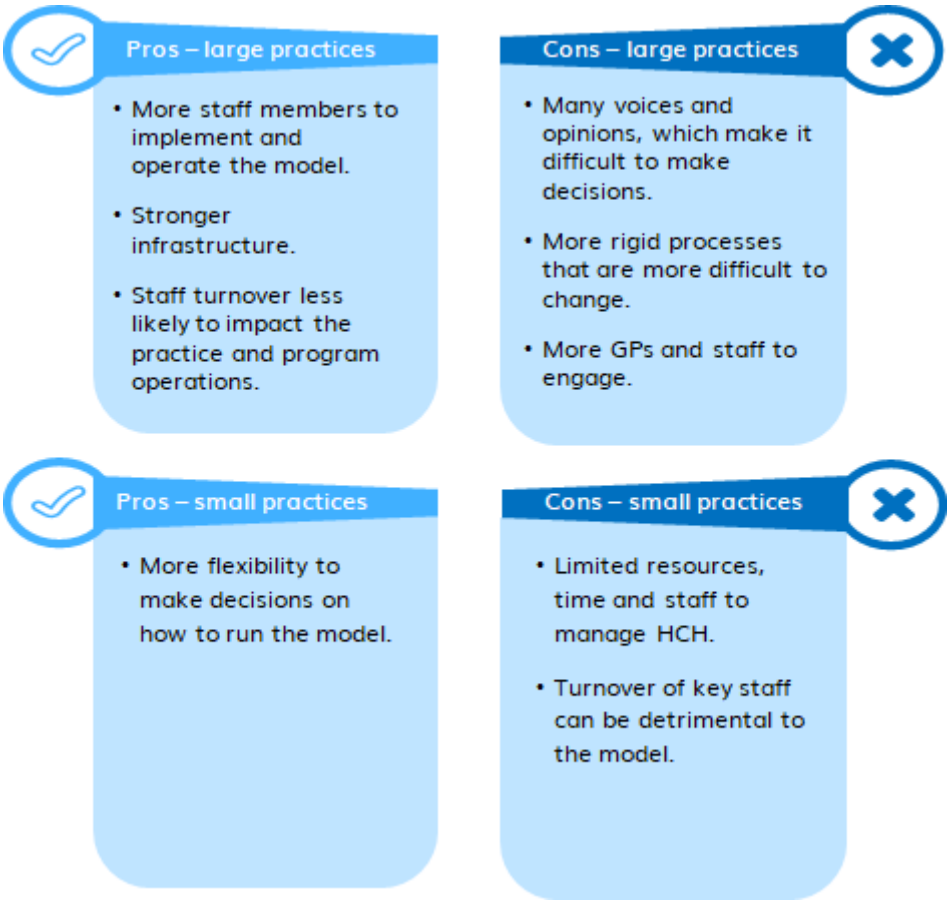
"*There are a couple of examples of practices where they've actually lost GPs and only [had] nurses to maintain the Health Care Homes program with the oversight of a remote GP… if you've got a smaller community with no GP or a community nurse, that can probably help to build up that relationship with the nurse a little bit more.*" [GP, Practice 7, R5]

"*…we've actually got one practice remaining in the Health Care Homes, who doesn't actually have a GP at the moment. So, for them, being enrolled in the Health Care Homes is actually a massive benefit. They've only got one patient, but for that one person, it's making a difference because it's providing their funding model to be able to continue to provide chronic disease care for that patient, which they otherwise wouldn't be able to provide at all. And that's been done, obviously, under the supervision of a remote GP, but it has allowed a greater level of care for that one patient, as opposed to the others in their practice.*" [PHN 6, Interview, R5]

Small vs large practices

Practices identified advantages and disadvantages of operating HCH in small versus large practices. Figure 23 summarises these.

Figure 23: Advantages and disadvantages reported by practices of operating HCH in small and large practices



Source: Case studies R5 Mar–May 2021.

Larger practices speculated that small practices would find implementation of the model difficult given their own experiences:

> *"But imagine a solo practice. I don't know how they did it. I really don't because it would be so difficult, and I think they're still struggling now. I went to a workshop a couple of weeks ago with [the PHN] and [the solo GP practice] are struggling because they have to do it on their own. Whereas we've got a lot of support and help and people doing different things to get us through it and we found that we were struggling."* [GP, Practice 1, R2]

> *"Also, the practice size comes to the fact. The tiny little practices, the poor little solo GPs, are far too busy just trying to keep their head above water to have time to think about that."* [GP, Practice 12, R4]

Small practices confirmed difficulties, which included lack of resources and reliance on one or two individuals:

> *"But that's one of the problems I had, which is just a side-line because we're such a small practice. In a bigger practice, losing one of the key players probably wouldn't be an issue if the program was up and running. But it would be an issue for us in our practice…,I needed to be here to run the program, so I haven't taken a holiday this year…I've been sitting here because I'm still trying to work out what we want to do with the program…You don't need to be big to run this sort of program. You can run this in a small practice, it's just been very difficult for us to do."* [GP, Practice 17, R2]

> *"It's a difficult program at this stage. We need more help to run this program successfully. We need some more help."* [GP, Practice 21, R4]

PHNs also observed that implementation was easier for the large practices:

> *"The larger practices, I'm finding, had time because they implemented the email address, the phone dedicated, the telehealth. They didn't have to pay, they had their IT systems all schmick. Where the smaller practices don't have that. They haven't got that infrastructure, basically. The online care portal, that was an issue for some of them with internet access, but the larger practices, I feel, went with it a lot easier."* [PHN 10, Interview, R5]

Whilst larger practices often had more resources and staff to implement and operate HCH, they struggled with being able to make changes as quickly due to the many decision-makers involved:

> *"You get to this size practice, all right, with multiple owners…and it's enormously difficult to actually make some kind of practice change, I find."* [GP, Practice 12, R2]

> *"it can work in a practice this size, when the majority of the doctors are on board. And if you were to try and implement it in a big practice, you'd have to have little hubs. You'd have to split it into three at least."* [Practice Manager, Practice 11, R4]

Regardless of practice size, PHNs and practices reinforced that strong leadership, staff buy-in and the scale of HCH patients were integral to program success.

Corporate vs independently-owned practices

Similar to practice size, interviewees felt that there were advantages and disadvantages to operating HCH in corporate versus independently-owned practices. In some instances corporate practices were also large practices and independently-owned practices were usually small or medium-sized; therefore, there was some level of overlap when comparing experiences based on practice size and ownership.

Similar to larger practices, the advantages of operating HCH in a corporate practice predominantly revolved around additional staff members and resources to support HCH implementation and ongoing program operations:

> *"…we're lucky because we're a corporation and we've got a team of people that are working on different things that are providing me with stuff to then pass on,*

and we've got the [practice managers] that can do things locally." [Clinical Services Manager, Practice 1, R2]

The disadvantages included the larger number of decision-makers involved, less direct communication channels and more established processes that are harder to change:

> "*I think as [a corporate practice] as who we are, we have tried to really support this and make it an easier process and create the things that we needed to…But it's still… we're just getting nowhere.*" [Clinical Services Manager, Practice 1, R2]

> "*In a larger corporate practice, everything goes through the practice software. So, at my old practice…for every patient, I had to put through two billings each month. One for the practice, the amount that the practice got to keep, and one for the doctor. And then, you had to buddy up the doctors…it gets very complicated.*" [Practice Manager, practice 11, R4]

> "*…it all comes back to the issue of how it all started. If you've got a practice that are corporate level or owner level, you've got onboard without engaging or talking about it with their doctors, straight up, they're not aware. They don't know anything about it. They're not onboard.*" [PHN 1, interview, R2]

Practices with high vs low patient enrolments

Practices with very low numbers of enrolments reported issues with being able to have the flexibility that the bundled payment was designed for to introduce new or different supports for patients, and difficulties with maintaining the model given that it was such a small part of their practice. These issues have been described in other parts of this report.

14

Staff experience

Box 21: Chapter summary

Staff experience with HCH differed substantially across practices. Only about one third of staff who had been employed at their practice before the introduction of HCH reported their role had changed due to the practice's participation in the program. Among those who reported a change in role, the majority reported that they delegated more responsibility to others. This was more common among GPs. Most staff also reported they were delegated more responsibility, and consistent with above, this was less common among GPs. Administrative staff and practice managers mainly reported changes in administrative tasks, with some administrative staff taking on roles in educating people about HCH. Some nurses reported an increase in their scope of practice, particularly in relation to chronic disease management and stronger relationships with patients.

Approximately half of the staff who completed the staff survey reported the practice was "busy but reasonable", and over 30% reported it was "busier than reasonable", but this was not significantly different between survey rounds.

In the round 5 survey, staff reported positively on seven statements about their work environment, with approximately 90% indicating they agreed with each of the positive statements. This was only slightly higher than in round 1 (baseline). Responses to the practice survey in round 5 indicated there was either no (24.7%), small (26.0%) or moderate (24.7%) improvement in job satisfaction due to HCH being implemented in the practice. The most rewarding aspect of the model for staff was working towards improved health outcomes for patients, along with the ability to build rapport and establish stronger relationships with patients.

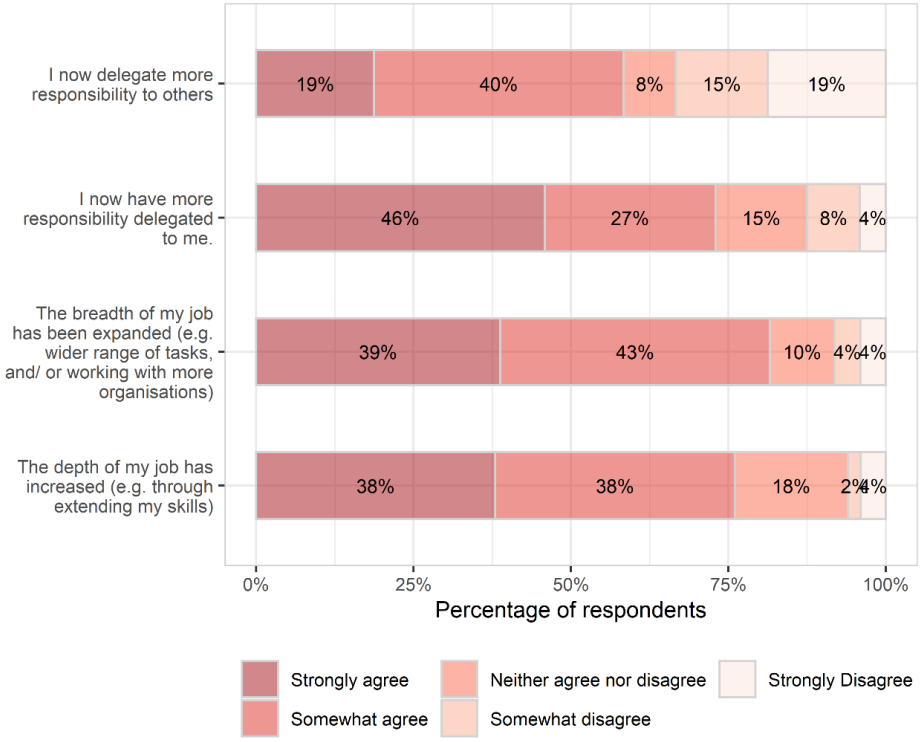
Overview

Staff were surveyed shortly after the start of HCH (round 1) and at the end of the trial (round 5). Questions included staff perspectives on their roles in the practice, leadership and job satisfaction.

Among the 182 staff who completed the survey in round 5, 19% (n=35) started work at the practice after the HCH program started and 35% (n=63) reported there had been no change to their role. Other staff reported either that their role changed but not due to HCH (19%, n=34) or their role changed because of or related to the HCH program (27%, n = 50).

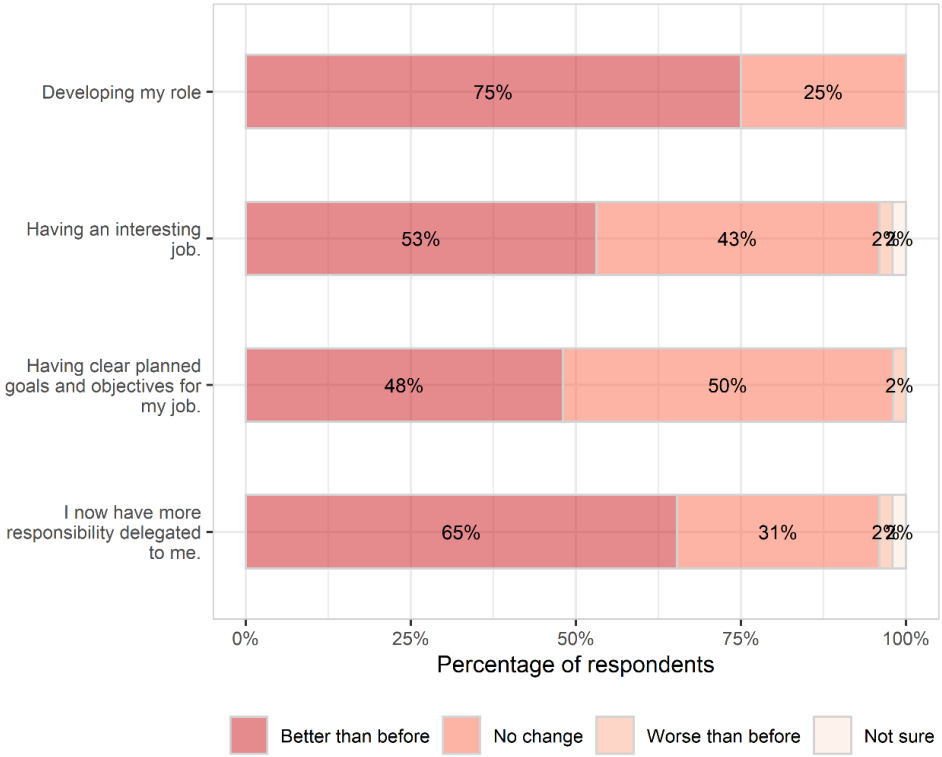
Figure 24 shows the distribution of responses from the 50 staff who indicated their role had changed about how it had changed. A high proportion indicated they either strongly agreed or somewhat agreed that the depth of their job increased (76%), the breadth of their job expanded (80%), they delegated more responsibility (56%), or they were delegated more responsibility (70%). Many also reported they had clear planned goals and objectives (48%), an interesting job (54%), a developing role (75%), and more responsibility delegated to them (67%) (Figure 25).

Figure 24: Change in staff members' role in the practice since HCH start



Source: Staff survey R5 Mar–May 2021, question 23C.

Figure 25: Change of aspects of job since start of HCH in practice



Source: Staff survey R5 Mar–May 2021, question 23E.

Staff were asked "Which number below best describes the atmosphere in your practice?", with possible responses of "1 Calm" to "5 Hectic, chaotic" (Table 35). Just over 50% of staff

considered the atmosphere of their practice to be "3 Busy, but reasonable" with another 30% scoring slightly higher (that is, busier). There was little change between the round 1 and round 5 surveys, with slightly more staff reporting scores of 4 or 5 in round 5 (39% in round 5 vs 33% in round 1), but the difference between rounds was not statistically significant (p = 0.10). GPs were more likely to report the atmosphere in the practice was between "1 Calm" and "3 Busy but reasonable" (78%), but other staff also selected these categories more than 50% of the time (Table 36). There was also no statistically significant change in this dichotomised version of the scale between round 1 and round 5 (66% vs 61%; p = 0.162).

Table 35: Staff assessment of atmosphere within the practice, longitudinal analysis

	All responses			Responses by staff in practices responding to R1 & R5		
	R1	R5	p-value	R1	R5	p-value
Percentage responding 1 "Calm" to "3 Busy but reasonable"	281 (66%)	111 (61%)	0.162	190 (66%)	94 (60%)	0.202

Source: Staff survey R1 Dec 2017–Jul 2018 and R5 Mar–May 2021, question 24.

Table 36: Staff assessment of atmosphere within the practice by staff type

	Percentage responding "1 Calm" to "3 Busy but reasonable"				
	Total	GP	Nurse	Manager	Other
Which number below best describes the atmosphere in your practice?	111 (61%)	28 (78%)	24 (53%)	28 (56%)	31 (61%)

Source: Staff survey R5 Mar–May 2021, question 24.

Table 37 shows responses by staff to a set of positive statements about their job and work environment. Approximately 90% of staff reported they agree or somewhat agree to these statements. The responses were also high in the round 1 survey. There was no significant change between the two rounds although levels of agreement to each of the statements in round 5 were slightly higher.

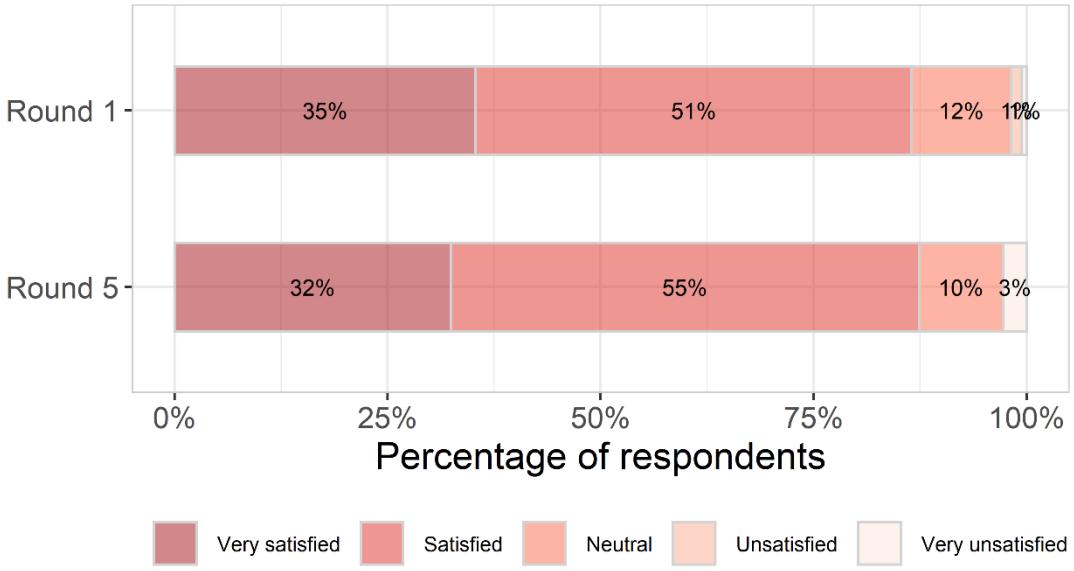
Table 37: Staff responses to questions on their work environment

Statement	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree
My work gives me a feeling of personal accomplishment	82 (45%)	90 (50%)	7 (4%)	2 (1%)	
I have the tools and resources to do my job well.	83 (46%)	79 (44%)	11 (6%)	7 (4%)	1 (1%)
My job makes good use of my skills and abilities.	88 (49%)	71 (39%)	16 (9%)	5 (3%)	
I have clearly defined quality goals.	85 (47%)	76 (42%)	14 (8%)	4 (2%)	1 (1%)
The practice/service leaders visibly demonstrate a commitment to quality.	88 (49%)	79 (44%)	11 (6%)	1 (1%)	
The practice/service leaders keep employees informed about matters affecting us.	81 (45%)	80 (44%)	13 (7%)	3 (2%)	3 (2%)
The practice/service leaders strongly support practice change efforts.	80 (45%)	80 (45%)	15 (8%)	2 (1%)	2 (1%)

Source: Staff survey R5 Mar–May 2021, question 23.

In the round 5 survey, over 50% of staff reported they were satisfied with their job, and more than 30% indicated they were very satisfied (Figure 26). There was no statistical difference between round 1 and round 5 in the percentage who reported being very satisfied (p = 0.249) or satisfied or very satisfied combined (0.926).

Figure 26: Staff rating of satisfaction with their job



Source: Staff survey R5 Mar–May 2021, question 25.

In the final practice survey for the evaluation, practices were asked to assess the overall impact of HCH on staff experience and satisfaction. Most practices (46 or 70%) reported an improvement in staff experience and satisfaction during HCH compared with previously (Table 38). This is consistent with the results of the staff surveys. There was also a significant difference in the responses of practices that had enrolled 50 or more patients compared with

practices that had enrolled less than 50 patients, with the former more likely to report improvements in staff experience/ satisfaction.

Table 38: Practice assessment of the overall impact of HCH (compared with usual care) on staff experience/satisfaction

Practice subgroup	Practice assessment of improvement compared with usual care					chi-square
	Significant	Moderate	Small	None	Worse	
All R5 practices	9 (14%)	18 (27%)	19 (29%)	18 (27%)	2 (3%)	17.297 (p=0.001)
Practice enrolled <50 patients	1 (3%)	6 (18%)	9 (27%)	16 (48%)	1 (3%)	
Practice enrolled 50+ patients	8 (24%)	12 (36%)	10 (30%)	2 (6%)	1 (3%)	

Source: Practice survey R5, Mar–May 2021, question 26.

Practices were also asked about the main ways in which staff experience and satisfaction improved during as a result of HCH. Practices reported that the most rewarding aspect of the model for staff was working towards improved health outcomes for patients, along with the ability to build rapport and establish stronger relationships with patients under the model.

The next most reported aspects of the model leading to improved staff satisfaction were increased scope and/or responsibility of individual staff members and a sense of autonomy in their work (particularly nurses). In their responses practices mentioned "empowerment", "feeling involved" and "admin involvement in the patient journey". Opportunities to undergo training and upskilling was one of the features of HCH that practices indicated as contributing to staff being able to have increased responsibilities/scope. Results from the staff survey support the finding that staff were given more responsibility. Among the staff who indicated that HCH had changed their roles, 92% of GPs strongly agreed or somewhat agreed they delegated more responsibility to others. The percentage was lower for the other staff types: 50% for nurses, 46% for practice managers and 37% for administrative staff. In terms of having more responsibility delegated to them, 45% of GPs strongly agreed or somewhat agreed compared with 78% for nurses, 77% for practice managers, and 100% for administrative staff.

The flexibility created by the bundled payment was reported as improving the experience/satisfaction of GPs. This was through the ability to provide care in a different way (for example, phone consults and scripts or referrals without a consultation) and being able to delegate tasks to other team members.

Team-based care was commonly associated with feeling pride in one's work and feeling valued. This was through the contributions individuals were making within the team and feedback from other team members, particularly GPs.

A few practices noted negative staff experiences and increased stress from increased administration associated with the program.

The sections that follow provide additional analyses from the quantitative and qualitative data for the main staff types with general practice.

General practitioners

In the initial stages of implementing HCH, practices actively worked on encouraging GPs in their practice to participate. Some practices stated that, with time and some convincing, GP engagement increased, which made it easier to roll out the model within their practices. Others cited ongoing difficulties engaging their GPs due to concerns and limited information on some aspects of the model, such as workload, how it would work with their patients in practice, or the financial impact of the bundled payment. Their lack of engagement decreased staff engagement and the scale of HCH within some practices, which proved to be a significant barrier during program implementation. For example, practices with only one or two GPs involved in HCH reported issues providing adequate access to their HCH patients when they were unavailable. This problem was exacerbated when the participating GP(s) only worked part-time. In some instances, non-participating GPs were confused about the bundled payment, which made them less inclined to treat HCH patients when the participating GP was away or unavailable:

> "*It has been quite difficult as a practice with this program because our lead GP that is completing the program is less available. He's only here one day per week now at [this practice], which has become a problem for a lot of our patients because he's just not there and able to take those consultations and have that input and feedback…And then with him not being as available, [patients] being maybe moved to other GPs because it's a requirement in that they have to be seen, that became a problem.*" [Practice Manager, Practice 22, R5]

> "*It's very difficult when you've got a practice with 15 doctors and there's only one GP enrolled, seven, 10 patients. And he only works half a day a week. Distributing that care within the care team and then obviously the payments, it's causing some conflict within the GPs in that practice because the GPs will not see the Health Care Homes patients because the doctor's not on until next Wednesday afternoon.*" [PHN 2, Interview, R5]

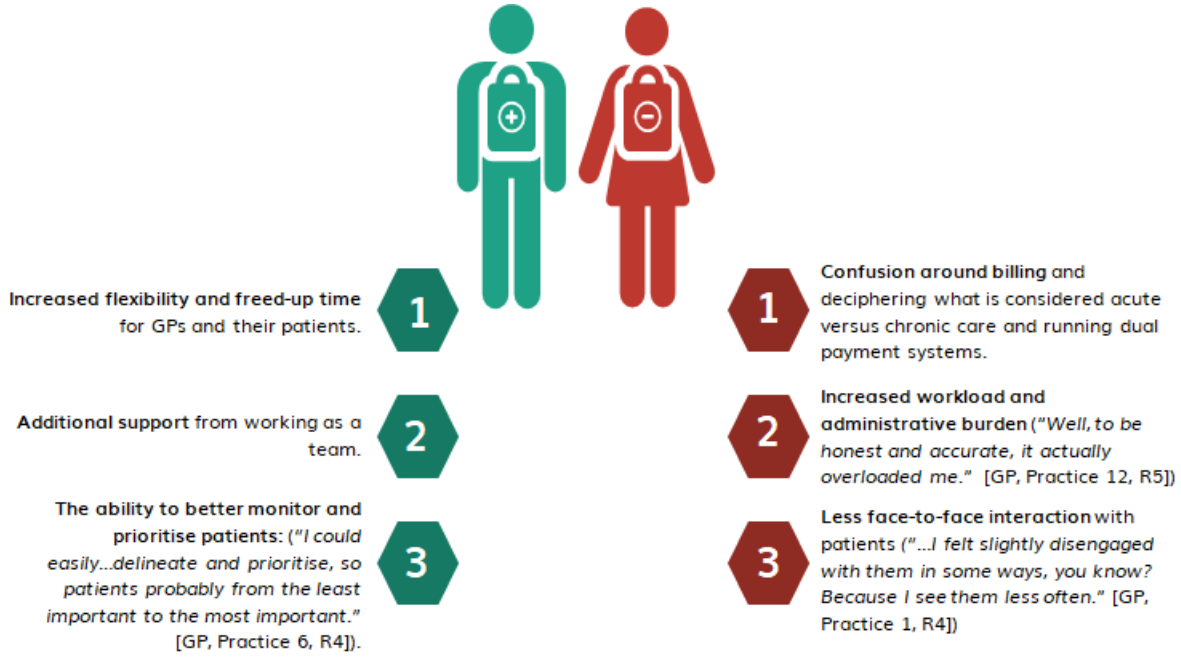
One carer remarked:

> "*Occasionally in emergencies we'll see somebody else because our GP isn't there all of time. And it just gets difficult if we don't see our regular GP. Because I've got to go through the whole scenario of what's happening in relation to why he's there that particular visit…it gets really difficult…that's why I'm pedantic at making regular visits to see our GP so that I don't have to keep on running through it.*" [Carer, Practice 15, R5]

One practice cited the HCH forum that the Department of Health hosted in late 2019 in Melbourne as a catalyst for getting some GPs more interested in the model. But the enrolment period had closed a few months before the forum (June 2019), which made it difficult for some practices to turn the enthusiasm into more patient enrolments. A few interviewees commented that, even with the extension of the enrolment period, the window of opportunity they had to convince GPs was not long enough, and they wished they had more time to engage more of their GPs in the model and recruit more patients.

While many GPs stated that the effect of HCH on their day-to-day responsibilities was relatively minimal, others elaborated on how the program impacted their roles. Figure 27 lists aspects of HCH that that GPs commonly reported as positively and negatively impacting their role.

Figure 27: GPs' perceptions of how HCH impacted their role



Source: Case study interviews, R2 Sept–Oct 2018, R4 Nov 2019–Mar 2020, R5 Mar–May 2021.

Some practices reported in interviews that HCH had the largest effect on their nurses compared with other roles. The model changed nurses' overall scope of practice and increased their involvement in patient care. Sometimes nurses reported limited changes in their roles.

In some instances, practices chose to only involve some of their nurses in HCH. This limited engagement with HCH by other practice staff and often created a high workload for those involved. At the end of the trial, some practices reflected that they should have involved their entire nursing staff to spread the responsibility of managing their HCH patients:

> "*... us not involving the full nursing team was a constraint, as in sharing the load a little bit... We mainly have two nurses that just look after the Health Care Homes patients. Going forward, that was probably a mistake. We probably should have had the whole nursing team involved...I think if it continued or kept going, we would actually involve the whole nursing team.*" [Practice Manager, Practice 22, R5]

Practices said that they didn't involve their entire nursing team due to lack of time, concerns around finances and staff turnover.

Several nurses reflected on how increasing their clinical scope and responsibilities as part of HCH impacted their role. Perceived benefits included increased involvement in chronic disease management, stronger relationships with patients, justification of their time with the

bundled payment, more personalised patient care and enhanced patient monitoring and recalls:

> *"It's made me more proactive, I would say…I feel like at the end of the day I'm like, oh, yes…I've done well that day. I've done everything that I could have for my patients."* [Nurse, Practice 10, R5]

> *"I just want to add one more thing to let you know what a positive thing was for our nurse practitioners. They were able to see the chronic disease patients. They didn't have to refer them back to a GP. So, they were able to refer them to the podiatrist and physio, dietician, things like that."* [Nurse, Practice 6, R5]

> *"Well, I don't think [the nurse is] winning in terms of workload but she's aware of the aim and the benefit of the program and she's recognised, with the workload, we discussed with her, she agreed to take on the role. She's being financially reimbursed for her role as well. We're happy for her to dedicate her time to Health Care Home patients only so every week she will dedicate specific days, or day, just purely for her Health Care Homes. And as part of the management, I'm more than willing to assist in terms of other resources."* [Practice Manager, Practice 3, R4]

Despite positive reflections by many nurses, it was acknowledged that the program largely increased nurses' workloads ("*it's a lot of pressure…*" [Nurse, Practice 21, R5]). This increase in workload was especially prevalent during the enrolment period.

Receptionists and administrative staff

Only 8 (15.7%) of the 51 administrative staff who completed the staff survey in round 5, reported their role had changed due to HCH. In interviews, administrative staff largely also reported limited changes to their roles with the introduction of HCH in their practices. This was often because some practices did not actively involve their administrative staff in HCH, or their HCH patients represented only a small part of their practice population:

> *"It has engaged our two administration staff into thinking a little bit more about the processes and so on as well. Although I don't think that we have engaged the admin people to the same degree as perhaps is ideal in the whole model."* [GP, Practice 12, R4]

> *"It's sort of once a month checking in and seeing that the jobs have been done to keep things on track. Yes, it's a very small percentage of my role."* [Executive Assistant, Practice 7, R5]

Where administrative staff were involved in HCH they reported assisting with activities like teaching new staff members about the program and supporting staff with administrative tasks such as billing, or ensuring that any patient issues were dealt with by the appropriate staff member.

A few practices stated the program negatively impacted their reception staff by creating more work and adding another layer of complexity to administrative processes by having different systems for different patients within the practice:

> *"I largely do chronic disease entrants, so I provide admin support, and then falling into the Health Care Homes role just to assist [nurse]. But we had a meet just to talk with [GP] earlier and said that we probably need more of our team to be onboard to help [nurse] and I do it. It's just too much…"* [Administrative Assistant, Practice 7, R4]

> *"I'd say, it added to confusion, particularly for admin team and particularly ones who had been working with us less time. So, if there's a Health Care Homes patient with a request, it would be common for the receptionist taking that request to not know how to redirect it for a Health Care Homes patient compared to not."* [GP, Practice 4, R5]

> *"The biggest thing for my reception staff is the extra workload…because all of a sudden we were having to send the patient a copy of their care plans. Whereas, when they came to the surgery they would take it out so the reception team, their workload increased a lot. Even the scripts, even though we've got the eScripts now but going back 12 months ago, we were faxing scripts. Scripts didn't arrive. It was a nightmare for my reception team. We were I'll say very stressed. And of course, everyone wanted everything like now and sometimes the doctors would wait until they saw a few patients and then would bring over a pile of things for us to do whereas some patients wanted everything five minutes after they hung up."* [Practice Manager, Practice 6, R5]

When discussing the positive impacts of the program on her role, one receptionist felt the program increased her involvement in patient care and enabled her to develop stronger relationships with patients:

> *"It does make you feel a bit more included…It does make me feel a bit more than just a receptionist. Absolutely, you definitely feel more of a medical administrator than just a receptionist."* [Receptionist, Practice 22, R5]

Practice managers

In interviews, practice managers reported varying degrees of involvement in HCH, which is consistent with the staff surveys where only 26% of the 50 practice managers who completed the survey indicated their role had changed as a result of HCH. Several noted limited engagement beyond managing billing for HCH:

> *"I think just more that I probably would like to be more involved personally. I think that I haven't really made a commitment to be that involved."* [Practice Manager, Practice 22, R5]

Others identified themselves as change leaders within their practices and stated that they were the initial drivers of signing up for the trial and were responsible for initiating important aspects of implementation, such as engaging GPs and staff and setting up internal processes:

> *"I was the one that pushed the whole thing… you need someone to head it, you'd have to have the GPs on board, equally on board, to be able to do it."* [Practice Manager, Practice 4, R4]

The degree to which practice managers were engaged in the model when they were not the instigators largely depended on how practice leaders chose to engage their staff in HCH and staff turnover.

Key evaluation question 3: Do patients enrolled in HCH experience better quality care?

The evaluation assessed how the HCH implementation led to enhancements in care planning (including patient and carer involvement in planning), and the extent to which these led to improved patient experience and greater levels of patient activation.

The chapters in this section answer the following sub-questions of key evaluation question 3:

- 3.01 What changes occurred in the quality of chronic illness care provided for patients enrolled in the HCH program, and how did these compare with patients receiving care from practices not enrolled in HCH?
- 3.02 Did patients enrolled in the HCH program have improved access to primary care services, including through alternate ways of accessing the service? How did the use of primary care services change for HCH patients compared with similar patients receiving care from practices not enrolled in HCH? How did use of services from within the HCH practice change? Did the HCH model result in increased continuity in the provision of primary care?
- 3.03 How did the use of secondary care and other community-based services change for HCH patients compared with similar patients in practices not enrolled in HCH? Was there improved coordination of services between primary care and other service providers?
- 3.04 Were the patients enrolled in the HCH program and their families/ carers more engaged in managing patients' health needs? What strategies resulted in the greatest impact on patient activation?
- 3.05 Did patients enrolled in the HCH program report an improved experience of primary care, including coordination of their care and communication with their primary care providers? What were the experiences of patients, carers and families in care planning?
- 3.06 How did the utilisation of hospital services (including emergency care), and entry into aged care change for HCH patients compared with similar patients receiving care in practices not enrolled in HCH?
- 3.07 Which patients benefited from the HCH program? Are the benefits of the HCH program similar for patients across categories of disadvantage? Was patient participation in the program maintained through the trial? Were movements of patients between risk tiers appropriate? What does this tell us about the potential of the HCH program to improve access to primary health care, particularly for vulnerable and disadvantaged populations, and improved equity in health outcomes?
- 3.08 What preliminary evidence is there of the impact of the HCH program on health outcomes?

15

Changes to chronic disease management

Box 22: Chapter summary

This chapter explores how HCH practices managed patients' chronic diseases, using data extracted from the practices' clinical management systems. This includes recording of clinical measures and risk factor information and access to different modalities of care within the practice. Patients enrolled in the HCH program were compared with "comparator" patients, who were patients at practices not participating in HCH who had similar demographic and health characteristics to HCH patients in the period before enrolling in HCH. The main findings are:

- Compared with the pre-enrolment period, HCH patients tended to have more encounters with practice GPs following enrolment while comparator patients tended to have fewer GP encounters.
- Following enrolment, the proportion of HCH patients having service encounters with a practice nurse increased. This information was not available for comparator patients.
- A small proportion of HCH patients had encounters with podiatrists, dieticians and psychologists within the HCH practice. This proportion changed very little following enrolment. This information was not available for comparator patients. As shown in Chapter 18 (p. 220), the proportion of patients where a claim under Medicare for allied health services increased for HCH patients but decreased for comparator patients.
- Greater proportions of HCH than comparator patients had clinical measures, including blood pressure, lipid tests, HbA1c and kidney function tests, recorded in the two years following enrolment.
- A larger proportion of HCH patients than comparator patients received an annual influenza vaccination.
- Among HCH patients with type 2 diabetes who had records of blood pressure and HbA1c tests, the proportion of patients achieving targeted blood pressure (<130/80mmHg) and targeted glycaemic control (HbA1c ≤7%) within the two years following enrolment did not change.

Differences in process of care between HCH and comparator patients seen in the post-enrolment period may be attributable to HCH but may also reflect a focus on improving quality and completeness of data as part of the HCH trial. This included an awareness that data would be used for risk stratification and care plans (including shared care plans). Practices were also aware that data would be collated for evaluation purposes and preparation of benchmark reports comparing the completeness of data.

Measuring changes in chronic disease management

Changes in management of chronic conditions within HCH practices were assessed using data extracted from the HCH practices' clinical management systems. The sources of these data and method used to harmonise these data are described in Chapter 2 of Volume 3 of the evaluation report.

This practice data extracts included information on recorded diagnoses and risk factors, clinical measures, results of pathology tests, and the reason for and type of encounter. Data on HCH patients were extracted via third party software, including Pen CS, POLAR and Sonic Clinical Service's Independent Practitioner Network, with regular updates throughout the evaluation. Practices participating in HCH were required to provide data until their withdrawal from the trial or the end of the trial in June 2021. Among the 165 practices participating in the trial that enrolled patients, 151 provided data extracts. Of these, extracts from 117 practices contained flags for HCH enrolled patients that enabled examination of chronic disease management. Among enrolled patients, 96.1% had follow-up data for at least one year, 92.2% had follow-up data for at least two years and 9.3% had data for more than three years. Importantly, practice data only captured services provided to the patient within that specific practice, and not services that they may have received from other practices.

To understand how changes in chronic disease management could be attributed to participation in HCH, data from 403 GP practices that were not participating in the HCH program were obtained through NPS MedicineWise's MedicineInsight program. "Comparator" patients were identified from these non-HCH practices through matching to HCH patients, so they had similar pre-enrolment demographic characteristics, health status (morbidities, use of medicines, results of blood pressure, HbA1c and estimated glomerular filtration rate or eGFR), processes of care, encounters with GPs, and were attending similar types of GP practices (according to socio-economic disadvantage and geographic location). Full details of the data sources and methods for matching HCH and comparator patients are reported in Chapter 3 of Volume 3 of the evaluation report. Appendix 5 of Volume 3 also presents detailed tables of changes in chronic disease management.

For many HCH patients, the process of recruitment may have been spread over several months before enrolment in the program. As such, some of the processes of care being measured (for example, recording of chronic conditions and risk factors for cardiovascular disease) is expected to be high in the pre-enrolment period – because this information was required for risk stratification purposes. Similar pre-enrolment patterns of care will be seen in the selected comparator patients because they were matched to HCH patients based on these patterns of care in the pre-enrolment period. Differences in process of care between HCH and comparator patients seen in the post-enrolment period may be attributable to HCH but may also reflect a focus on improving quality and completeness of data as part of the HCH trial. This included an awareness that data would be used for risk stratification and care plans (including shared care plans). Practices were also aware that data would be collated for evaluation purposes and preparation of benchmark reports comparing the completeness of data.

In addition to the results reported below, the Department of Health undertook a compliance audit of a sample of practices that assessed the appropriateness of the services provided to

HCH patients. The audit found that the services provided were aligned with, and appropriate for, their level of complexity and tier level in the majority of cases reviewed.

Impact of COVID-19

In the final practice survey, practices were asked about the impact of COVID-19 on how regularly they undertook clinical or preventative measures/screening for HCH patients. These included measures such as HbA1c, cholesterol/lipids, prostate cancer screening, and recording of lifestyle factors such as smoking.

Between April and June 2021 when they were responding to the services, 37% of practices said that the pandemic had reduced the regularity of these measures/screening for a while and they were still catching up to achieve usual regularity (Table 39). COVID had no effect on these measures for 29% of practices and 25% of practices said that although the pandemic reduced their regularity, they had subsequently caught up and were at pre-pandemic regularity.

Table 39: Impact of COVID-19 on regularity of clinical or preventative measures/screening for HCH patients

Impact	No. of practices (%)
Reduced the regularity of these measures/screening for a while, and still catching up to achieve usual regularity.	27 (37.0%)
COVID-19 had no effect – continued measurement/screening with the same regularity as usual.	21 (28.8%)
Reduced the regularity of these measures/screening for a while, but subsequently caught up and are now achieving our usual regularity.	18 (24.7%)
Don't know/ no response	7 (9.6%)
Total	**73 (100%)**

Source: Practice survey R5, Mar–May 2021, question 23.

This suggests that COVID-19 influenced the chronic disease management of some HCH patients. A report of practices from which comparator patients were drawn for this evaluation[74] confirms that there were also changes for these practices during the pandemic, including to clinical encounters, prescribing, medical test requests and influenza vaccine rates.

Encounters with health care providers within the practice

GP practice clinical management systems record a patient encounter when the patient's file is accessed and the type of user who accessed the record (for example, GP, practice nurse, podiatrist). Not all these instances will reflect a face-to-face consultation with the patient, and they may include a variety of services, for example, accessing or updating the patient record, writing a prescription, a telehealth consultation, recalling a patient or issuing a reminder. There may also be differences in how encounters with specific types of practitioners (for example, practice nurses) are recorded and identified within different clinical

[74] NPS MedicineWise. (2021). *General Practice Insights Report July 2019–June 2020 including analyses related to the impact of COVID-19*. https://www.nps.org.au/assets/NPS/pdf/GPIR-Report-2019-20.pdf

management systems and data providers. Therefore, encounters with practice nurses maybe under-represented in the data. Among 165 HCH practices that enrolled patients, data extracted from 106 practices (64.2%) contained data on the type of health care provider involved with the event. While the data do not capture the full specifics of the modality and length of each encounter, it provides an indication of patient utilisation of services within that particular practice.

Encounters with GPs

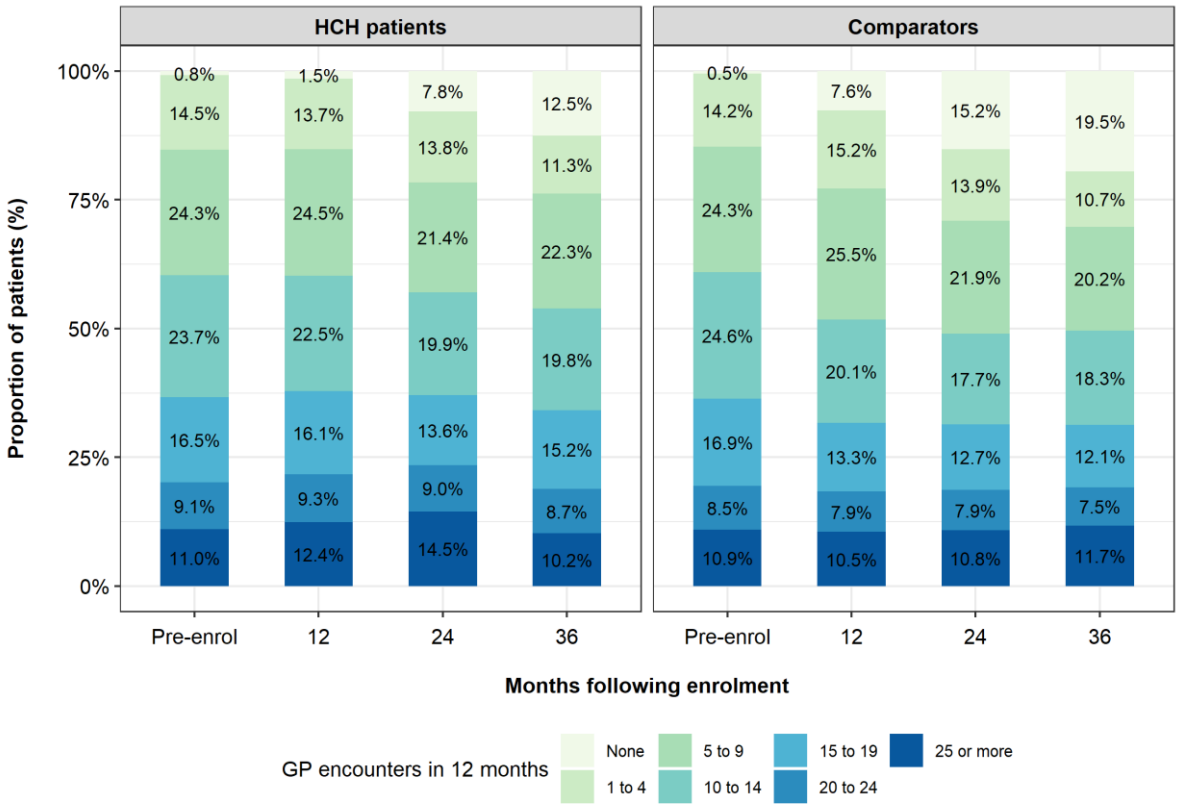
Overall, most HCH patients had frequent encounters with a practice GP in the 12 months before enrolment (mean 13.4 encounters, std 9.9, median 11). Almost all HCH patients (84.7%) had five or more GP encounters within the practice, almost two thirds of HCH patients (60.4%) had 10 or more GP encounters, just over one third of HCH patients (36.7%) had 15 or more GP encounters, and one fifth (20.1%) of HCH patients had 20 or more GP encounters (Figure 28).[75]

In the year following enrolment HCH patients had a similarly large number of GP encounters as in the pre-enrolment period (mean=13.7, std=10.3). About 84.8% of HCH patients had five or more GP encounters, and 60.3% had at least 10 or more GP encounters. A slightly higher proportion of HCH patients had a very larger number of GP encounters in the year following enrolment: 37.8% had 15 or more GP encounters, and 21.7% had 20 or more GP encounters. A small proportion of HCH patients (1.5%) did not have a record of any GP encounters in the year following enrolment.

Comparator patients were matched to HCH patients on pre-enrolment numbers of GP encounters and had a mean of 13.3 (std 9.7, median 11) encounters in the 12 months before enrolment. However, they tended to have fewer GP encounters than HCH patients in the following year (mean=12.0, std=10.2). After one year, only three quarters of comparator patients (77.2%) had five of more GP encounters within the practice; just over half (51.7%) had 10 or more GP encounters; less than one third (31.6%) had 15 or more GP encounters; and 18.4% had 20 or more GP encounters. A much larger proportion of comparator patients than HCH patients had no GP encounters recorded in the period following enrolment of the matched HCH patients (Figure 28).

[75] These estimates can't easily be reconciled with estimates based on the patient surveys. In the patient surveys wave 1, around 58% of patients reported 5 or more GP consultations in the last six months, dropping to 38.3% in wave 3 (see Volume 3, Appendix 7).

Figure 28: Number of encounters with GP among HCH patients and comparators



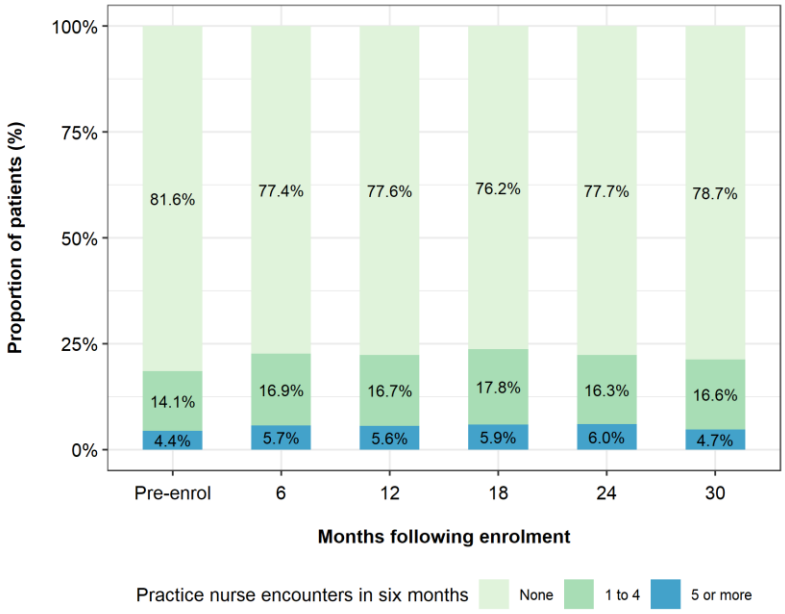
Notes: People with length of follow-up shorter than respective yearly anniversaries were excluded from analyses.
Source: Data extracted from 106 HCH practices (Pen CS, POLAR) and 403 comparator practices (MedicineInsight).

Encounters with practice nurses

Encounters with practice nurses can be identified in the practice data for six-monthly (not annual) periods. These data are reported for HCH practices only, as sources of practice extracts may use different approach to derive practice nurse role.

In the six months before enrolment, 18.4% of HCH patients had at least one recorded encounter with a practice nurse, with a mean number of encounters of 0.8 per patient (std=3.5, median: zero encounters). A small proportion (4.4%) having five or more encounters. At six months following enrolment, the proportion of patients having an encounter with a practice nurse increased to 22.6% and remained stable thereafter (Figure 29).

Figure 29: Number of encounters with practice nurses, among HCH patients only



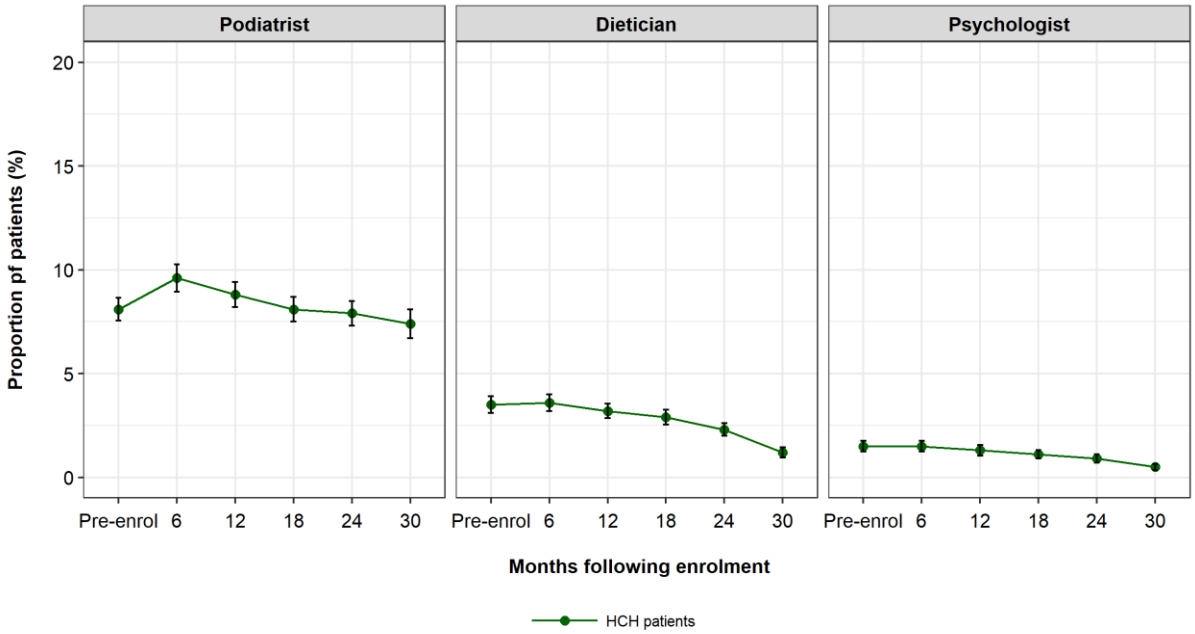
Notes: People with length of follow-up shorter than the respective six-monthly measurement period were excluded from analyses.
Source: Data extracted from 106 HCH practices (Pen CS, POLAR).

Encounters with allied health practitioners

Information about encounters with allied health staff including psychologists, podiatrists and dieticians were derived for six monthly periods. This information was not available for comparator patients. A small proportion of HCH patients had encounters with podiatrists (8.1%), dieticians (3.5%) and psychologists (1.5%) in the practice in the six months before enrolment. These proportions remained low at six months following enrolment (9.6%, 3.6% and 1.5% respectively) and thereafter (Figure 30).

These data should be interpreted cautiously. The data on the staffing profile of HCH practices shows that there is only limited direct employment of allied health staff in most practices (see Volume 3 Appendix 8). About 60% of HCH practices reported employment of allied health or related staff (including Aboriginal Health Practitioners). On average, allied health staff made up 9% of FTE in these practices. Additionally, practices frequently refer patients to allied health staff outside the practice. As shown in Chapter 18 (p. 220), the proportion of patients where a claim under Medicare for allied health services increased for HCH patients but decreased for comparator patients.

Figure 30: Encounters with podiatrists, dieticians and psychologists, among HCH patients only



Notes: People with length of follow-up shorter than respective six-monthly measurement period were excluded from analyses.
Source: Data extracted from 106 HCH practices (Pen CS, POLAR).

Monitoring of clinical measures

Overall, a high proportion of HCH patients had key clinical measures recorded in the clinical management system of their HCH practice – including blood pressure, blood lipid tests, HbA1c in patients with type 2 diabetes, and kidney function in patients with type 2 diabetes or cardiovascular disease.

Annual recording of this information tended to be higher in the pre-enrolment period than during the patient's enrolment in HCH for all of these measures. This likely reflects increased collection of clinical information for recruitment and enrolment of patients into HCH.

Annual recording of each clinical measure decreased slightly in HCH patients across every subsequent 12-month period following enrolment. It is likely some of this decrease is related to the impact of COVID-19. While the level of recording was lower for measures taken at six-monthly than yearly intervals, not all patients would be expected to receive these tests (for example, HbA1c) every six months.

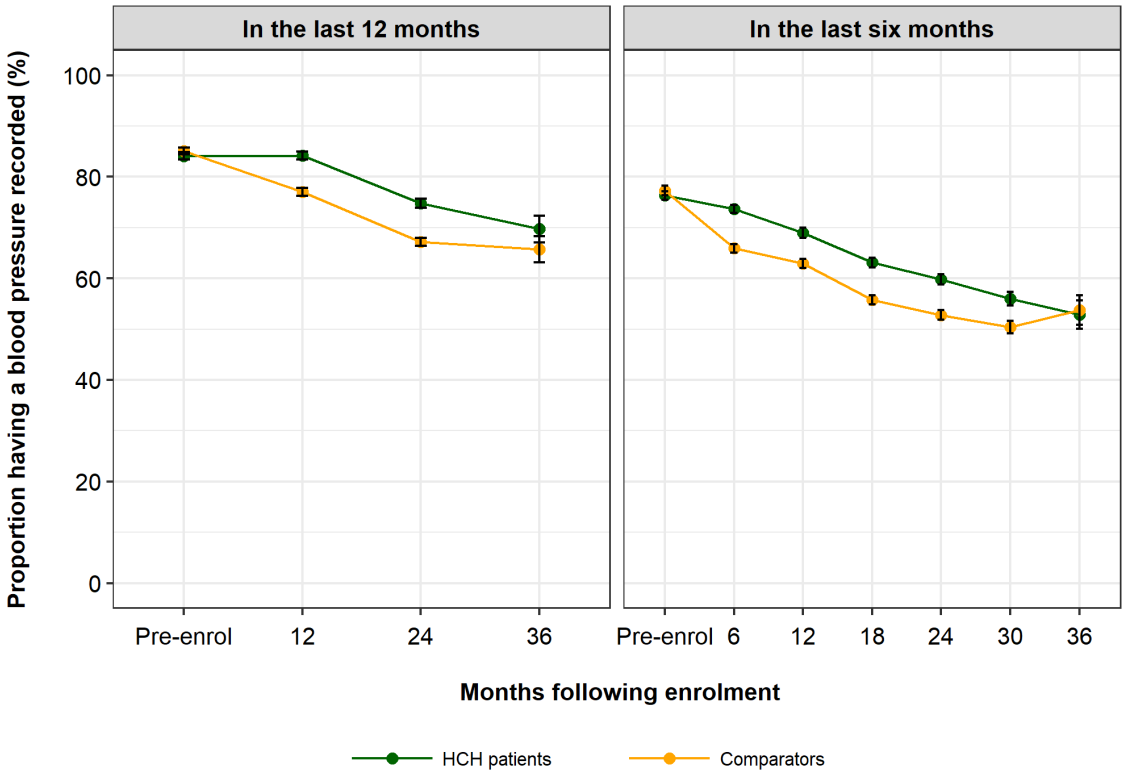
Comparator patients were matched so they had similar levels of recording of clinical measures in the pre-enrolment period to HCH patients. However, for the first two years of enrolment in the program, the proportion of HCH patients with each clinical measure recorded was significantly higher than for comparator patients.

Recording of blood pressure

Most HCH patients had a recording of blood pressure in the year before enrolment (84.1%), with three quarters having a recording in the six months prior (76.3%). There was no change in annual blood pressure recording after one year (84.2%), followed by a slight drop at year

two (74.8%) and three (69.7%). While similar to HCH patients in the pre-enrolment period, significantly lower proportions of comparator patients had their blood pressure recorded at both 12 months (77.0%) and 24 months (67.2%) following enrolment. Recording of blood pressure at six monthly intervals was similarly higher in HCH than comparator patients for most of the follow-up period (Figure 31).

Figure 31: Recording of blood pressure among HCH and comparator patients

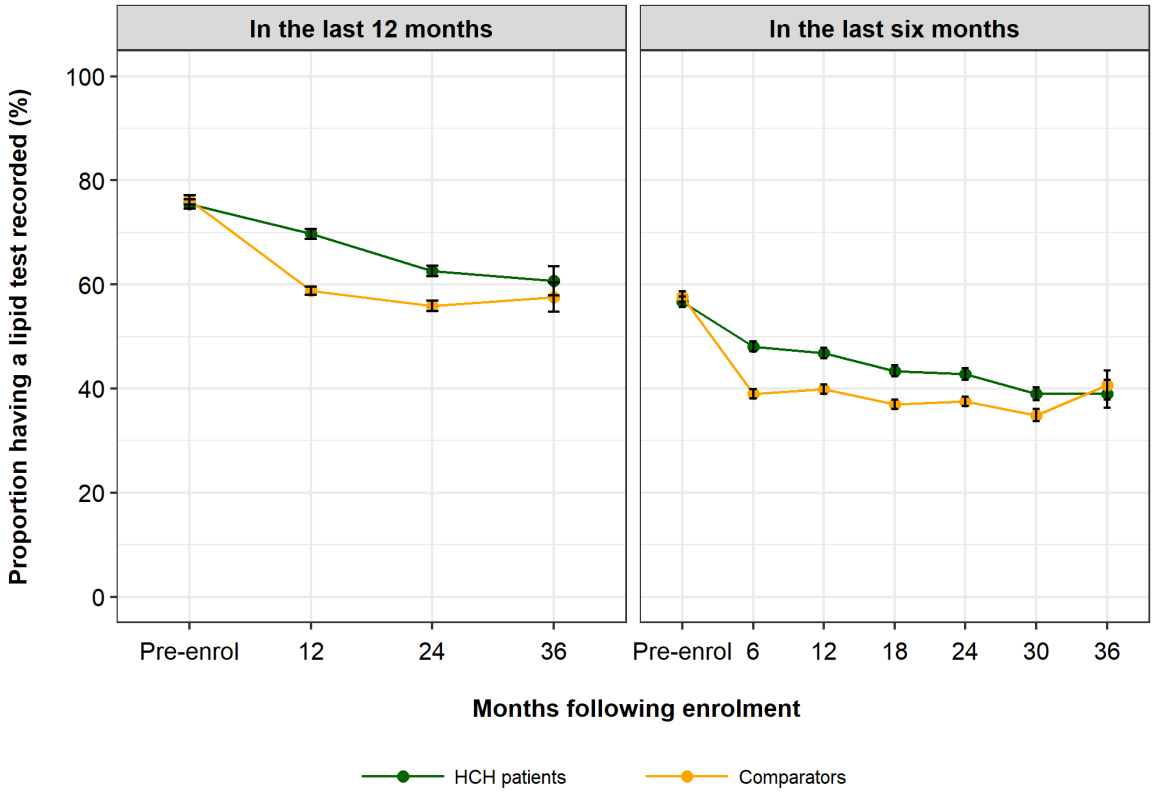


Notes: People with length of follow-up shorter than respective yearly and six-monthly measurement period were excluded from analyses.
Source: Data extracted from 117 HCH practices (Pen CS, POLAR, and Sonic) and 403 comparator practices (MedicineInsight).

Recording of blood lipid tests

Three quarters of HCH patients had a recording of a blood lipid test in the year before enrolment (75.5%), with about half (56.7%) having a recording in the six months prior There was a slight decrease in annual blood lipid test recording after one year (69.7%) and two years (62.6%) following enrolment. While similar to HCH patients in the pre-enrolment period, significantly lower proportions of comparator patients had a blood lipid test at both 12 months (58.8%) and 24 months (55.9%) following enrolment. Blood lipid test recording at six monthly intervals was similarly higher in HCH than comparator patients for most of the follow-up (Figure 32).

Figure 32: Recording of lipid tests among HCH and comparator patients

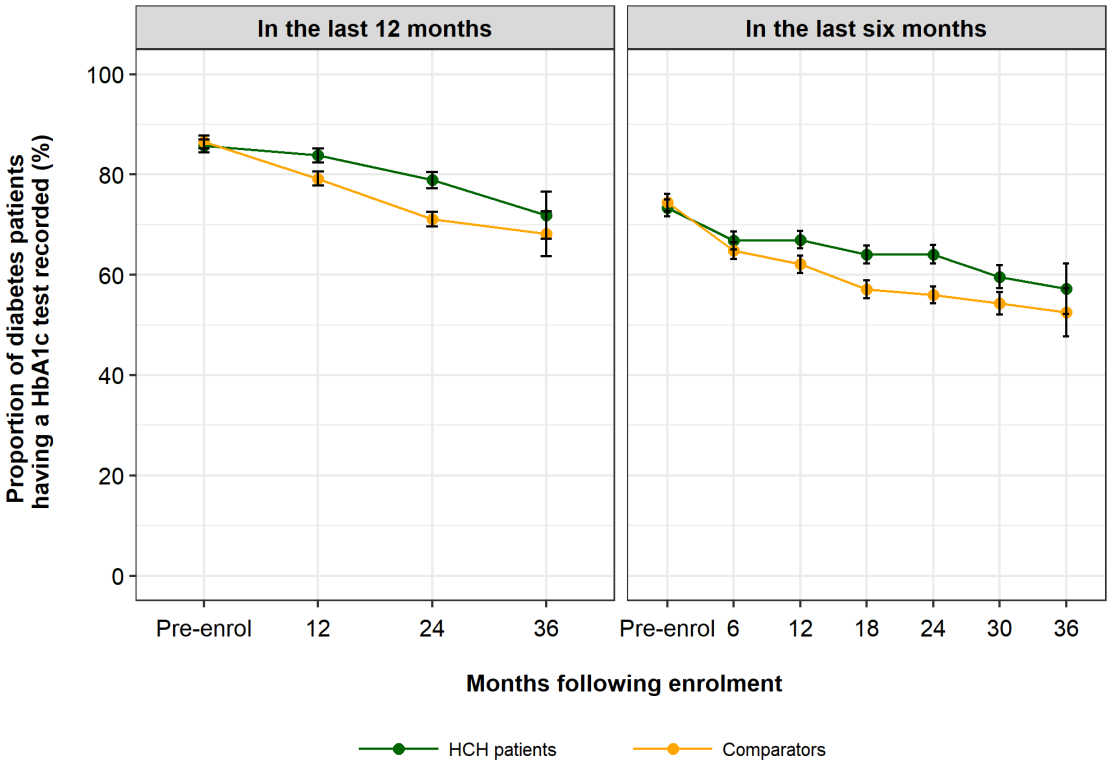


Notes: Lipid tests include total cholesterol, HDL, LDL or triglycerides. People with length of follow-up shorter than respective yearly and six-monthly measurement period were excluded from analyses.
Source: Data extracted from 117 HCH practices (Pen CS, POLAR, and Sonic) and 403 comparator practices (MedicineInsight).

Recording of HbA1c tests

Most HCH patients with type 2 diabetes had a recording of HbA1c in the year before enrolment (85.7%), with about three quarters having a recording in the six months prior (73.3%). There was small decrease in annual recording of HbA1c after one year (83.8%) and a slightly larger drop at two years (78.9%) following enrolment. While similar to HCH patients in the pre-enrolment period, significantly lower proportions of comparator patients with type 2 diabetes had an annual recording of HbA1c at both 12 months (79.2%) and 24 months (71.1%) following enrolment. Recording of HbA1c at six monthly intervals was similarly higher in HCH than comparator patients for all of the follow-up (Figure 33).

Figure 33: Recording of HbA1c test among HCH and comparator patients with type 2 diabetes

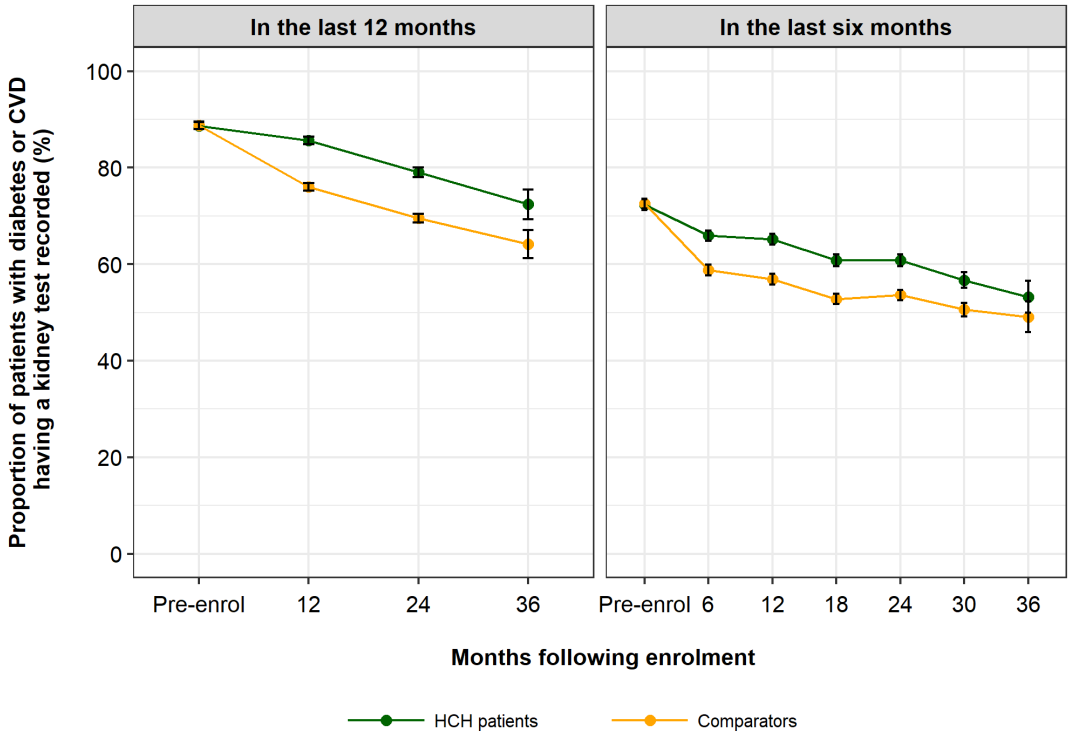


Notes: People with length of follow-up shorter than respective yearly and six-monthly measurement period were excluded from analyses.
Source: Data extracted from 117 HCH practices (Pen CS, POLAR, and Sonic) and 403 comparator practices (MedicineInsight).

Recording of kidney function tests

Recording of kidney function test was measured for patients with type 2 diabetes or cardiovascular disease and included tests for estimated glomerular filtration rate (eGFR), creatinine and albumin-creatine ratio. Most HCH patients had a recording of a kidney function test in the year before enrolment (88.7%), with about three quarters having a recording in the six months prior (72.3%). There was very little decrease in annual recording of a kidney function test after one year (85.6%) and a slightly larger drop at two years (79.0%). While similar to HCH patients in the pre-enrolment period, significantly lower proportions of comparator patients had an annual recording of a kidney function test at both 12 months (76.0%) and 24 months (69.5%) following enrolment. Recording of a kidney function test at six monthly intervals was similarly higher in HCH than comparator patients for all of the follow-up (Figure 34).

Figure 34: Recording of kidney function test among HCH and comparator patients with type 2 diabetes or cardiovascular disease



Notes: Kidney function tests included estimated glomerular filtration rate (eGFR), creatinine and albumin-creatine ratio. People with length of follow-up shorter than respective yearly and six-monthly measurement period were excluded from analyses.
Source: Data extracted from 117 HCH practices (Pen CS, POLAR, and Sonic) and 403 comparator practices (MedicineInsight).

Monitoring of risk factor information

Overall, a large proportion of HCH patients had key risk factor information recorded in the clinical management system of their HCH practice – including body height and weight (for calculating BMI), smoking status, as well as risk factors needed to perform a cardiovascular risk assessment (age, blood pressure and cholesterol).

Annual recording of this information tended to be higher in the pre-enrolment period than during the patient's enrolment in HCH for all these measures. This likely reflects increased collection of patient's medical history for recruitment and enrolment of patients into HCH.

Recording of each risk factor in HCH patients remained high throughout the program, although decreased slightly across every subsequent 12-month period following enrolment. While the level of recording was lower for measures taken at six-monthly than yearly intervals, not all patients would be expected to have all these risk factors recorded every six months.

Recording of smoking status was unable to be measured for comparator patients. Comparator patients were matched so they had similar levels of recording to HCH patients of other risk factor information in the pre-enrolment period. Within the first two years of HCH

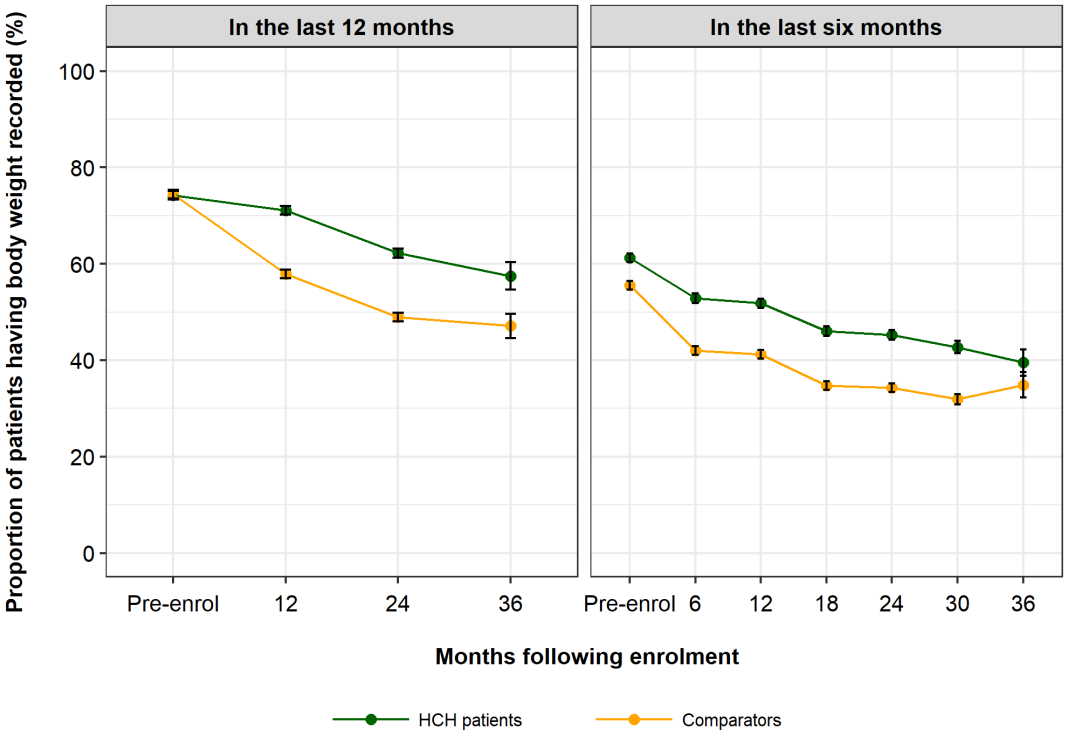
patients enrolling in the program, the proportion of comparator patients with this risk factor information recorded was significantly lower than for HCH patients.

Body mass index (BMI)

Both body height and weight, required for calculating BMI, are recorded within the GP practice's clinical management system. At the time of enrolment, the majority of HCH patients (84.9%) had height recorded in the practice's data, which increased to 90.7% after one year and 93.4% after year three. Height was similarly recorded for the majority of comparator patients (85.1% at enrolment; 87.2% after one year and 90.7% after year three).

Three quarters of HCH patients had a recording of body weight in the year before enrolment (74.2%), with about two thirds having a recording in the six months prior (61.2%). There was a slight decrease in annual recording of body weight after one year (71.1%) and two years (62.2%) following enrolment. While similar to HCH patients in the pre-enrolment period, significantly lower proportions of comparator patients had their body weight recorded at both 12 months (57.9%) and 24 months (48.9%) following enrolment. Body weight recording at six-monthly intervals was similarly higher in HCH than comparator patients for most of the follow-up (Figure 35).

Figure 35: Recording of body weight among HCH and comparator patients



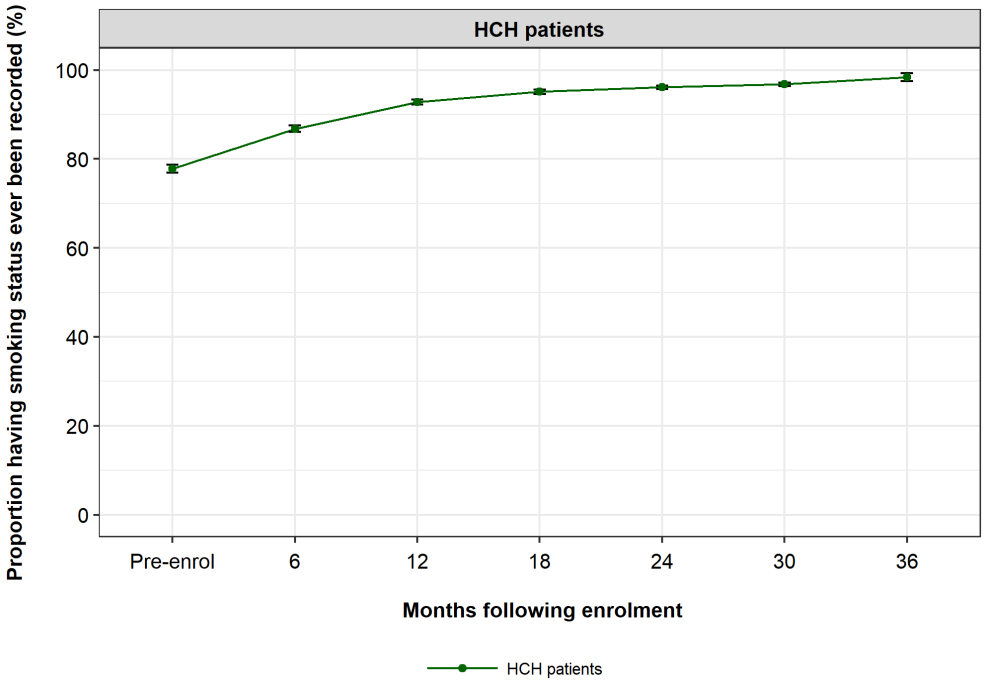
Notes: People with length of follow-up shorter than respective yearly and six-monthly measurement period were excluded from analyses.
Source: Data extracted from 117 HCH practices (Pen CS, POLAR, and Sonic) and 403 comparator practices (MedicineInsight).

Smoking status

While patients' smoking status is recorded in the GP practice's clinical management system, only the latest recorded value is stored. (While some clinical management systems are now retaining multiple recordings of these values, they are usually not extracted.) As such, it was only possible to measure changes in the recording of smoking where data from the clinical management system was continually extracted throughout the evaluation. No historical data on smoking status were available for comparator patients.

At the time of enrolment, the majority of HCH patients (77.8%) had their smoking status recorded in the practice clinical management system. After one year this increased dramatically (92.8%), and after two years almost all HCH patients had their smoking status recorded (96.1%) (Figure 36).

Figure 36: Smoking status ever recorded, HCH patients only



Source: Data extracted from 117 HCH practices (Pen CS, POLAR, and Sonic).

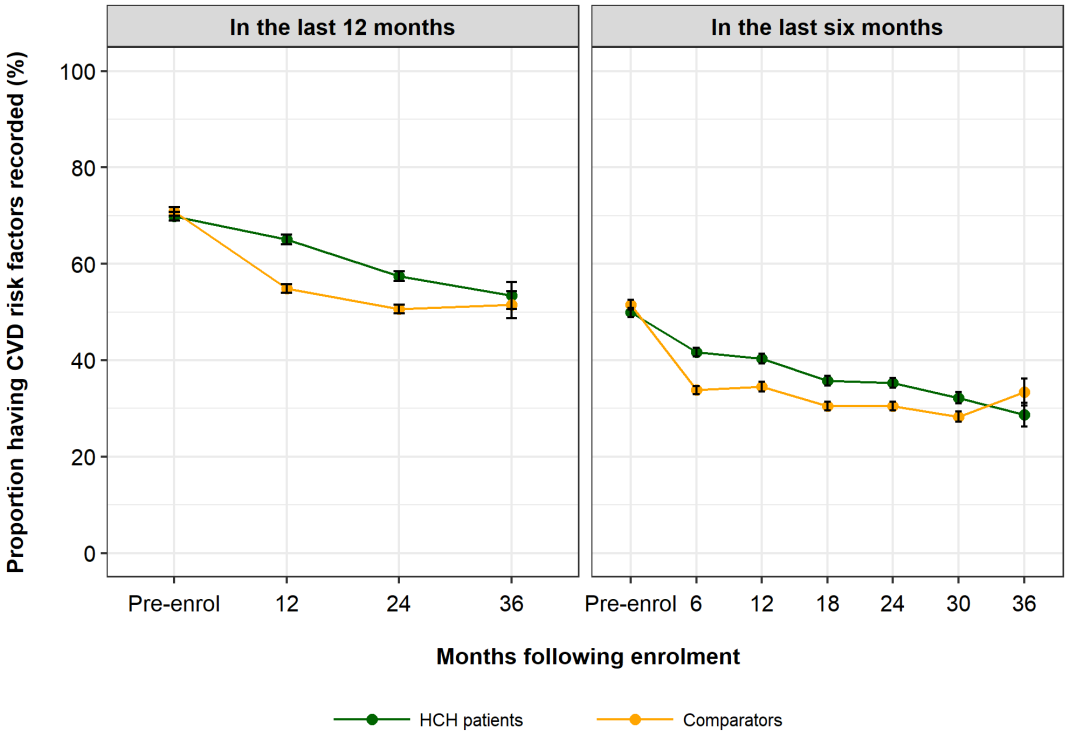
Cardiovascular risk assessment

Risk factors required for performing a cardiovascular risk assessment include age, smoking status, blood pressure and cholesterol. As recording of smoking status was only able to be measured for a subset of HCH practices where data from the clinical management system was continually extracted throughout the evaluation, recording of all of the other measures (age, blood pressure and cholesterol) were measured for this evaluation.

In the year before enrolment, slightly over two thirds of HCH patients (69.9%) had a recording of all three risk factors (age, blood pressure, cholesterol) to assist cardiovascular risk assessment, with about half having a recording in the six months prior (49.9%). There was a slight decrease in annual recording of these three measures after one year (65.1%) and a slightly larger drop at two years (57.4%) (Figure 37).

While similar to HCH patients in the pre-enrolment period, significantly lower proportions of comparator patients had an annual recording of these three risk factors, at both 12 months (54.9%) and 24 months (50.6%) following enrolment. Recording of these three risk factors at six monthly intervals was similarly higher in HCH than comparator patients for most of the follow-up period (Figure 37).

Figure 37: Recording of three CVD risk factors (age, cholesterol and blood pressure) among HCH and comparator patients



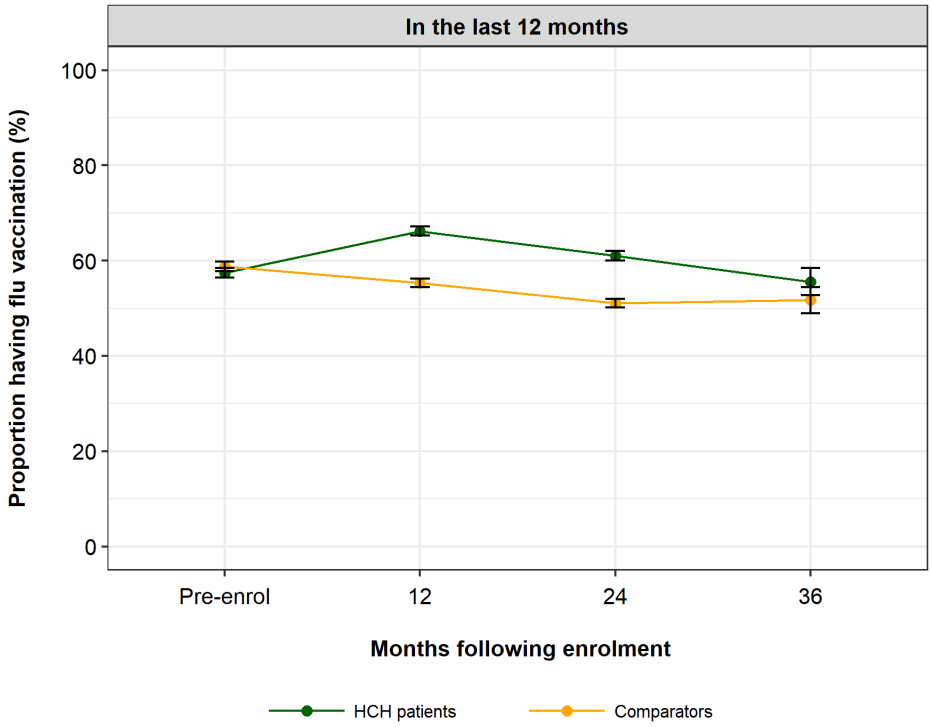
Notes: People with length of follow-up shorter than respective yearly and six-monthly measurement period were excluded from analyses.
Source: Data extracted from HCH practices (Pen CS, POLAR, and Sonic) and comparator practices (MedicineInsight).

Immunisation against influenza

Over half of HCH patients had a record of immunisation against influenza at the HCH practice in the year before enrolment (57.4%). This increased to two thirds of HCH patients after one year of enrolment (66.2%) and dropped slightly after two years (61.0%).

Comparator patients were matched so that the proportion with a record of influenza immunisation was similar to HCH patients in the pre-enrolment period. However, significantly lower proportions of comparator patients had a record of immunisation against influenza at both 12 months (55.3%) and 24 months (51.1%) following enrolment (Figure 38).

Figure 38: Immunisation against influenza, HCH and comparator patients



Notes: People with length of follow-up shorter than respective anniversaries were excluded from analyses.
Source: Data extracted from 117 HCH practices (Pen CS, POLAR, and Sonic) and 403 comparator practices (MedicineInsight).

Changes in blood pressure, glycaemic control and renal function

Changes in value of the most recent blood pressure and HbA1c recording were examined amongst patient with type 2 diabetes while changes in eGFR results were assessed in those with type 2 diabetes or cardiovascular disease. Overall, most HCH patients with type 2 diabetes did not have clinical measures within typical target levels for blood pressure and glycaemic control before enrolment. Among those who had a measure, less than half (40.2%) had blood pressure lower than 130/80 mmHg and a little over half (56.1%) had HbA1c ≤7%. Among HCH patients with type 2 diabetes or cardiovascular disease about a third (35.1%) had reduction in estimated glomerular filtration rate (eGFR <60 mL/min/1.73m^2). These reflect complex chronic health circumstances among those enrolled into HCH program.

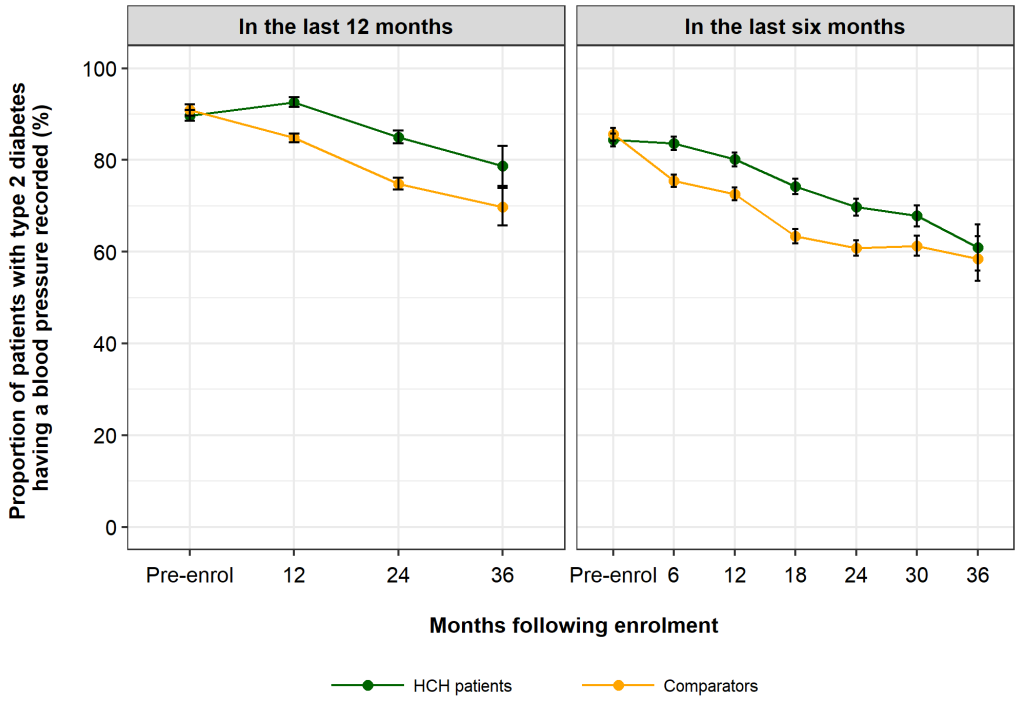
Not all HCH patients had new test results recorded throughout the period of the evaluation (see "Monitoring of clinical measures" above). As such changes in these clinical measures need to be interpreted with caution. It is possible, for example, that patients with chronic conditions or outlying values in these tests (for example, uncontrolled hypertension) were those selected for continued monitoring and testing (for example, more regular blood pressure monitoring). This may have particularly been the case during COVID-19, when patients with less complicated chronic conditions may have received remote models of care (for example, telehealth services).

Comparator patients were matched with HCH patients, so they had similar levels of recording of these clinical measures in the pre-enrolment period, as well as similar values for the results of these tests. As with HCH patients, not all comparator patients had new tests recorded throughout the period of the evaluation, and so changes in the values of tests recorded must be interpreted with caution. Broadly, comparator patients had only small changes in the recorded values of test results over the follow-up period, which were not always consistent with those seen for HCH patients.

Blood pressure test results

Among HCH patients with a diagnosis of type 2 diabetes, annual recording of blood pressure was high in the year before enrolment (89.7%) and remained at both year one and year two following enrolment. Comparator patients with type 2 diabetes were matched with HCH patients on the recording of blood pressure in the pre-enrolment period. Comparator patients had significantly lower proportions having blood pressure recorded during the follow-up period (Figure 39).

Figure 39: Recording of blood pressure in HCH and comparator patients with type 2 diabetes



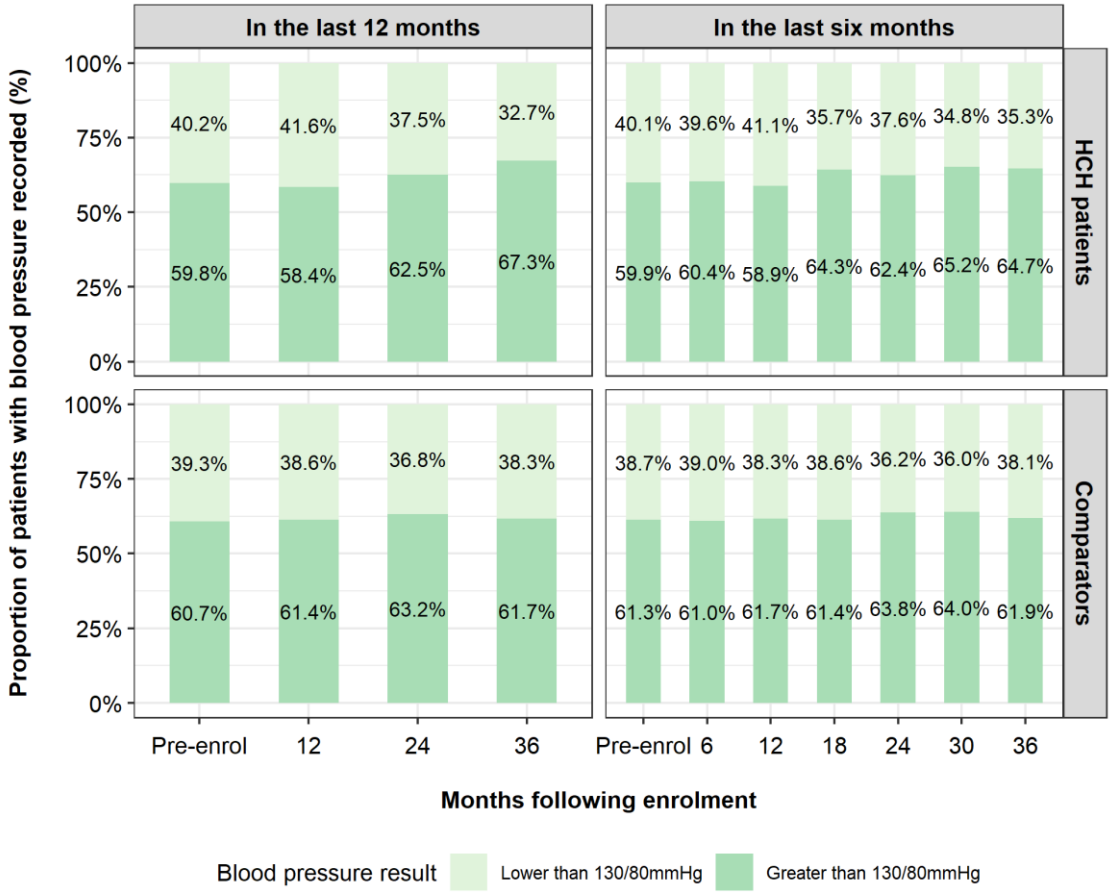
Notes: People with length of follow-up shorter than respective yearly and six-monthly measurement periods were excluded from analyses.
Source: Data extracted from 117 HCH practices (Pen CS, POLAR, and Sonic) and 403 comparator practices (MedicineInsight).

Among those who had blood pressure measured, about two in five HCH patients (40.2%) had blood pressure lower than 130/80 mmHg. Following enrolment, this proportion increased slightly after one year (41.6%) and decreased after two years (37.5%) and three years (32.7%) (Figure 40).

Comparator patients with type 2 diabetes were matched with HCH patients in the pre-enrolment period (whether blood pressure was recorded and blood pressure results). Among

comparator patients who had blood pressure measured, proportions with blood pressure lower than 130/80mmHg was 38.6% at year one, 36.8% at year two and 38.3% at year three following enrolment (Figure 40).

Figure 40: Blood pressure results in HCH and comparator patients with type 2 diabetes who had blood pressure recorded



Notes: People with length of follow-up shorter than respective yearly and six-monthly measurement period were excluded from analyses.
Source: Data extracted from 117 HCH practices (Pen CS, POLAR, and Sonic) and 403 comparator practices (MedicineInsight).

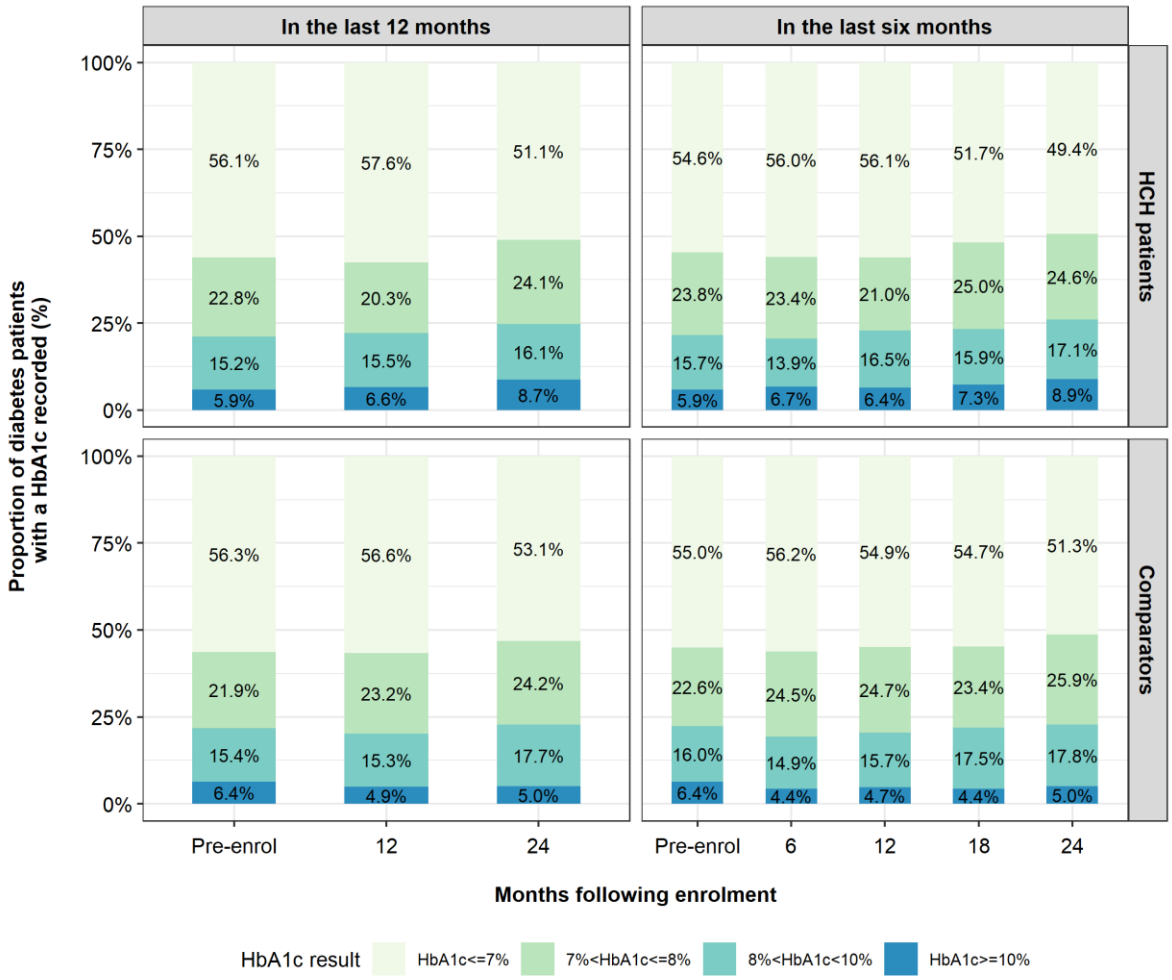
HbA1c test results

Recording of HbA1c in HCH patients with type 2 diabetes was generally high in the year before enrolment (85.7%) and slightly decreased at year one and year two following enrolment. Recording of HbA1c among matched comparator patients were significantly lower in periods following enrolment (Figure 33).

Among HCH patients who had a record of HbA1c test, over half (56.1%) had HbA1c≤7% (a common target value for management and prevention of diabetic complications). Following enrolment, the proportion of HCH patients with type 2 diabetes where the last HbA1c result was ≤7% increased slightly after one year (57.6%) and decreased after two years (51.1%) (Figure 41). Data for HbA1c levels at three years were not shown for confidentiality purposes, given the small number of patients with three years follow-up and having high HbA1c.

Comparator patients were matched with HCH patients in the pre-enrolment period (whether HbAc1 was recorded and HbA1c results). Among comparator patients who had a HbA1c result recorded, 56.3% had HbA1c≤7% in a year before enrolment. In the first year following enrolment, this proportion was 56.6% and declined at the second year (53.1%) (Figure 41).

Figure 41: HbA1c results in HCH and comparator patients with type 2 diabetes who had a HbA1c test recorded

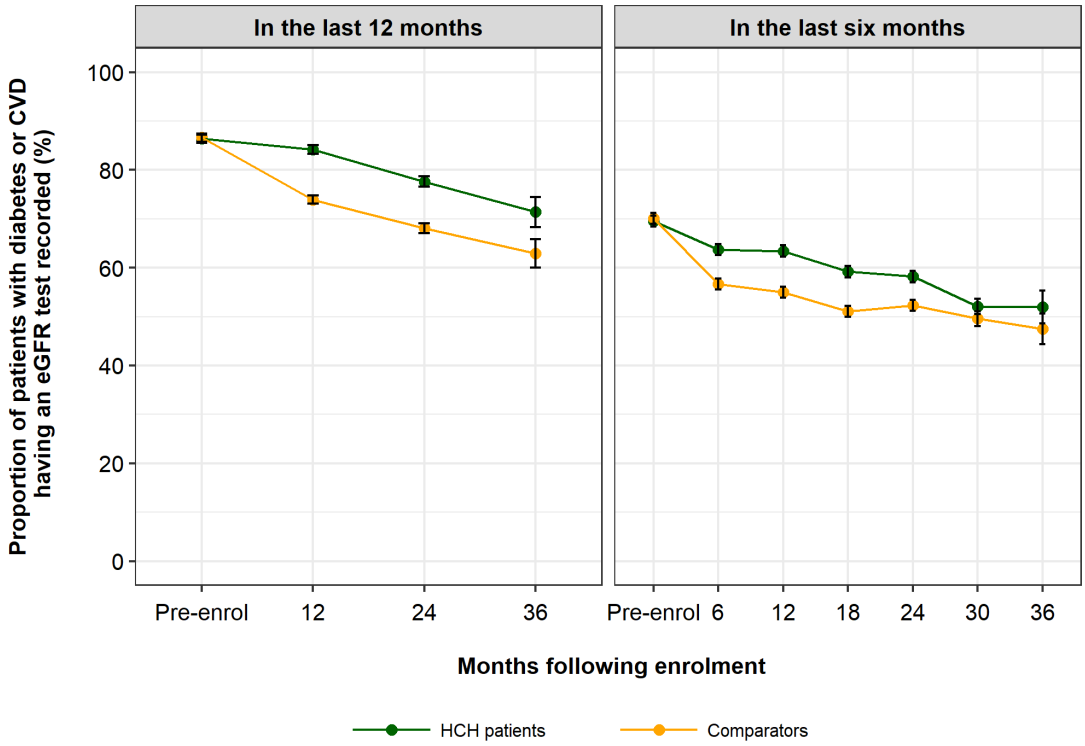


Notes: People with length of follow-up shorter than respective yearly and six-monthly measurement period were excluded from analyses.
Source: Data extracted from 117 HCH practices (Pen CS, POLAR, and Sonic) and 403 comparator practices (MedicineInsight).

Estimated glomerular filtration rate results

Most HCH patients with type 2 diabetes and/or cardiovascular disease (86.4%) had a recording of an estimated glomerular filtration rate (eGFR) test in the year before enrolment. This declined slightly at year one following enrolment (84.2%) and further declined at year two (77.6%) and year three (71.4%). Recording of eGFR in matched comparator patients were significantly lower in the follow-up periods (Figure 42).

Figure 42: Recording of eGFR test in HCH and comparator patients with type 2 diabetes or cardiovascular disease

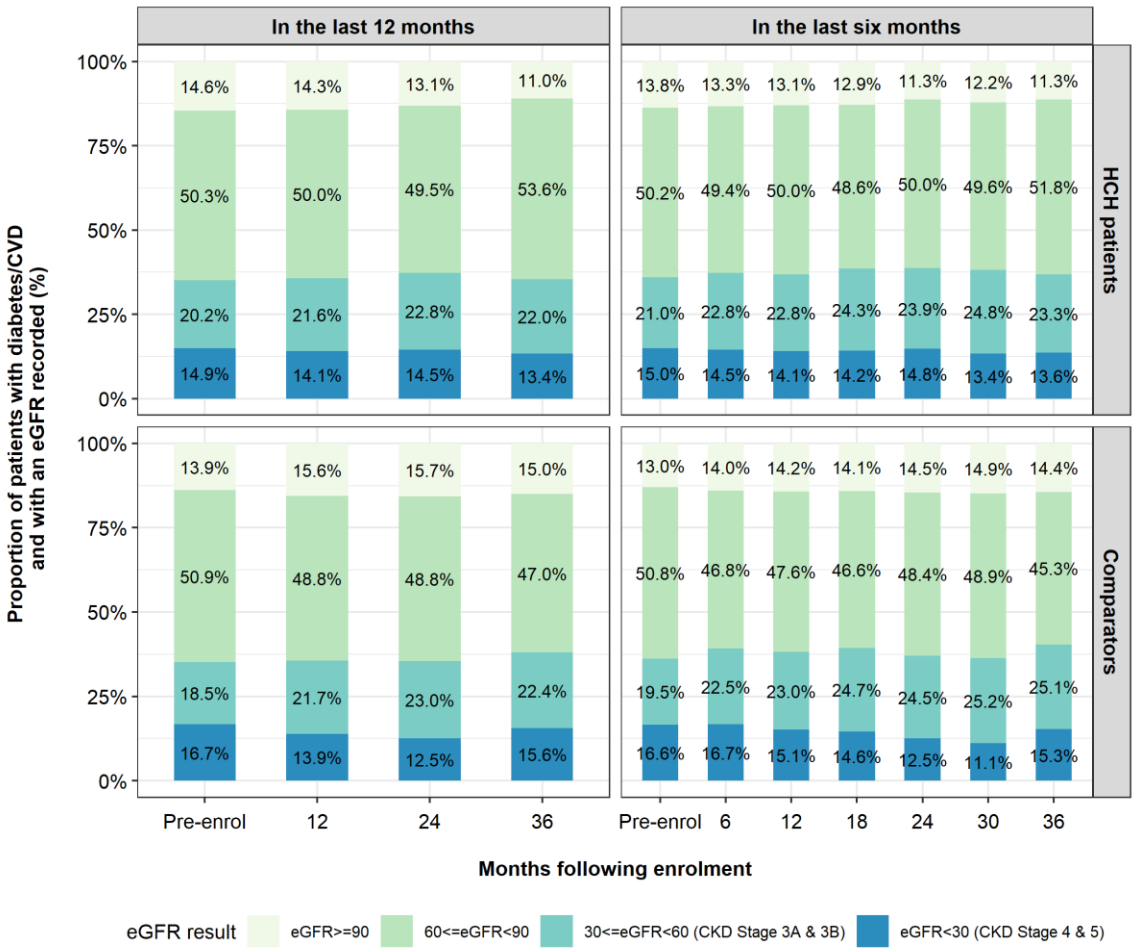


Notes: People with length of follow-up shorter than respective yearly and six-monthly measurement period were excluded from analyses.
Source: Data extracted from 117 HCH practices (Pen CS, POLAR, and Sonic) and 403 comparator practices (MedicineInsight).

Among enrolled patients who had an eGFR record, in the 12 months before enrolment, 20.2% had an eGFR result in the range of chronic kidney disease (CKD) Stage 3A (45≤eGFR<60 mL/min/1.73m^2) or CKD Stage 3B (30≤eGFR<45); and 14.9% had eGFR in the range of CKD Stage 4 (15≤eGFR<30) or CDK Stage 5 (eGFR<15). The proportions of patients with an eGFR in CKD Stage 3A/3B increased slightly during the follow-up periods while the proportions of patients with an eGFR in CKD Stage 4/5 slightly decreased over the follow-up period (Figure 43).

Comparator patients were matched with HCH patients in the pre-enrolment period (whether an eGFR test was recorded and results of the latest eGFR). Among those who had an eGFR test, similar patterns in changes in eGFR levels were also observed during the follow-up period (Figure 43).

Figure 43: eGFR results in HCH and comparator patients with type 2 diabetes or cardiovascular disease who had an eGFR test recorded



Notes: People with length of follow-up shorter than respective yearly and six-monthly measurement period were excluded from analyses.
Source: Data extracted from 117 HCH practices (Pen CS, POLAR, and Sonic) and 403 comparator practices (MedicineInsight).

16

Patient and carer experience

Box 23: Chapter summary

Most patients reported that they had strong, long-standing relationships with their GPs. The round 1 patient survey revealed that 65% of HCH patients had been attending their practice for five or more years and a further 16% had attended for three to five years.

When interviewed some patients appeared unaware of what HCH entailed and reported that little had changed with their care. Practices attributed patients' observations of no difference to already operating like a HCH before the trial. Patients generally reported getting good care, but increased awareness may allow them to take full advantage of what HCH can offer. This is especially important for HCH with its emphasis on involving patients in their care and patient self-management.

Most patients reported that they were satisfied with the care received at their practices. Some patients observed that a practice nurse had more active involvement in their care following enrolling in HCH. They welcomed this change, as they were able to ask more questions about their health and how to manage their conditions.

Changes in care most noticed by patients included increased access to a practice via telephone or email. This included requesting routine prescriptions or referrals over the phone without an appointment with their GP, and a capacity to telephone with a practice nurse, HCH coordinator or doctor to discuss questions or concerns, which put them at ease and helped them manage their condition more effectively.

Fifty-seven percent of the patients surveyed reported being aware of a treatment or shared care plan. Of these, 42% reported that the plan was discussed with the GP or other practice staff at most consultations, and 43% reported that it was sometimes discussed. Patients had limited awareness of electronic sharing of information from their care plan among their providers.

Some patients reported positive experiences from involvement in patient groups established by the practice, which contributed to improvements in knowledge and sometimes their physical and psychological health. However, most HCHs did not establish groups, and practices that did introduce groups had to suspend or stop their group sessions altogether due to the pandemic.

Overall, most patients were satisfied that their care was well organised, that the doctor or nurse thought about their values, beliefs, and traditions when they recommended treatments and that they were shown how what they did to care for themselves influenced their condition. Features of care that patients reported occurred less commonly included that they were encouraged to attend programs in the community that could help them, that they were given a written list of things they should do to improve their health, that they were contacted after a visit to see how things were going and that they were asked how their visits with other doctors were going.

There was no significant change between the first and second surveys in patients' perspectives of the receipt of patient-centred care and cultivation of self-management behaviours, but a decline between the second and third surveys. During interviews, patients identified possible reasons for this: the COVID-19 pandemic which reduced services that were available to them previously and staff turnover at practices that also meant a reduced level of service when the staff member wasn't replaced, or they had to rebuild relationships with new staff.

Carers interviewed reflected that the HCH model was a great support to them and the person they care for. Carers mentioned that the ability to request prescriptions and referrals over the phone and having the nurse or coordinator as a clinical resource to call upon were very beneficial.

Many practices reported that patients who enrolled in HCH were already motivated to manage their health. GPs also tended to approach patients to enrol who they thought were activated or were willing to try new things. Some practices observed that through HCH, patients became more aware of their role in managing their health, and this engendered enthusiasm about what patients can achieve for themselves.

In the broader rollout of programs like HCH, strategies to engage patients who are less motivated, activated and/or willing to try new things will be important. These patients are more likely have poorly controlled chronic conditions and may benefit significantly from programs like HCH.

Patient experience of practices before HCH

At the beginning of the evaluation, patients were asked about their history and experience with their practices before HCH via interviews and surveys. The patient surveys revealed that the majority of HCH patients (67.2%) had been attending their HCH practice for five or more years, with a further 14.9% attending for three to five years (Volume 3 Appendix 7).

Beyond practical factors, such as patients' close proximity to their practice, many interviewees discussed the importance of the relationship with their GP. The strength of this relationship was often the main reason that patients had long-standing relationships with their practices. Some interviewees highlighted the positive traits and values that their GPs exhibited or that were important to them as health consumers and patients. These included:

- Excellent communication skills, including listening and answering questions, being truthful and upfront.
- Showing empathy.
- Being non-judgemental and making the patient feel comfortable: "*...There's less judgement*." [Patient 2, Practice 10, R2].
- Having time for the patient, for example not rushing the patient in a consultation: "*...he's always got time for you*." [Patient 2, Practice 5, R2].
- Thoroughness and being proactive rather than reactive: "she is brilliant, she doesn't leave any stone unturned..." [Patient 1, Practice 9, interview, R2]; "[The GP] always asks me if there's anything else she can do for me, anything like that, do you need anything? I can't praise them enough." [Patient 3, Practice 16, R2].
- Continuity.
- Expertise in the patient's specific chronic condition: "I think what you got here is, [the GP] and the people that provide similar services associated with him...fill a gap that the mainstream doesn't." [Patient 3, Practice 10, R2].

Many interviewees felt that these characteristics separated their doctors' or other high performing GPs from what they considered "mainstream" or average care in the health system:

> *"Doctors are like anybody. I mean, there's house painters and there's house painters…You and I could both go and paint a house together, it'd get painted, ceiling might too. But then someone might come in and do a really nice job and not make a mess. You can take your car in for a service, you might get the first-year apprentices doing it, or you might get the guy that's been there a long time and has a passion for it still. To do it. That's the difference."* [Patient 5, Practice 16, R2]

> *"Yes. I would be lost without him. [GP]'s the only one who's listened to [Patient 1] and I think that's what's made [Patient 1] grow now, in her mental health. I, as you knew the first time you'd interviewed us, I'd done all the talking."* [Carer, Practice 10, R5]

Beyond the GP-patient relationship, patients cited other reasons they initially visited their practices. Their first visits were predominantly due to the convenience of location. Others reported that they received a recommendation to visit the practice or conducted some online research about clinics in the area, which led them to their current GP. After the initial consultation, patients discussed what encouraged them to continue to return to the practice. In addition to the qualities of their GPs, some of these reasons included:

- friendly staff members, not feeling like just another patient: "…you're not just a number." [Patient 1, Practice 8, R2])
- additional services and specialists practising at location
- close proximity to specialists or pharmacy
- bulk billing
- office set-up
- large practice with multiple GPs that have a wide range of skills
- open to trying new treatment ideas and other options in order to improve condition
- access to receptionists or nurses via phone.

Recruitment to HCH

Patient motivations and expectations

Many patients had few to no expectations of the program. Some were curious about the initiative and others trusted their doctor who recommended that they participate in HCH:

> *"I was curious more than anything else I think, you know. And then they had an information evening or afternoon."* [Patient 4, Practice 4, R2]

> *"We didn't really know, we just followed along…*[The GP] *suggested it was a good idea so we said, fine. She knows us better than the other doctors down there…"* [Patient 1, Practice 16, R2]

Others cited specific program benefits that appealed to them as chronic disease patients. Easier access to the practice, more personalised care, additional education to promote self-management, greater involvement in their care, enhanced chronic disease management and additional support and the ability to be "priority patients" were commonly reported as

attractive features of HCH that motivated patients to join the program. Reported benefits varied by practice but often included better support and access to their GP or the nursing staff via phone, shorter wait times and the ability to request referrals and regular prescriptions over the phone.

> "*I just see it [as] getting the prescriptions and being a priority patient*. [Patient 3, Practice 3, R2]

> "*...so, the nurse is supposed to liaise with us, we can call for a prescription if we need it on his chronic, long-term meds. Which is huge, because getting him into the practice is very hard.*" [Carer 2, Practice 5, R2]

> "*Oh, well, what might change is when I get a bit older I suppose I'll be looked after. If I'm on my own, I've got wife and two boys...If something happens I think I'll be looked after through this Health Care [Homes].*" [Patient 2, Practice 3, R2]

How practices recruited patients to HCH

Practices used a wide range of approaches to recruit patients into HCH. Many patients and carers reported that their doctor discussed the program with them at one of their routine visits. This conversation often involved their GP or a practice nurse explaining the program and its potential benefits and encouraging the patient join the program. Other patients stated that their practice held an information session. Patients' experience of the forum approach seemed to be dependent on individual preference. Some reported enjoying the experience, but others reported difficulties in understanding the program or hearing the speakers:

> "*I was asked to consider joining up and having read through the documentation I thought I'd have a word to* [my GP] *about it. He recommended I joined up. So, I joined up.*" [Patient 1, Practice 10, R2]

> "*They actually had a really nice evening inviting patients that may want to go on it. And they had someone come down from the government, just to tell us how it would all work. And they put on a supper.*" [Patient 2, Practice 4, R5]

> "[The community event] *was ever so interesting, because there were quite a few people there, and we were listening to each other...There were 70 people there, I think*. [Patient 3, Practice 16, R2]

Trust and confidence in the judgement of their GP and practice persuaded many patients to join HCH. Patients also reported other motivations (Figure 44).

Figure 44: Motivations for joining HCH reported by patients

Source: Case study interviews, R2 Sept–Oct 2018.

Some patients stated that they struggled to effectively understand the program and its objectives. This was due to a multitude of factors, including confusion amongst staff members about the program aims and how it would work within their practices which often translated into a lack of confidence in effectively "selling" the program to their patients. In subsequent interviews, practices reported that patient understanding and expectations of HCH was an ongoing challenge for some patients which led to confusion around the program benefits and how it impacted their care:

> *"I did find it quite hard to get my head round I don't know quite why…I know I was given information to read afterwards…but a simple crib sheet or something just with the main points on would be… because it's quite wordy that document that comes out."* [Patient 2, Practice 5, R2]

> *"Well, at the time I don't think the practice knew much about it and what it was about. I'm quite sure they didn't actually…Nothing tells me that any of it has changed."* [Patient 1, Practice 8, R2]

> *"I don't really understand what the difference is. I'm never quite sure whether it's because we're now seniors or classed as seniors, whether we become entitled to things or whether it's because of the healthcare plan or whatever. But I do know the doctor is quite…insistent on seeing me twice a year at least, unless something crops up. That's the only difference I've noted."* [Patient 4, Practice 1, R5]

> *"When I joined up with this scheme, they never fully explained it to me properly. I just got a rough explanation and they put me in the program. [GP] sat me down and then explained what this program could help me or what they could do for me. I've just got along with the flow more or less."* [Patient 1, Practice 15, R5]

Patient experiences with HCH

Early in the trial, many practices reported concentrating on recruiting patients and implementing internal processes; therefore, patients reflected that little had changed in their care. Patients who reported changes predominantly discussed the ability to request prescriptions over the phone, more proactive follow up, better access to the practice and enhanced chronic disease management:

> "*...I just ring up and say, oh, HCH Coordinator, I need some prescriptions refilled, okay* [patient 6], *I'll ring you when they're ready. I'm saving the doctors time for her to see somebody that needs to be seen.*" [Patient 5, Practice 16, R2]

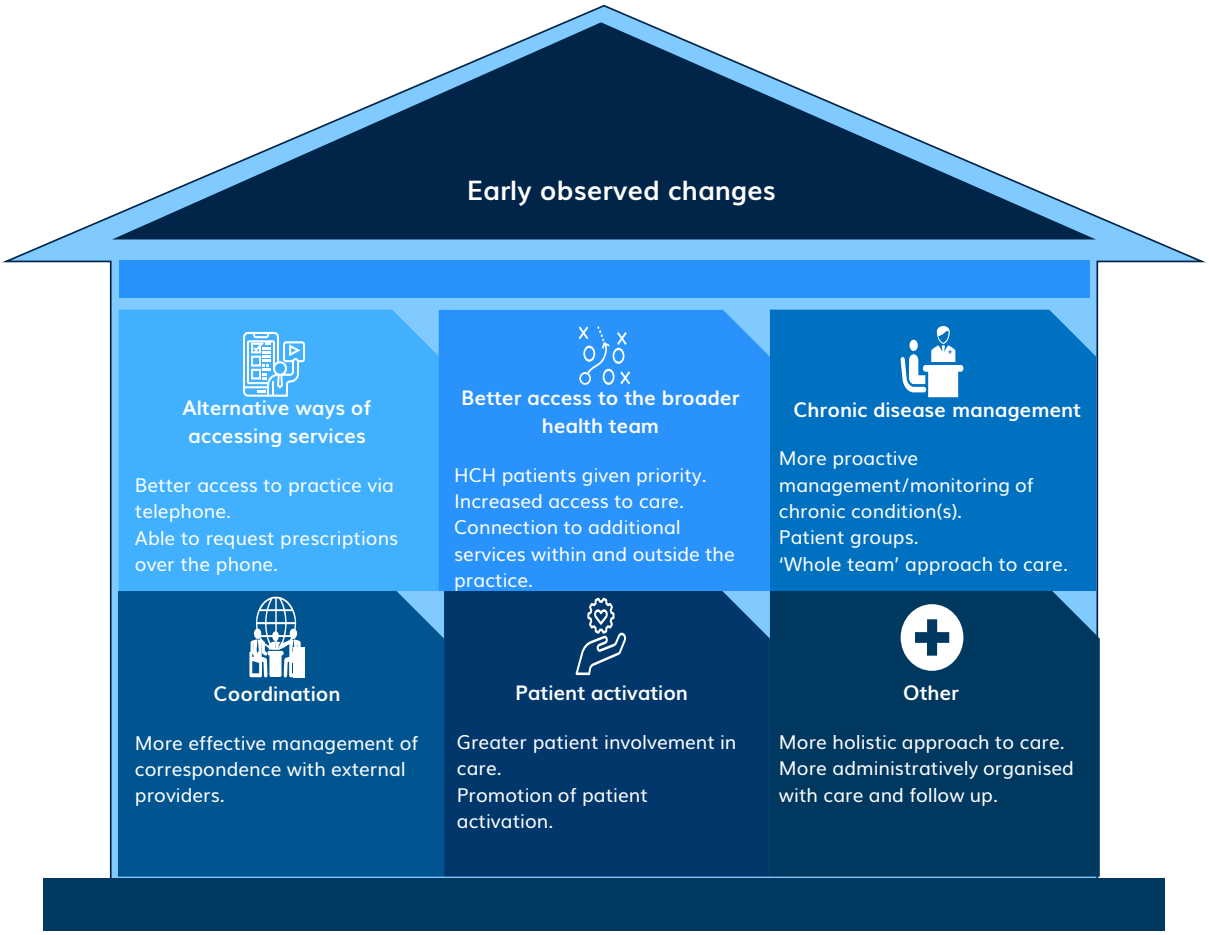
> "*...the only thing that really has changed is that I'm...sort of pushed a bit for, to get, you know, my knees looked at...we're communicating properly, the doctor and I. I think [my GP is] taking it a bit more seriously now.*" [Patient 3, Practice 5, R2]

> "[The care process has] *probably intensified a little bit, whether it was just me or whether the practice as a whole was doing it, but, you know, they've always been...a multi-branch sort of thing...They want to talk to you about health and talk about...wellbeing in total and lifestyle and that sort of thing.*" [Patient 3, Practice 5, R2]

> "*Before that it was pretty lax...I would have to go and see the doctor and say I want a blood test done for my sugar and all of this. I was the one that was always...Driving it and I shouldn't have been. You know but this has all changed now and that's been, I suppose, 18 months and maybe two years...*" [Patient 5, Practice 4, R2]

Some practices were further along in implementation and had made more noticeable developments that were apparent to patients. Figure 45 highlights these early changes that some patients observed.

Figure 45: Early changes patients observed with HCH



Source: Case study interviews, R2 *Sept–Oct 2018.*

As the trial progressed, practices continued to develop their HCH models and many aimed to make additional enhancements to their chronic management processes. Some of these developments were more internal and may not have been noticeable to patients, such as more frequent meetings between team members.

A few practices stated that there was some initial resistance and concerns from their patients about enrolling in HCH, particularly around being managed by other members of a team rather than solely by their GP. To manage any resistance and allay patients' fears, practices introduced program changes slowly. Overall, many patients appeared happy with HCH and reported positive experiences with the model:

> *"[HCH coordinator] enrolled myself and my wife in Health Care [Homes], and she's more or less taken us under her wing. She more or less tells us if we're in any sort of trouble, here's her phone number, we ring her. And so it gets that way now, whenever we come down to the doctor's rooms there, we always look up [coordinator]. [Coordinator] sort of takes care of us. She checks our blood pressure and makes us really feel very, very at home, and she's a very good ambassador for Health Care [Homes]."* [Patient 3, Practice 4, R4]

> *"… so when we began and where we are now. But even that has changed and shifted. When I started enrolling patients, more than half of my patients were very reluctant to get onto the program because they thought they'd lose me … there*

was one woman, after I enrolled her and explained, she held my hand and she said, no one can separate you from me, [GP2]. Yes, so that's how we started. She's still enrolled … The big shift that I've seen is in her now, where in the beginning, she would still keep booking in to see me. And was unable to trust her care could be given to her by the whole team. And it took a while, but now she's more than happy when my nurse rings her to just check in on her … And she's finding it massively beneficial now. Where there are days when I'm not here and I've heard she's rung in and spoken to one of my nurses for something like I need a referral or can you please ask [GP2] to ring me back. Which she would never have done before. That's one success." [GP, Practice 5, R4]

COVID-19 put additional pressure on practices and brought forth significant whole-of-practice changes to care delivery, staff communication and collaboration. The introduction of telehealth and eScripts resulted in changes in care delivery and access for non-HCH patients, but HCH patients' care largely remained the same. In some instances, HCH patients reported that certain benefits were scaled back during the pandemic, such as check-in calls and the ability to request prescriptions over the phone. Practices attributed these changes to staff turnover or "pandemic priorities", such as changing workflows and the vaccine rollout:

"*No…it's the same. If I need a doctor, I get to see the doctor. No, I don't think it's changed*" [Patient 3, Practice 24, R5]

"*…when the scheme actually started, the nurses would ring us once a fortnight just to check how we were going, whether there was anything we needed them to do. It was wonderful. But then, of course, they got very busy with Covid.*" [Patient 2, Practice 4, R5]

"*We had a girl [sic] at [Practice 16] that used to ring us all the time and ask me if I needed scripts and stuff like that. And now I can't even ring up anymore and get my scripts. I have to go in and get all of them. I don't know what happened.*" [Patient 1, Practice 16, R5]

"*[They] used to call every month. But then lately the last 12 months, because you go to doctor, and then they used to say, well you've got to book in for it. They talk to me, but it hasn't happened, I think, for the last 12 months, nothing at all.*" [Patient 5, Practice 1, R5]

HCH patients noted that COVID-19 increased practices' reliance on telehealth and video consults. While some patients had limited to no contact with their practices during the height of the pandemic or visited face-to-face, others found this method of communication very beneficial as they were reticent to visit their practice due to their conditions or they had to travel long distances to visit in-person:

"*Because I'm on a couple of immunosuppressants, I wasn't allowed to leave the house. But my GP was very supportive of that and had telehealth video appointments… my GP got it up pretty quickly. Like I noticed some of my specialists, they took a little bit to get onto the bandwagon, but my GP was up and running very quickly, which was great.*" [Patient 1, Practice 22, R5]

> *"Yes, because of the pandemic, we've tried to avoid contact with anybody. My weakened immune system. And most of my communication is through the booking [telehealth] service at [General Practice 1], which is excellent, absolutely excellent."* [Practice 1, Patient 1, R5]

> *"We've been telehealthing…We don't have to sit in a doctor's surgery, in waiting rooms. And especially through COVID, it's been a blessing, we haven't had to be sitting where he can catch something in that time. In general, it's a fantastic way to be able to communicate."* [Carer 2, Practice 5, R5]

Ultimately, many patients reported minimal changes in their care throughout the duration of the trial. The key changes patients discussed revolved around increased flexibility and access and enhanced chronic disease management and monitoring. Despite minimal changes in care, patients were largely satisfied with the care that they were receiving and recommended HCH:

> *"It's good, it hasn't changed, because as I said, I've always been well looked after …"* [Patient 1, Practice 7, R4]

> *"Not really. They're always good. I can't always get my own doctor because she's pretty busy. But the other doctors I see are just as wonderful too. They're good too. I trust them too."* [Patient 3, Practice 9, R5]

> *"Not really. It's always been good. I have no complaints whatsoever… Our public system and the GP system here at [Practice 4] and the specialists I've seen have been really good and they've always given the follow-up to the doctor, the GP. So, I can't fault them. I'm very thankful that I live in [State] and I have good care."* [Patient 4, Practice 4, R5]

The following sections on patient access and chronic disease management elaborate on the frequently highlighted benefits of HCH.

Patient access

In each patient survey wave, patients were asked about how often they attended their practice within the last six months and their ability to access their practice for urgent and routine care. In wave 1, 28.1% of patients reported attending 10 or more times, 29.9% between five and nine times and just under 50% reported less than five times in the last six months.[76] In wave 2, this pattern was broader similar, with a slightly lower proportion reporting attending 10 or more times (16.6%) and a higher proportion 5–9 times (32.3%). In the third wave, which was impacted by the COVID-19 pandemic, patients reported attending the practice less frequently (11.2% 10 or more times and 27.1% 5–9 times). This was partially offset by patients who reported that they had a telephone or video consultations in the last six months.

[76] These estimates are lower than those based on the practice extract data (see Chapter 15: Encounters with GPs). The patient extract data suggests 87.4% of patients had 5 or more GP consultations in the 12 months before enrollment.

Most patients surveyed (83.8%) reported being able to get an appointment for urgent care when they needed it "most of the time" or "always." For more routine care, 85% reported being able to get an appointment when they needed it "most of the time" or "always." Across all attendances, 83.8% of patients reported being able to get an appointment with their personal GP "most of the time" or "always". Table 40 shows patient survey responses that were collected at the initial stages of the evaluation.

Table 40: Appointments over last six months and ease of access

Questions	Appointment for urgent care ("care needed right away")	Appointments for a check-up or routine care	All attendances
Needed this type of appointment over the last 6 months			
Yes	973 (48.2%)	1,521 (75.4%)	n.a.
No	1,022 (50.6%)	460 (22.8%)	n.a.
Don't know	23 (1.1%)	37 (1.8%)	n.a.
How often did the patient get the appointment as when needed? (Patients who needed this type of appointment over the last 6 months):		**How often was the consultation with their personal GP?:**	
None of the time	19 (2.0%)	20 (1.3%)	21 (1.0%)
A little of the time	37 (3.8%)	42 (2.8%)	52 (2.6%)
Some of the time	85 (8.7%)	143 (9.4%)	106 (5.3%)
Most of the time	300 (30.8%)	550 (36.2%)	633 (31.4%)
Always	516 (53.0%)	742 (48.8%)	1,182 (58.6%)
Don't know	16 (1.6%)	24 (1.6%)	24 (1.2%)

Source: Patient survey Wave 1, Dec 2017–Mar 2019.

Patient interviews revealed that the frequency of their visits often aligned with the severity of their condition(s). Interviewees reported attending their practice as little as once a year to as frequently as every few weeks. Several interviewees cited visiting more frequently for routine blood testing, INR testing, weight management services, diabetes checks and prescription refills:

> "*Twelve months…Every twelve months.*" [Patient 7, Practice 16, R2]

> "*Well because of the INR, it's once a month. So, I'm there once a month, but if there's a couple of times there, it might be two or three times a month, just depending on what was going on with me.*" [Patient 1, Practice 9, R2]

Some patients reported short waiting times and little to no trouble scheduling an appointment at their practices:

> "*They've got good service. They ring up the day before you have got an appointment.*" [Patient 2, Practice 1, R2]

Others reported issues with long waiting times before consultations or difficulties seeing their GP on short notice. Some patients often felt reflected their doctor's attentiveness and diligence in caring for their patients, but others described this as a drawback in attending their practice:

> *"…you can sit there for three or four hours sometimes waiting to get in to see the doctor. Seems to be a long time just to wait to see a doctor. You've got to make an appointment say 3 o' clock, you don't need to make 3:45 pm, 5 o' clock sometimes…Very annoying."* [Patient 2, Practice 3, R2]

Patients frequently cited increased access to the practice via telephone or email as one of the main benefits of HCH. Some patients stated this was the only change they noticed with being enrolled in HCH. Increased access often included the ability to request routine prescriptions or referrals over the phone without having to make an appointment with their GP. Some patients also reported being able to ring the practice nurse, HCH coordinator or doctor if they had any questions or concerns, which put them at ease and helped them manage their condition more effectively. Others stated that being a HCH patient meant that they were prioritised for appointments:

> *"…it was helpful because it was reassuring. So, it's reassuring, and reassurance is a big part of it all."* [Patient 1, Practice 6, R5]

> *"I've just rung them and, you know, just to like, oh, you know, well this is where we are with [him] and he's getting close to his transplant, things like that. So, quite often I don't even have to go in now. I can just ring them on the phone and speak to them."* [Carer, Practice 4, R2]

> *"… the beauty of what this Homes Health, however you say it, is that I can just ring up, it's very hard to get in to our doctors, you might wait two or three weeks to get in to a doctor, because it's pretty full on out there, and I ring up [nurse] who coordinates all that and she just says, yes, you need to see the doctor or they will come and see you. It's been really helpful to me and my wife."* [Patient 1, Practice 24, R4]

> *"…just being able to contact them at any given moment. If I'm urgently requiring a script, I'll have the script within the case of an afternoon. If there's a problem, they'll fax it straight over to my chemist. So I've just got to go straight to the chemist and pick it up. Anything that I've asked them to do, they are quite willing to do it."* [Patient 1, Practice 6, R5]

Chronic disease management

Patient survey results

In the wave 1 patient survey, patients were also asked questions from the Patient Assessment of Chronic Illness Care (PACIC) instrument. The PACIC is designed to assess the implementation of the chronic care model from the patient perspective.[77,78,79] It focuses on the patient's perspective of the receipt of patient-centred care and cultivation of self-management behaviours across five domains:

- patient activation score
- decision support score
- goal setting score
- problem solving score
- follow-up/ co-ordination score

The 12-item version of the tool was used in the evaluation. Responses for each question are on a five-point scale from 1 (none of the time) to 5 (always). For this analysis these were treated as numerical values and averaged across questions to generate a score for each dimension. Details tables describing responses to each item in the PACIC are available in Volume 3 Appendix 7.

The responses to the PACIC items for the wave 3 respondents are summarised in Figure 46. HCH patients reported that features of care that most commonly occurred "always" or "most of the time" were that the patient was:

- "Satisfied that my care was well organised" (mean score: 4.4; proportion responding *Always or Most of the time*: 86.1%)
- "Sure that my doctor or nurse thought about my values, beliefs, and traditions when they recommended treatments to me" (mean score: 3.8; proportion responding *Always or Most of the time*: 77.4%)
- "Shown how what I did to care for myself influenced my condition" (mean score: 4.1; proportion responding *Always or Most of the time*: 70.4%).

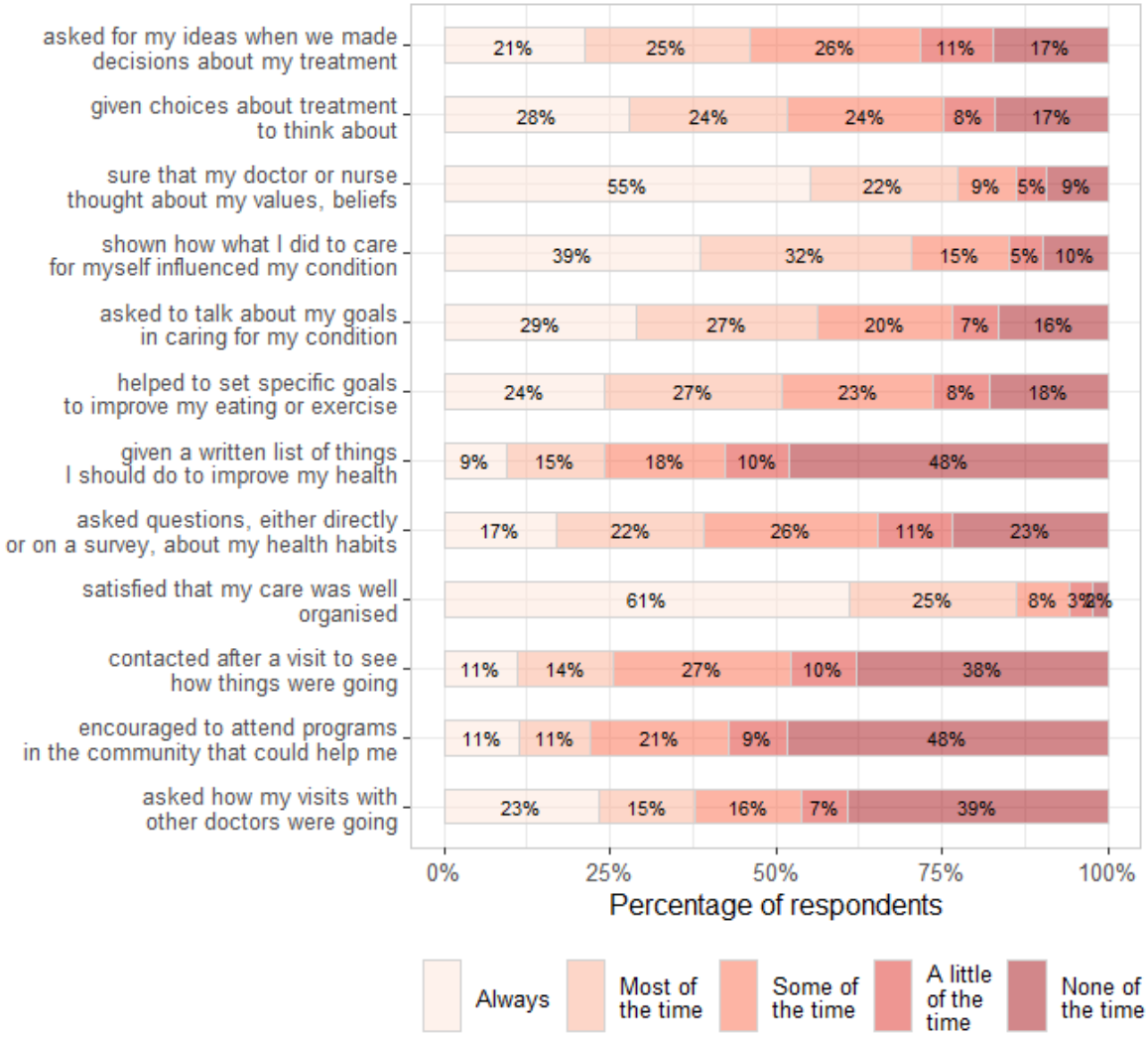
---

[77] Gibbons, C. J., Small, N., Rick, J., Burt, J., Hann, M., & Bower, P. (2017). The Patient Assessment of Chronic Illness Care produces measurements along a single dimension: results from a Mokken analysis. *Health Qual Life Outcomes*, *15*(1), 61.

[78] Glasgow, R. E., Wagner, E. H., Schaefer, J., Mahoney, L. D., Reid, R. J., & Greene, S. M. (2005). Development and Validation of the Patient Assessment of Chronic Illness Care (PACIC) [Journal]. *Medical Care*, *43*, 436-444.

[79] Schmittdiel, J., Mosen, D. M., Glasgow, R. E., Hibbard, J., Remmers, C., & Bellows, J. (2008). Patient Assessment of Chronic Illness Care (PACIC) and improved patient-centered outcomes for chronic conditions. *J Gen Intern Med*, *23*, 77-80.

Figure 46: Patient ratings of PACIC items, wave 3



Source: Patient survey Wave 3, *Mar–Apr 2021*.

Features of care that were reported to occur less commonly included that the patient was:

- "Encouraged to attend programs in the community that could help me" (mean score: 2.3; proportion responding *Always or Most of the time*: 21.9%).
- "Given a written list of things I should do to improve my health" (mean score: 2.3; proportion responding *Always or Most of the time*: 24.1%).
- "Contacted after a visit to see how things were going" (mean score: 2.5; proportion responding *Always or Most of the time*: 25.5%).
- "Asked how my visits with other doctors were going" (mean score: 2.8; proportion responding *Always or Most of the time*: 37.8%).

The dimensions for which mean scores were highest were *Problem solving* (mean score 4.2) and *Decision support* (mean score 3.7). The dimension for which mean scores were lowest was *Follow-up/ co-ordination* (mean score 2.5).

There was no statistically significant difference in the dimensions between tiers.

Changes in PACIC responses across the survey waves were analysed. There was no significant change between wave 1 and wave 2 in mean scores, but a small but statistically significant reduction between wave 1 and wave 3 (Table 41). There were also statistically significant reductions in the proportion of respondents responding *Always or Most of the time* in wave 3 compared with wave 1 across the items and dimensions (Table 42).

Table 41: Estimated change in PACIC mean scores (95% confidence intervals) from wave 1

Overall score and subcategories	Wave 1	Change from wave 1 (95% CI) [1]	
	Mean (median)	Wave 2	Wave 3
Total PACIC score	**3.4 (3.5)**	**-0.02 (-0.06, 0.02)**	**-0.13 (-0.18, -0.09)**
Patient activation score	3.4 (3.5)	-0.02 (-0.08, 0.05)	-0.10 (-0.18, -0.03)
Decision support score	3.7 (3.7)	-0.06 (-0.11, -0.02)	-0.21 (-0.26, -0.16)
Goal setting score	3.4 (3.7)	-0.02 (-0.07, 0.04)	-0.10 (-0.17, -0.04)
Problem solving score	4.2 (5.0)	-0.09 (-0.16, -0.02)	-0.13 (-0.21, -0.05)
Follow-up/ coordination score	2.6 (2.7)	0.04 (-0.02, 0.09)	-0.10 (-0.17, -0.04)

Notes: [1] Change is estimated from an analysis involving all patients who completed at least one survey using generalised linear mixed model with random intercept terms for patient and practice. Very similar results were obtained from the same analysis using only those patients who completed all three surveys.
Source: Patient surveys Wave 1 Dec 2017–Mar 2019; Wave 2 Dec 2019–Mar 2020; Wave 3 Mar–Apr 2021.

Table 42: Odds ratio of the proportion of respondents reporting *Always or Most of the time in* waves 2 and 3 relative to wave 1

PACIC subcategory	Odds ratio (95% CI) relative to wave 1 [2]	
	Wave 2	Wave 3
Patient activation score	0.96 (0.85, 1.08)	0.84 (0.74, 0.95)
Decision support score	0.82 (0.73, 0.92)	0.62 (0.55, 0.70)
Goal setting score	0.95 (0.85, 1.06)	0.80 (0.71, 0.90)
Problem solving score	0.82 (0.70, 0.94)	0.79 (0.67, 0.93)
Follow-up/ coordination score	1.04 (0.89, 1.22)	0.79 (0.66, 0.95)

Notes: [1] Odds ratios were estimated from an analysis involving all patients using a generalised estimating equation with patient as the repeated measure.
Source: Patient surveys Wave 1 Dec 2017–Mar 2019; Wave 2 Dec 2019–Mar 2020; Wave 3 Mar–Apr 2021.

Qualitative analysis

Some HCH patients felt their practices' management of their chronic disease(s) was enhanced due to better follow-up, more frequent contact and closer monitoring of their conditions:

> *"…it's got better, actually. Since the situation with the Health Home Care Plan Reviews and that, I was seeing him on a regular basis, and they were helping me along with my progress and stuff…It wasn't me ringing up for an appointment to actually see the doctor, it was them following me up and following my progress and stuff."* [Patient 6, Practice 4, R5]

> *"I think they look at the bigger picture, and they action things probably more quickly. And I'm not saying they weren't amazing before, but they become and advocate for you when times are a bit tough.."* [Patient 1, Practice 12, R5]

> *"Yes, it's gone up a little bit. They spend a little more face time and ask a few more detailed questions like how am I going, how is my psyche going and all that stuff. So, they're being way more invested."* [Patient 2, Practice 10, R5]

> *"I find I get the regular contact, they review my case. And if I haven't gone back in for a check-up, they'll remind me like, hey, you've got a check up coming up next month, please book in for the nurse to come and have this…I feel like they've been more proactive from that point of view to help me manage my health better…That was after I joined. That wasn't necessarily what was happening prior. At that practice, and at previous practices, I guess, it's always been, I need to make an appointment because I need to go and see someone about something."* [Patient 2, Practice 5, R5]

Only a small number of practices reported establishing groups for their HCH patients and these largely stopped running due to the pandemic. Patients were very positive about a dietician group that one practice established:

> *"I think the group sessions are good, because when you're first diagnosed, you think, diabetes, what am I going to do? How have I got to change my life and stuff like that? And it's good because you do come down and interact. Everyone has their story. Someone's doing this and someone's doing that. You get to pick up some good hints."* [Patient 2, Practice 18, R4]

> *"… when I was first diagnosed over at the hospital, they virtually said well, this is how you've got to do it. The diet, the diabetes plate. That, to me, the way I was growing up, was putting petrol on fire. With this dietician now, we can ask her anything. She individualises, I suppose, our needs and she says well, try it this way. If it doesn't work, try something else."* [Patient 3, Practice 18, R4]

Some patients mentioned other services and benefits their practices provided them or helped them receive. In most instances, these services were not part of HCH. They included practices helping patients access additional supports such as home care, consults with internal and external providers and transport.

Case study

Andre* has diabetes, ulcerative colitis, cardiac and kidney issues. He lives with his wife, who is his carer, and helps him manage his conditions. Andre and his wife moved an hour away from the practice a few years ago, but, due to their long-standing relationship with the GP and the high-quality care, they continue to attend the practice. Andre's wife described HCH as a "blessing" for them because Andre can have telehealth consultations and communicate with the practice via phone. This was especially beneficial during COVID-19 when Andre and his wife were concerned about going into the practice. The model has also allowed Andre increased access and communication with the practice through the nursing staff who frequently call him to check in and help liaise with Andre's multiple specialists. In addition, Andre uses a tool implemented by the practice that allows him and practice staff to actively monitor his vital statistics remotely. His wife stated that the model and the extra support provided by the practice has given her more confidence in her ability to help manage and support her husband with his multiple conditions.

** Name changed to protect privacy.*

Experience with the care team

Shared care planning

In initial patient surveys, respondents were asked about whether they had a treatment/ shared care plan developed by the GP or practice, and is so, whether they received a copy of the plan in the last six months (Table 43). Fifty-seven per cent of patients reported being aware of a treatment or shared care plan. This could be expected, as the development of a share care plan was a requirement for the HCH program.[80] Of those, 42% reported that the plan was discussed with the GP or other practice staff at most consultations, and 43% reported that it was sometimes discussed (Table 44).

Table 43: Treatment/ shared care plan status

Response	Number of patients (%)
Patient had a treatment/ shared care plan developed	**1,159 (57.4%)**
Patient was given a copy in the last 6 months	*850 (73.3%)*
Patient was not given a copy in the last 6 months	*260 (22.4%)*
Patient doesn't know whether they were given a copy in the last 6 months	*49 (4.2%)*
Patient did not have a treatment/ shared care plan developed	**747 (37.0%)**
Patient does not know whether they had a treatment/ shared care plan developed	**112 (5.6%)**

Source: Patient surveys Wave 1 Dec 2017–Mar 2019.

Table 44: Frequency with which the GP or practice staff discussed the treatment /shared care plan with the patient with over the last six months

Frequency [1]	Total	HCH tier			
		1	2	3	p value
At most or all consultations	485 (41.8%)	90 (41.7%)	244 (43.3%)	130 (53.3%)	0.030
It was sometimes discussed	500 (43.1%)	105 (48.6%)	274 (48.6%)	103 (42.2%)	
It was never discussed	79 (6.8%)	21 (9.7%)	46 (8.2%)	11 (4.5%)	
Don't know	95 (8.2%)				

Notes: [1] Only reported for patients who answered that they have a treatment plan/shared care plan.
Source: Patient surveys Wave 1 Dec 2017–Mar 2019.

Most patients were registered with My Health Record (Table 45). Of those that had registered and had a treatment/ shared care plan developed, less than half reported a copy being uploaded to their My Health Record.

[80] These responses should be interpreted with caution, as some studies have shown that patients may have limited awareness of 'care plans'. They may also confuse the care plan created by their general practice with other plans, such as for aged care and disability services.

Table 45: Registration for My Health Record and status of treatment plan

Response	Number of patients (%)
Patient registered for My Health Record	1,449 (71.8%)
Patient has a treatment/ shared care plan and a copy was uploaded to My Health Record	*420 (47.4%)*
Patient has a treatment/ shared care plan and a copy was not uploaded to My Health Record	*59 (6.7%)*
Patient has a treatment/ shared care plan and does not know whether a copy was uploaded to My Health Record	*408 (46.0%)*
Patient not registered for My Health Record	338 (16.7%)
Patient does not know whether registered for My Health Record	231 (11.4%)

Source: Patient survey Wave 1 Dec 2017–Mar 2019.

The interviews with patients were consistent with the survey data. Early patient interviews indicated that patient involvement in care planning was variable. Some patients were not aware of having a care plan while others were actively engaged in creating and updating their care plan:

> "*I'm not aware of [a care plan]...If there is anything like that happening I'm not aware of it.*" [Patient 1, Practice 8, R2]

> "*I've got all that, that's all up on the site as well, that's all written up there, all the plans, all the care teams written up, they've all got access to that. They all put input in even the cardiologist and the podiatrist is in there as well. It's a full plan...So, it's all up there, and I'm quite happy with that. All my medications are on there, everything that we've done, all my history...so it's all on the system, which is brilliant.*" [Patient 1, Practice 9, R2]

Patients who were aware that they had a care plan mentioned discussing topics such as their medical history, functional status at home, diet, activity, emotional support, hobbies and personal health goals with their GP or a practice nurse when the plan was developed. Most stated that they received a paper copy of it once it was completed or were confident that they could request one from their practice.

A small number of patients reported accessing their plan online, but many stated that they were unaware of or not interested in accessing their care plan online. Many patients had limited awareness of electronic sharing of information from their shared care plan among their providers. Where they were aware, sometimes they engaged with it themselves:

> "*... with the BSLs or BGLs, because I do them three times a day. Every time before I inject, I will do a reading and then I put that on [the shared care planning tool] ... I do it all on my iPad. Straight into the [shared care planning software] ... [The specialists] can see what each other is doing ... And my doctor can see ... what's happened, if there is anything. What appointments I've attended, any scripts that I need, so that [the doctor]'s got all that information before I even walk in. I also upload sleep patterns ... that's the other one. I've got sleep apnoea and restless*

legs. So, I've got a sleep app. So, I upload all of that to give [the doctor] a copy of that so that she's got that on file." [Patient 1, Practice 9, R4]

Interviews in the latter half of the trial yielded similar findings about patient awareness of their care plan as earlier interviews. Some patients stated they had a care plan for many years; others said they received a care plan when they enrolled in HCH and a few reported they were not familiar with a care plan and could not recall creating one.

The frequency of care plan reviews mentioned by patients ranged from every time the patient visited the practice, six months or annually.

Patients reported that a few services they were receiving started when they enrolled in HCH, mostly prompted by having a care plan developed. They reported positive experiences with these additional services:

> *"The physio has definitely made a difference to me as far as mobility is concerned and strength. It's helped reduce the arthritis pain because of the strengthening of the muscles around certain joints, and things like that … I was going to the chiropractor and they hadn't picked up on certain things that were happening muscular wise. And when I went to the physio they picked things up straight away that had been an issue for a long time. So, I stopped going to the chiropractor, and just went to the physio instead."* [Patient 2, Practice 6, R4]

> *"I got to see a dietician … I had several visits with that, and that actually was quite helpful … So, that's all worked out."* [Patient 5, Practice 4, R4]

> *"…I think also when I review, it's also about reviewing my mental state. Even though that's not my main condition, it can obviously be very taxing to have so many illnesses, and connecting me with a psychologist and organising a care plan for the psychology visits. So, that forms part of the review to check in with how I'm feeling emotionally."* [Patient 1, Practice 22, R5]

Case study

Jason* has diabetes, asthma and lumbar spondylosis. He has a long-standing relationship with his practice and contacts the practice frequently for his conditions. Jason is very active on the patient portal of the practice's shared care planning system. He feels that the portal and the HCH model have led to better coordination of his care and allowed him increased access to the practice. Due to his engagement and knowledge of the patient portal, he is working with staff to organise workshops at the practice to teach other HCH patients how to use the portal to become more activated and better manage their chronic conditions.

** Name changed to protect privacy.*

My Health Record

At the beginning of the trial, HCH patients were still required to have a My Health Record to join HCH. Practices reported that some of their patients were concerned about the security of their information, and this deterred them from enrolling in the program. The requirement for a My Health Record was subsequently lifted to allow HCH patients to opt out of My Health Record when new legislation was passed in November 2018 to allow this for all Australians.

Most of the patients surveyed reported that were registered with My Health Record (Table 45).

Of the patients that enrolled in HCH and interviewed, while some were unaware of My Health Record or how to access it, others had privacy and security concerns. For example, one patient explained why they decided to opt out of My Health Record when enrolling in HCH:

> *"I just feel that my health conditions aren't that complex, it's pretty easy to say I've got asthma and arthritis … And I just thought it was another level of privacy that I didn't have to have be involved in. I know it's crazy these days, everything is online, everything is accessible one way or another, but I just felt like I didn't want to make it."* [Patient 3, Practice 6, R4]

A few patients felt that the requirement to have a My Health Record was positive as it allows clinicians involved in their care to have access to their information when they needed it:

> *"When I'm having a heart attack, I mean it's the more pertinent information people have right at the time, I mean, because you're operating on short periods of time…the more access that everybody's got to who you are…the better."* [Patient 1, Practice 1, R2]

> *"I really think that [My Health Record is] just a tremendous thing … Like you go and see a strange doctor somewhere and you can tell them you're part of My Health [Record] … And this happened at the [Hospital] when I was up there. And you know, they found it very helpful … I had this blooming turn up there where I woke up at three o'clock in the morning, thought I was dying, and … we got an ambulance and then I was in intensive care for three days because I got this confounded cellulitis … at the time, I couldn't recall what sort of trouble I was in in regard to what sort of medication I took or anything. But they could soon find all that out just by getting onto My Health [Record]."* [Patient 3, Practice 4, R4]

Coordination with other providers

An objective of the HCH program was to promote and improve coordination between practices and other health care providers.

Most patients felt there was good communication between their practice and other providers. In some instances, patients felt they had additional advocacy and support to navigate the health system and liaise with external providers:

> *"…referrals can take forever when you're doing it…It took a lot longer for me to do than it did with the nurses."* [Patient 1, Practice 4, R5]

> *"Yes, [the communication is good] … I always ask. When I've seen the specialist and I go to my GP I say have you got my last visit report from whoever. Yes, they have."* [Patient 1, Practice 6, R4]

> *"… before I go to the hospital I think [my practice and the hospital] communicate. On their data they have the details of my health."* [Patient 1, Practice 3. R4]

A few, however, felt that the communication between their GP and external providers was left up to them or was minimal:

> *"No, I don't think he does, not with the skin specialist anyway. They might get onto him if it's affecting my health or something. But I don't think he gets a call back at all about what they do. He asks me about it."* [Patient 2, Practice 6, R5]

> *"I guess my expectation of the program before it started, was that there would be a bit more, maybe my GP speaking to my specialist when the plan's not working so well to say… Or, because I've got multiple conditions is getting multiple specialists across, because it's a holistic problem. So, I think more needs to be done there that would enhance the program to have the GP and then other specialists review that together and go is this the right approach. Because it still feels very segmented, like each specialist is separate and then they just write letters to the GP and the GP writes letters to them."* [Patient 1, Practice 22, R5]

Pharmacists

Patient experiences with community pharmacists are discussed in Chapter 22 (p. 290).

Allied health

Some patients discussed additional external allied health services that their GPs connected them with since enrolling in HCH. They described these additional services as very helpful in helping to managing their conditions:

> *"I'm doing the exercises at* [centre]*. The one for the heart I'm finished. That's with all the equipment. I did that for eight weeks. Now I'm doing one for the lungs and the exercises are very similar. It was the doctor that recommended that and* [the GP] *recommended that so it was good. Then when I went for the first one, they looked after me over there and they suggested I do the second lot, the COPD exercise. So that's what I'm doing now, that's twice a week. Yesterday and Thursday."* [Patient 3, Practice 4, R2]

> *"…there's certain things I can have, I think it's five visits from podiatrists a year. So that's all going linked* [to the podiatrist] *so that she can just go backwards and forwards on the thing, you don't have to send forms with me or get more referrals. She just asks in the system,* [the GP] *puts and sends it back to her. So, you know that covers all that, so there's a working relationship there."* [Patient 1, Practice 9, R2]

> *"Well, I had an initial contact with the nurse there, the clinical nurse, and then my GP, and then a joint interview…my doctor made sure that she accessed a lot of services for me in relation to my Parkinson's… there was a very good program for people with Parkinson's with physiotherapy at another, at a hospital…and then they contacted me…and I was able to access the therapist."* [Patient 4, Practice 5, R2]

> *"Well since I joined it, like I said I can go to a podiatrist now and that sort of thing. Where before I didn't know any of that."* [Patient 3, Practice 24, R5]

> *"I think in 2018…when first the diabetes thing came up, I got referred to a dietician and to a diabetics counsellor. And went through a course with them for…probably about six/seven months…And managed to…get my sugar levels back to normal. And managed to get my weight down substantially. And really haven't had need of the service since. They gave me guidelines which I stick fairly closely with."* [Patient 1, Practice 1, R4]

Experience of carers and family members

Throughout patient interviews, carers and family members shared the struggles they face in their roles and the lack of services and supports available to them. These challenges often included the responsibility of managing the HCH patients' health conditions by keeping track of their medications, taking them to appointments, navigating the health system to ensure they receive the support that they need and general patient advocacy:

> *"But if you've got a person who doesn't speak English or who themselves has an intellectual disability, they can't fight the corner that you have to fight to make sure the kids get the help they need. So, it really depends on your level of advocacy skills and your stubbornness to make sure that they're serviced correctly."* [Carer 1, Practice 5, R2]

> *"Well, all my health care was written down in a book …because he has got so much, and I have got so much. I've got to remember his as well as my own."* [Carer & Patient 3, Practice 4, R2]

Carers and family members reported benefits of HCH which included better coordination of care and additional advocacy and support for the person that they are caring for. Carers specifically mentioned the ability to request prescriptions and referrals over the phone and having the nurse or coordinator as a clinical resource as very beneficial:

> *"…the nurse is supposed to liaise with us, we can call for a prescription if we need it on his chronic, long-term meds. Which is huge, because getting him into the practice is very hard. He got a bite on his hand and it had tracked up to his arm within an hour and they just moved him straight in…it becomes a priority, that kind of stuff, which is important…"* [Carer, Practice 5, R2]

> *"[Patient 4] hates coming to the doctors. She plays up like anything, screams and yells and then she goes through a good period … So, it's good for us in that she doesn't have to come back here all the time … It's good in that I don't necessarily have to bring [Patient 4] out here unless she really needs to see a doctor. If we're concerned about giving her, say, Nurofen, I can ring someone up and ask them … And … In time [they'll] ask the doctor and get back to me …"* [Carer, Practice 18, R4]

> *"For me it's been very reassuring. I don't have a medical background but most of my family are registered nurses. We've got a bit of medical background, a bit of expertise there and just anecdotal things. I'm not trained, but it's definitely reassuring to be able to use the Health Care Homes program and [external shared*

care app]…it gives me confidence to manage his medication, that sort of thing too." [Carer 1, Practice 5, R5]

Patient suggestions for HCH

Many patients recommended HCH, reported that they were largely satisfied with their care and did not want or need anything further from the model or their practice:

> "*I'm just happy with the way things are going. Very happy.*" [Patient 5, Practice 16, R2]

> "*Oh, I don't think they can improve it, to be honest. No, to be honest… I'm getting excellent care and I keep getting surprised, you know, by how much is there…*" [Patient 3, Practice 5, R2]

> "*I think I'm very happy with the way I've been treated … I'm very happy with [GP], it's been really good.*" [Patient 4, Practice 18, R4]

> "*It's been an absolute game changer in terms of managing my illness. I hope that it continues, because it's made such a difference to my life. And sometimes I'll tell people about, you know, this is the way that my GP works, and they're just amazed that that's accessible for patients with chronic illness, because it's a really innovative way to treat patients…So, I've told family members about it, and even my husband's enrolled as well. But, yes, it's just changed so much in terms of being able to access health care quickly and easily and not waste energy on travelling into the doctor.*" [Patient 1, Practice 22, R5]

Some patients recommended HCH for individuals with more complex health issues who might need additional support to help manage their conditions:

> "*…overall, it is working for me, and I think I'll say if the people are medically complicated people, this program will definitely help.*" [Patient 3, Practice 1, R5]

> "*Particularly for people with a lot of illnesses and, you know, juggling specialists and doctors and things like that. It's just been brilliant for me.*" [Patient 2, Practice 4, R5]

> "*I think I would, yes. It's going to help certain people. Yes, I would…some people don't have the mobility of looking after themselves, they sort of need other people to help them.*" [Patient 1, Practice 15, R5]

Since HCH services and support varied by practice, a few patients suggested providing additional supports and access in the form of check-in calls, follow-up emails and reminders:

> "*Probably a follow-up call, like you were saying, probably wouldn't be too bad…Yes, because some people put it aside and forget or…It might be just looked at as a reminder. I know the doctors probably wouldn't have the time to do it but the nurse… The practice nurse or someone might.*" [Patient 1, Practice 18, R2]

> "*Possible improvement?…maybe the nurse could maybe ring you once a month and say, hey guy, have you got any issues…You might not think of something or*

you might think of something, and think, well I'll ask him that next time I go, and then don't, you forget. But maybe once a month, or once every six weeks…To just keep in contact so that you know that they're there for you." [Patient 6, Practice 4, R2]

"Well, I did expect a little bit more emotional support, or something like that. Even if the nurse spent time to talk…all it needs is a phone call to see…what you're doing and how you're going…At the moment, I'm on my own. And it's very hard. My walking has actually gotten worse. So, I just struggle." [Patient 1, Practice 23, R5]

Figure 47 highlights commonly cited patient suggestions to help improve the HCH model or care enhancements they would like their practices incorporate in the future.

Figure 47: Patients' suggestions for improving HCH

Source: Case study interviews, R2 Sept–Oct 2018, R4 Nov 2019–Mar 2020, R5 Mar–May 2021.

17

Patient-reported outcomes

Box 24: Chapter summary

This chapter summarises changes in patient outcomes using the survey data.

The proportion of patients who rated their health as very good or excellent increased in wave 2 and wave 3 compared with wave 1 but was only statistically significant at wave 2.

The proportion of patients who rated their mental and emotional health as very good or excellent decreased in wave 2 and wave 3 compared with wave 1. Both were not statistically significant reductions.

Measures of health-related quality of life did not change between the survey waves.

Patients reported a reduction in emergency department attendances in the previous 12 months. The reduction was corroborated by the linked data analysis reported in Chapter 18, although the level of emergency department attendances reported in the survey is slightly higher than the results from the linked data.

Patients also reported a reduction in overnight hospitalisations in the previous 12 months. The level of hospitalisations was different to that from the linked data, and the reduction was not corroborated by the linked data. This will have been influenced by the linked data measure including both same day and overnight hospitalisations.

There are many possible reasons for the differences between the patient-reported emergency department and hospital utilisation figures and those obtained from the linked data. These include recall bias and survivor bias impacting the patient survey, as well as potential weaknesses in record linkage affecting the linked data.

Several outcome measures were tracked using the responses to the three waves of the patient surveys. Changes were estimated for these measures between the first waves and subsequent survey waves, allowing a basic form of "before and after" analysis. Limitations to this analysis include:

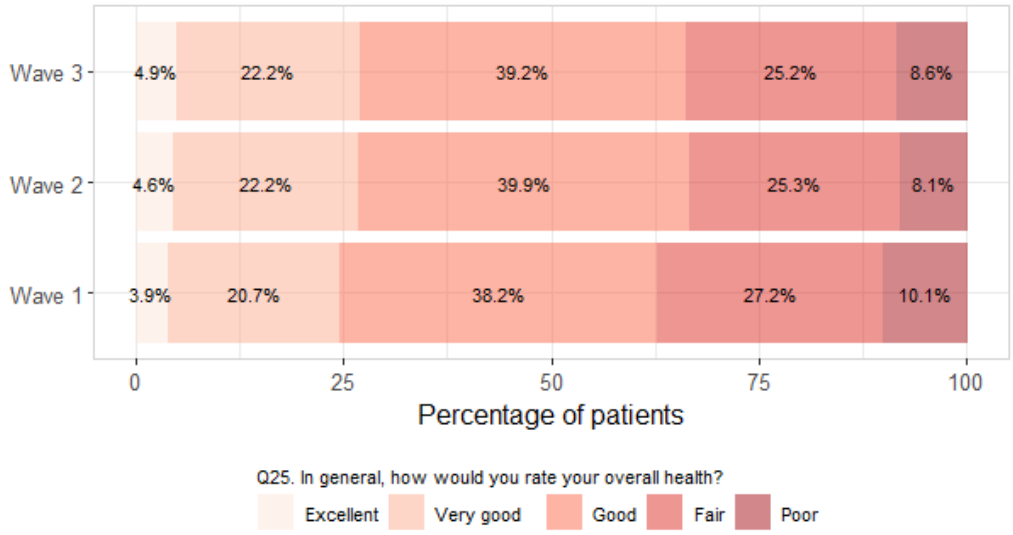
- The wave 1 survey was conducted shortly after enrolment, and consequently doesn't strictly reflect pre-enrolment status.
- There is no comparator group. Changes observed in the intervention may have occurred without the intervention, for example as a "regression to the mean" process, or alternatively as a result of factors not related to the intervention (for example, the COVID-19 pandemic).

General rating of patient's overall health

The patient survey asked: "In general, how would you rate your overall health?" Possible responses were: excellent, very good, good, fair, or poor. Figure 48 summarises the overall responses to this question across the three survey waves.

In a model adjusted for age, patient tier, and the practice characteristics of size, location and ownership, the odds of a patient rating their overall health as very good or excellent at wave 2 was 1.13 (95% CI 1.00 to 1.28) compared with wave 1, which is statistically significant. At wave 3 the odds ratio was 1.06 (95% CI 0.93 to 1.21), which is not statistically significant.

Figure 48: Patient ratings of overall health by survey wave



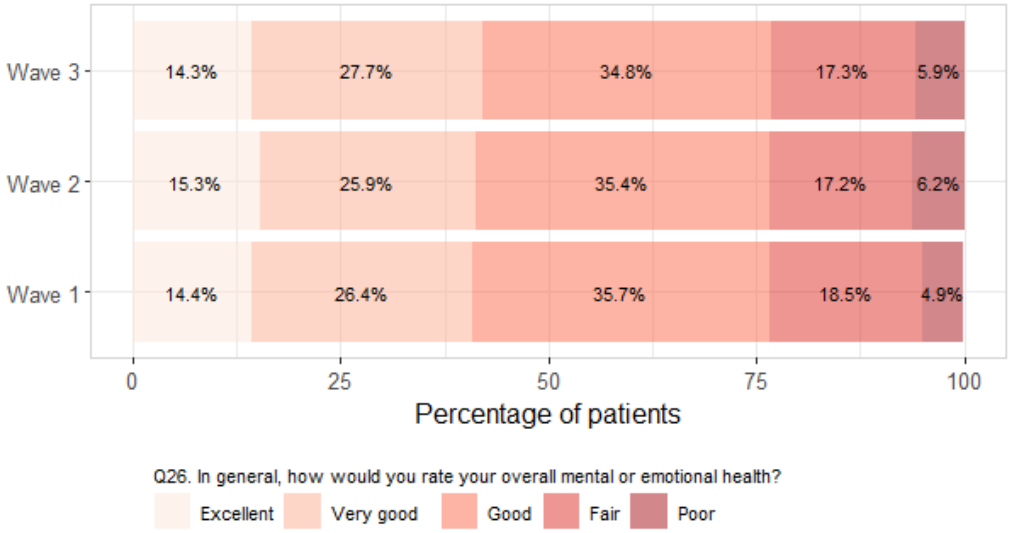
Source: Patient surveys Wave 1 Dec 2017–Mar 2019; Wave 2 Dec 2019–Mar 2020; Wave 3 Mar–Apr 2021.

General rating of patient's mental and emotional health

Patients were asked: "In general, how would you rate your overall mental or emotional health?". Possible responses again were: excellent, very good, good, fair, or poor. Figure 49 summarises the overall responses to this question across the three survey waves.

In a model adjusted for age, patient tier, and the practice characteristics of size, location and ownership, the odds of a patient rating their mental and emotional health as very good or excellent at wave 2 was 0.97 (0.87 to 1.08) compared with wave 1, and at wave 3 the odd ratio was 0.93 (0.82 to 1.04), both of which are not statistically significant.

Figure 49: Patient ratings of overall mental or emotional health by survey wave



Source: Patient surveys Wave 1 Dec 2017–Mar 2019; Wave 2 Dec 2019–Mar 2020; Wave 3 Mar–Apr 2021.

Health-related quality of life

The EQ-5D-5L instrument was used to measure health-related quality of life.[81,82] The instrument yields a score of between 0 and 100, where 100 is the best health-related quality of life. The instrument includes specific questions on mobility, self-care, usual activities, pain and discomfort, and anxiety and depression.

A summary of the total scores on EQ-5D-5L is in Volume 3 Appendix 7. Analysis of the data from the first wave suggests that patients' scores on the EQ-5D-5L are associated with their tier, age and possibly gender. Longitudinal analysis shows there was no statistical difference in the distribution of EQ-5D-5L scores at second wave and third waves compared with the first wave (Table 46).

Table 46: EQ-5D-5L estimated change (95% confidence intervals) in mean scores from wave 1

Outcome	Wave 1	Change from wave 1[1]	
	Mean (median)	Wave 2	Wave 3
Total score (EQ-5D-5L)	0.7 (0.7)	0.00 (-0.01, 0.01)	-0.01 (-0.02, 0.00)

Notes: [1] Change is estimated from an analysis involving all patients who completed at least one survey using generalised linear mixed model with random intercept terms for patient and practice. Very similar results were obtained from the same analysis using only those patients who completed all 3 surveys.
Source: Patient surveys Wave 1 Dec 2017–Mar 2019; Wave 2 Dec 2019–Mar 2020; Wave 3 Mar–Apr 2021.

[81] Devlin, N. J., & Krabbe, P. F. (2013). The development of new research methods for the valuation of EQ-5D-5L. *Eur J Health Econ, 14 Suppl 1*, S1-3.
[82] Herdman, M., Gudex, C., Lloyd, A., Janssen, M., Kind, P., Parkin, D., Bonsel, G., & Badia, X. (2011). Development and preliminary testing of the new five-level version of EQ-5D (EQ-5D-5L). *Qual Life Res, 20*(10), 1727-1736.

Self-reported emergency department and hospital utilisation

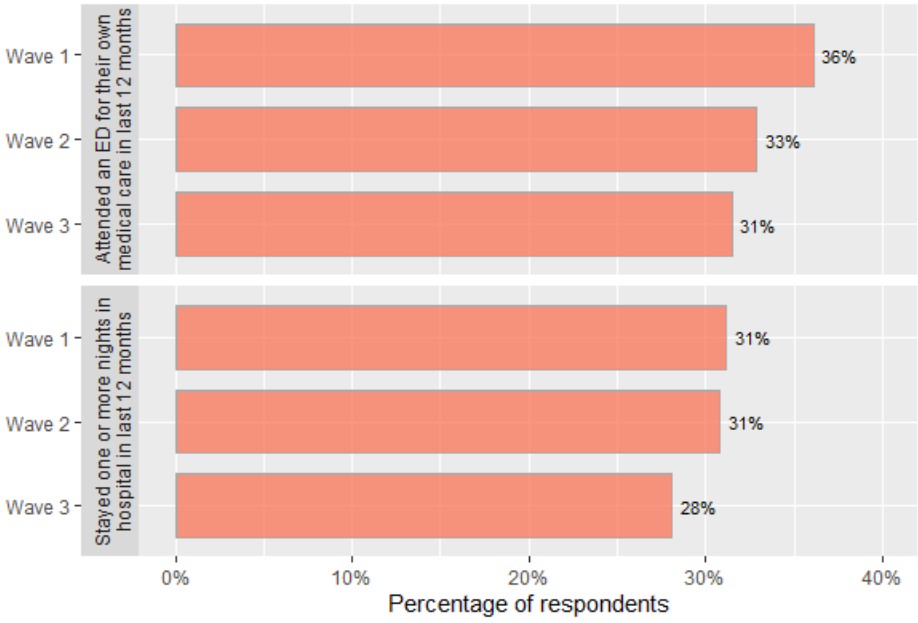
In the patient survey, patients reported a reduction in emergency department attendances in the previous 12 months, and in at least one overnight hospital stay.

The proportion of patients reporting at least one emergency department attendance in the last 12 months (36% in wave 1) is slightly higher than the results from the linked data (27.9% in the pre-enrolment period – see Figure 69, p. 244), although there is a decline for both measures.

The proportion of patients reporting at least one overnight hospital stay in the last 12 months was 31% in wave 1, and is also higher than the proportion generated from the linked data (27.2% for the pre-enrolment period – see Figure 66, p. 240). This will be influenced by the linked data measure including both same day and overnight hospitalisations. Whereas the patient-reported measure shows a decline, the linked data does not.

There are many possible reasons for the differences between the patient-reported and linked data, including recall bias and survivor bias impacting the patient survey, as well as potential weaknesses in record linkage affecting the linked data.

Figure 50: Patient-reported emergency department and hospital utilisation by survey wave



Source: Patient surveys Wave 1 Dec 2017–Mar 2019; Wave 2 Dec 2019–Mar 2020; Wave 3 Mar–Apr 2021.

18

Patient outcomes: Linked data

Box 25: Chapter summary

This chapter reports on analysis linked routinely collected data to examine changes in patient utilisation of primary care, secondary care and community-based services. Medicare claims for primary care services, including non-referred GP consultations and GP management plan and team care, could be made for patients enrolled in HCH where the services were unrelated to the management or treatment of their chronic conditions. This chapter also examines changes in patient outcomes including prescribed medicine use, admission to hospital, presentation to a hospital emergency department, admission to an aged care facility, cardiovascular events and mortality. These changes in HCH patients were compared with those in "comparator" patients, who were not participating in the HCH program but were matched to HCH patients, so they had similar pre-enrolment demographic characteristics and patterns of health service use. Note that the comparators for the analysis in this chapter were drawn from linked hospital, emergency department, MBS/PBS and other data (not practice data as in Chapter 15).

The main findings are:

- Following enrolment, HCH patients had fewer claims for unreferred GP consultations than comparator patients.
- In the pre-enrolment period, greater proportions of HCH patients had a claim for the development of GP Management Plan, development of Team Care Arrangement and review of these care plans than comparators. Following enrolment, claims for these items by HCH patients significantly decreased.
- HCH patients had similar numbers of claims for specialist consultations and imaging services to comparator patients in both pre- and post-enrolment, but greater numbers of claims for allied health services for chronic conditions in the first year following enrolment.
- In the period following enrolment, HCH patients had slightly greater numbers of claims for any pathology test and significantly higher number of claims for HbA1c tests than comparator patients.
- More than half of HCH patients used five or more unique medicines before enrolment. This remained consistent, and similar to comparator patients, following enrolment.
- Meanwhile, very small proportions of both HCH and comparator patients had a claim for Home Medicine Review, both pre- and post-enrolment.
- Similar patterns of hospital and emergency department use were seen in HCH and comparator patients in both pre-and post-enrolment periods, in terms of proportions presenting to an emergency department, admitted to hospital (all-cause admission, emergency admission, potentially preventable hospitalisations), total number of bed-days, and weighted intensity of admission episodes (that is, total National Weighted Activity Units).
- Among patients who had not used residential aged care services before enrolment, small and similar proportions of both HCH and comparator patients had an entry to an aged care facility in the follow-up period.
- Patterns of serious cardiovascular events or mortality in both HCH and comparator patients were comparable, in both the proportions and length of time from enrolment to the event.

Measuring changes in patient outcomes using linked data

To measure changes in patient outcomes, Commonwealth and state-based routine data collections were linked to HCH enrolment data. Routine data collections included the Medicare Enrolment database, National Death Index, Medicare Benefit Schedules (MBS), Pharmaceutical Benefit Scheme (PBS), Admitted Patient Care (APC), Non-admitted Patient Emergency Department Care (NAPEDC), Non-admitted patient (NAP), and National Aged Care Data Clearing House (NACDCH). Individuals aged 16 years and over and not participating in the HCH program were selected from the Medicare Enrolment database, and their records were linked in the same way as records of HCH participants. These data are further described in Chapter 2 of Volume 3 of the evaluation report.

To estimate changes in patient outcomes that could be attributed to participation in HCH, patients enrolled in HCH were compared with "comparator" patients – individuals not enrolled in the HCH. Comparator patients were matched to HCH patients so they had similar characteristics in the 12 months before enrolment in terms of demography (age, sex, PBS beneficiary status, remoteness and socio-economic disadvantage quintile of residential location), health status (morbidities, use of medicines), use of primary care (number of GP consultations and continuity of care with usual provider), use of secondary care (number of consultations with specialists and allied health providers, number of claims for pathology and imaging services), use of aged care services (community and residential), and patterns of hospital admissions (number of admissions, urgency of admission, preventable hospitalisation, total bed-days, and total national weighted activity units). Full details of the data sources and methods for HCH and comparator patients are reported in Chapter 3 of Volume 3 of the evaluation report. Volume 3 Appendix 6 presents detailed tables of changes in patient outcomes.

The HCH practices received a bundled payment for services relating to care for the chronic conditions for which a patient was enrolled. A core list of MBS items was identified for which claims were restricted for HCH patients. They included MBS Group A15 – Chronic Disease Management Items, MBS Group A17 – Domiciliary and Residential Medication Management Review items. However, HCH practices could make MBS claims for HCH patients for consultations or clinical services not relating to HCH core services, which included standard GP consultations. As such, marked differences in MBS claim-based measures of utilisation of GP and GP-coordinated services in the post-enrolment period between HCH patients and comparators are likely to be attributable restrictions to services related to chronic disease care, rather than participation in HCH.

Utilisation of primary care services

Utilisation of primary care services was examined for three years following enrolment, using linked records of MBS claims. Measures included changes in the number of claims for unreferred GP consultations, development and review of chronic disease care plans, and medication management reviews, noting that these services largely relate to HCH core services, funded through the bundled payment and restricted for HCH patients.

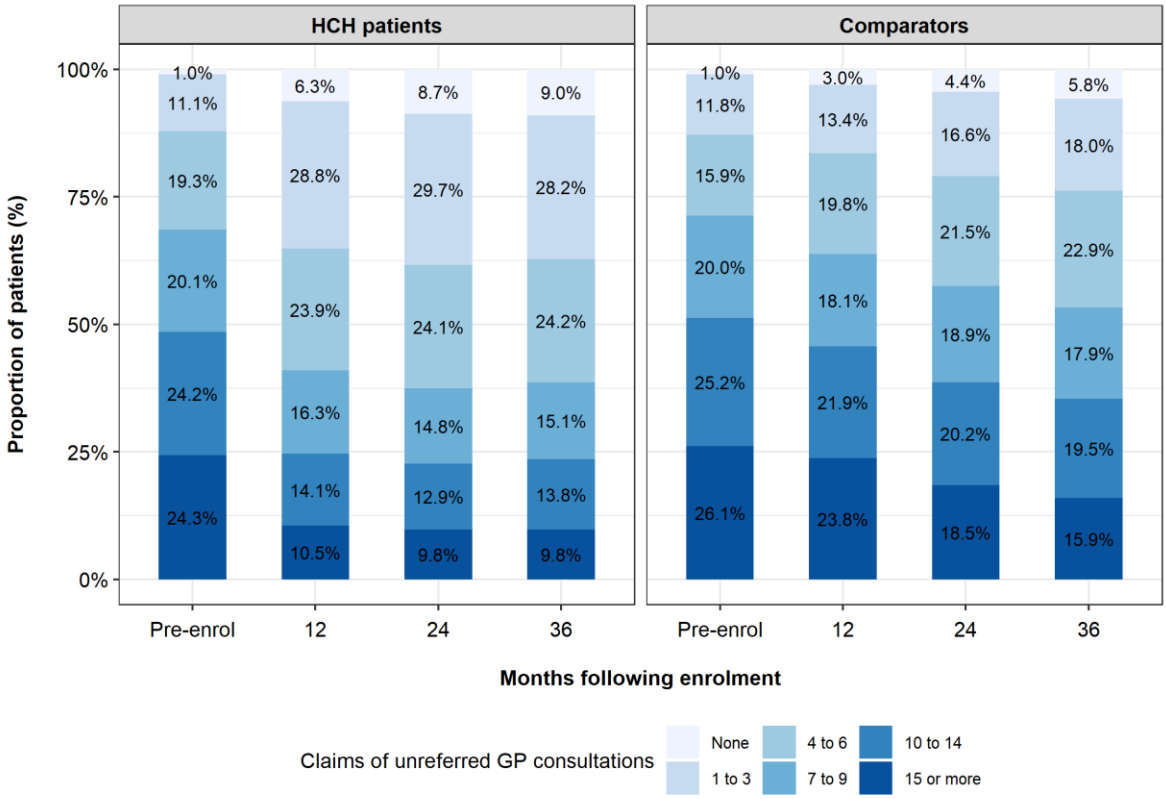
Annual numbers of claims for unreferred GP visits among HCH patients decreased by 36% from a mean of 11.0 claims before enrolment to approximately 7.0 claims following enrolment. A reduction in claims for unreferred GP visits among comparators was also observed, but to a lesser extent than in HCH patients (mean 11.4 before enrolment to approximately 10.0 in the post-enrolment period).

In the period before enrolment, greater proportions of HCH than comparator patients had claims for development or review of a GP Management Plan, development or review of a Team Care Arrangement and performance of a Medication Management Review. Following enrolment, claims for these items among HCH patients decreased significantly.

Non-referred GP consultations

While the bundled payment was intended to cover standard consultations related to an enrolled patient's chronic and complex conditions, participating GPs in HCH practices could still claim for consultations not relating to patients' chronic conditions. In the year before enrolment, almost all HCH patients had seen a GP, with an average of 11.0 (std 8.2) GP consultations. One third (30.4%) of HCH patients had up to six GP visits; one quarter (24.2%) had 10 to 14 consultations, and one quarter (24.3%) had 15 or more consultations (Figure 51). These findings are consistent with the number of GP encounters within the same practice in the pre-enrolment period as measured through practice data extracts, as shown in Figure 28 (p. 177), suggesting that patients largely sought care within the practice.

Figure 51: Claims for unreferred GP consultations among HCH and comparator patients



Notes: People with length of follow-up shorter than respective yearly anniversary were excluded from analyses.
Source: MBS claims of items in Groups A1 & A2.

Following enrolment, the proportion of HCH patients with one or more GP consultation claims decreased to 93.7% the first year (mean number of claims 7.0) and further dropped to 91% in subsequent years (mean 6.6 at year two and year three). There was a significant reduction in the proportion of patients with 10 or more claims.

Comparator patients matched with HCH patients at baseline also had fewer GP consultation claims in subsequent years, but to a lesser extent. The mean number of claims was 10.6 in the first year, 9.4 in the second year and 8.8 in the third year. There was a large reduction in the proportion of comparator patients with 10 or more claims (Figure 51), but this was not as large as the reduction for HCH patients, particularly in the 12 months following enrolment.

The observed reductions in GP consultation claims amongst HCH patients in the post-enrolment periods are likely to reflect the role of the bundled payment. However, the presence of some GP claims in the post-enrolment periods also suggests that HCH patients sought care for health issues other than their chronic conditions, and received care from GPs who were not participating in the HCH trial, both within HCH practices and in other practices.

Continuity of care with usual GP providers

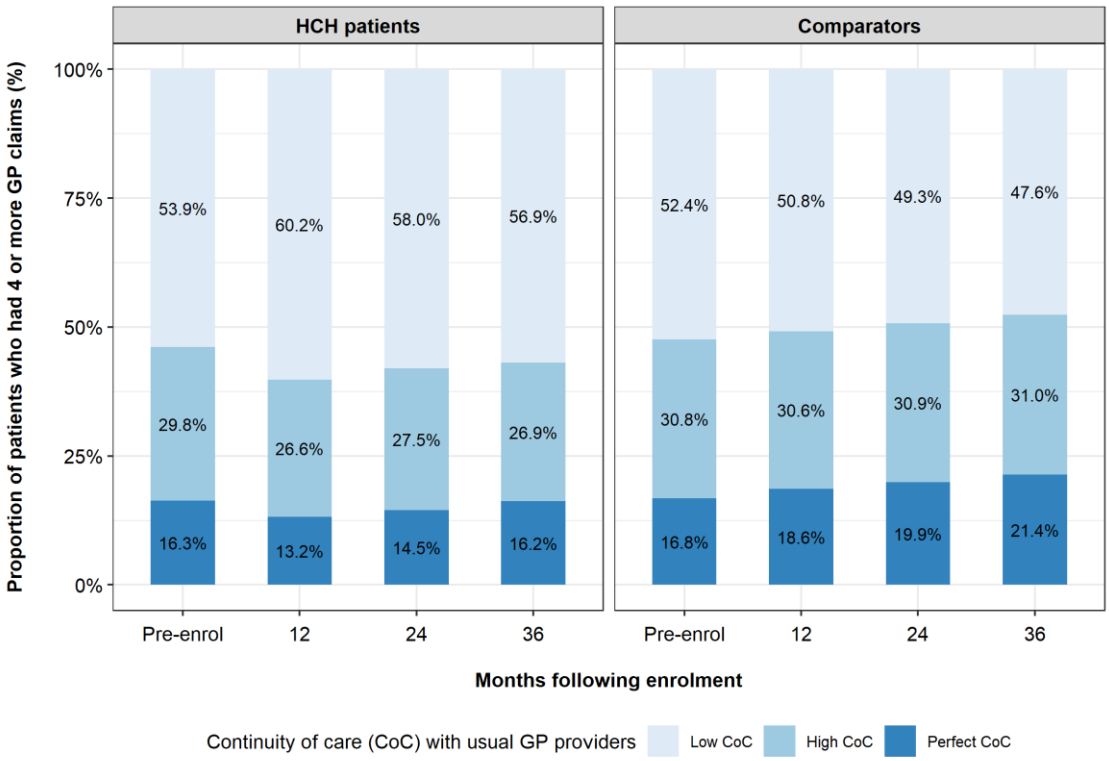
The usual provider of care index (UPC) is commonly used to measure continuity of care with a usual GP provider. For patients who had four or more unreferred GP claims, the UPC score was calculated as the number of claims for visits to the GP with the highest number of visits ("usual provider") divided by the total number of claims for GP visits.

Among HCH patients with four or more GP visits in the year leading to enrolment, 16.3% had perfect continuity of care with their GP provider (UPC score=1), indicating all visits were with a single provider throughout the year. A third (29.8%) had a high level of continuity of care (0.75≤UPC score <1) while slightly more than half (53.9%) had a low level of continuity of care (UPC score <0.75) with their usual GP provider (Figure 52).

Due to the expected reduction in the number of claims for GP visits made by HCH patients, it is not possible to directly compare levels of continuity of care amongst HCH patients between the pre- and post-enrolment periods. In the first year following enrolment, in patients with four or more GP claims, 13.2% had perfect a perfect level of continuity of care and 26.6% had a high level of continuity of care with usual provider. In the second years, these proportions increased slightly, to 14.5% and 27.5% respectively.

Accordingly, it is also not possible to directly compare levels of continuity of care between HCH and comparator patients in the post-enrolment period. Among comparator patients, while similar to HCH patients at baseline, the proportions of patients with perfect levels of continuity of care increased over time, from 16.8% in the pre-enrolment period to 18.6% in year one, 19.9% in year two and 21.4% in year three of follow-up (Figure 52).

Figure 52: Usual provider of care (UPC) index score for continuity of care (CoC) among HCH and comparator patients who had four or more GP claims



Notes: People with duration of follow-up shorter than yearly anniversaries were excluded from analyses. "Low CoC" indicates a UPC score <0.75. "High CoC" indicates a UPC score between 0.75 and 1. "Perfect CoC" indicates a UPC score of 1.
Source: MBS claims of items in Groups A1 & A2.

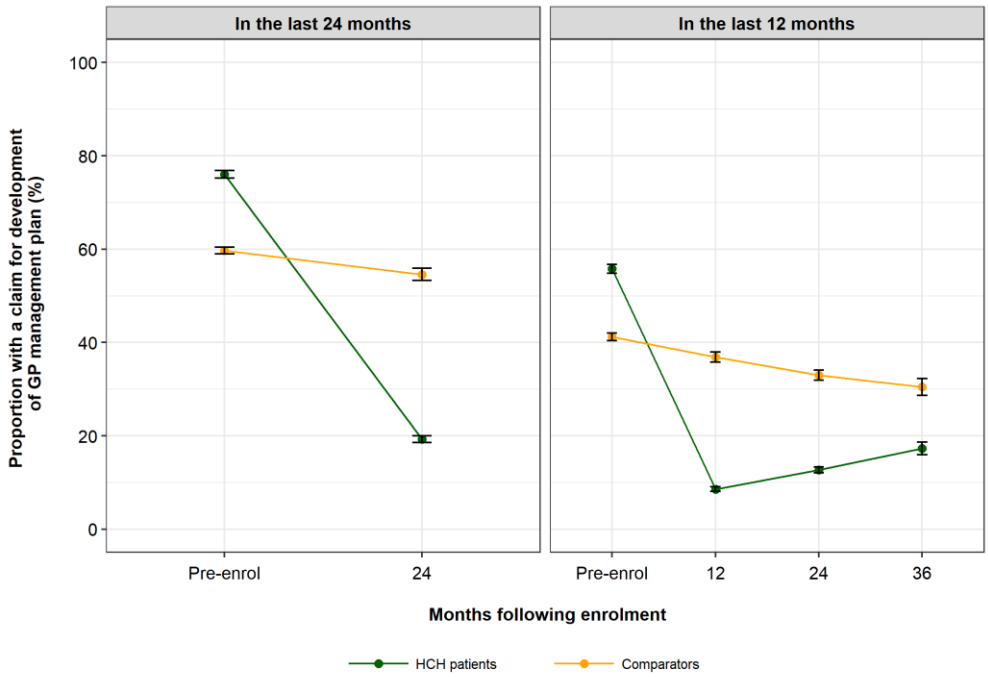
Chronic disease management care plan

Development or review of chronic disease management care plans, including GP Management Plan (GPMP), Team Care Arrangement (TCA), Multidisciplinary Care Plan was required for patient enrolment into the HCH program. These activities are funded through the bundled payment, hence HCH practices could not claim for these activities.

In the two-year period before enrolment, 76.0% of HCH patients had a claim for GPMP development, while only 19.3% had a claim for GPMP development in the two years after enrolment. In the year before enrolment, 55.8% of HCH patients had a GPMP claim; in subsequent years this proportion dropped to 8.6% at year one before increasing to 12.7% at year two and 17.3% at year three (Figure 53).

Comparator patients were not matched to HCH patients on the presence of claims for GPMP care plan before enrolment. In the two years before enrolment, a lower proportion of comparators (59.7%) had a claim for development of a GPMP and this proportion decreased to 54.6% in 24 months following enrolment. Yearly claims for GPMP item 721 declined over time, from 41.2% pre-enrolment to 30.5% in year three (Figure 53).

Figure 53: Claims for development of a GP Management Plan among HCH and comparator patients

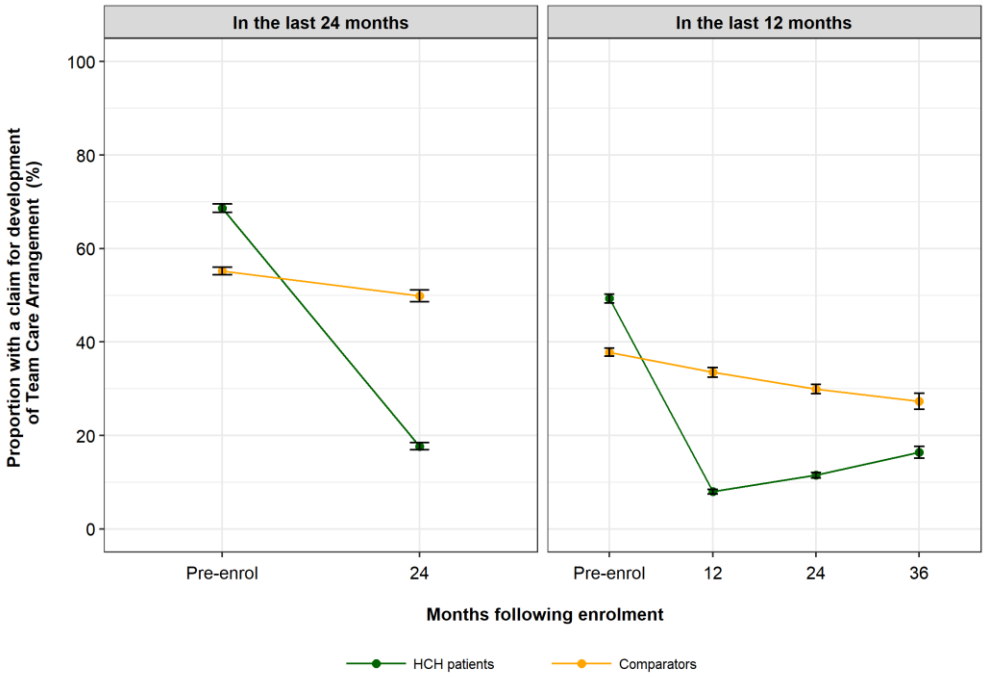


Notes: People with duration of follow-up shorter than biennially or yearly anniversary were excluded from analyses.
Source: MBS claims of item 721.

Patterns of claims for TCA development (item 723) in HCH patients (Figure 54) mirrored the pattern for GPMP development. In the two years before enrolment, two thirds (68.6%) of HCH patients had a claim for TCA development, and this dropped to 17.7% by the biennial anniversary. In the year before enrolment, 49.3% had a claim for TCA development, while the proportions having a claim dropped to 8.0% at year one before increasing to 11.5% and 16.4% by the end of years two and year three, respectively.

Comparator patients were not matched with HCH patients on claims for TCA development at baseline. A lower proportion of comparator patients had a claim for TCA development in the two-year period pre-enrolment (55.2%), and this proportion then decreased to 49.9% over the next two years. Yearly claims for this item also showed a decline over time, from 37.8% pre-enrolment to 27.3% at year three (Figure 54).

Figure 54: Claims for Team Care Arrangement development or review among HCH and comparator patients

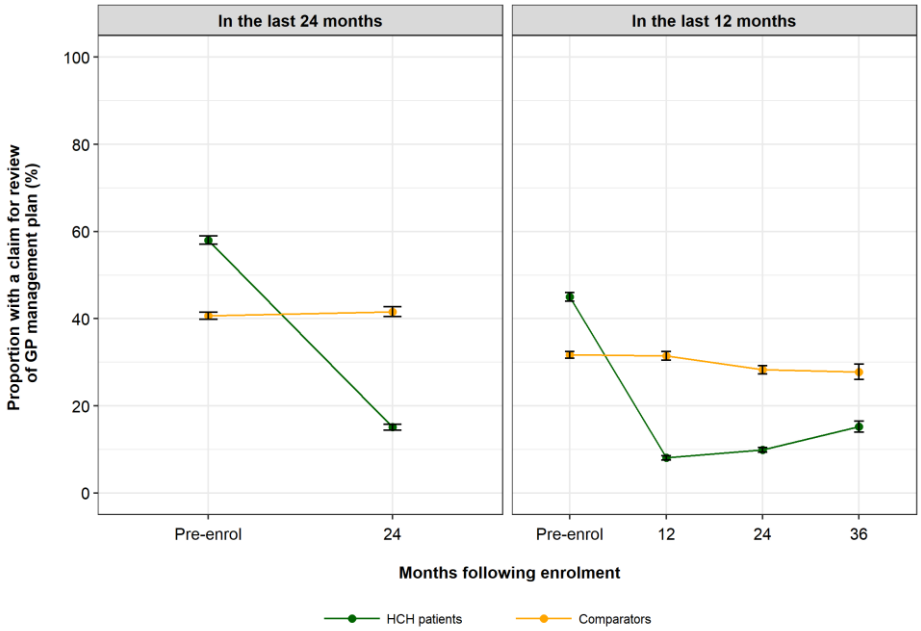


Notes: People with duration of follow-up shorter than biennially or yearly anniversaries were excluded from analyses.
Source: MBS claims of item 723.

Claims for a review of GPMP and/or TCA (items 731, 732, 729) also showed similar patterns. In the two years before enrolment, more than half (57.9%) of HCH patients had their chronic disease management plans reviewed; and at the biennial anniversary this proportion was 14.2%. In the year before enrolment, 44.9% had a review. In the first year following enrolment 7.7% had a claim for a review, then these proportions increased to 9.0% and 14.0% in the second and third year (Figure 55).

Comparator patients were not matched with HCH patients on the review of care plans in the pre-enrolment period. Comparator patients had lower proportions having a GPMP/TAC reviewed in the 24 months pre-enrolment (40.2%) and at biennial anniversary (40.7%). Yearly claims for care plan review declined slightly over time, from 31.3% pre-enrolment to 26.1% at year three (Figure 55).

Figure 55: Claims for review of chronic disease management plans among HCH and comparator patients



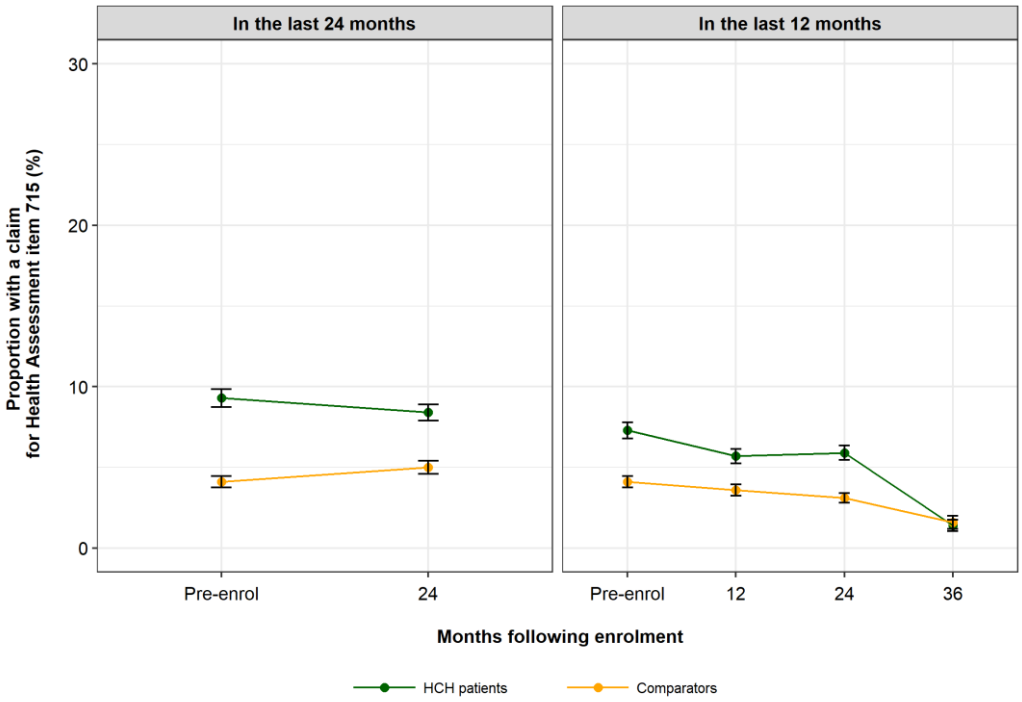
Notes: People with duration of follow-up shorter than biennially or yearly anniversary were excluded from analyses.
Source: MBS claims of items 731, 732 and 729.

Claims for Health Assessment for Aboriginal and Torres Strait Islander People

Health Assessments for people of Aboriginal and Torres Strait Islander descent (item 715) were not considered as a core HCH service. Information on the Aboriginal and Torres Strait islander status of HCH or comparator patients was not available.

Among HCH patients, 9.3% had a claim for item 715 in two years before enrolment and 8.4% had a claim for this item in the next two years. These proportions were greater than in comparator patients (5.4% pre-enrolment and 5.0% post-enrolment), which likely reflects the active participations of ACCHS and their patients in the HCH program (Figure 56).

Figure 56: Claims for Health Assessment for Aboriginal and Torres Strait Islander People among HCH and comparator patients



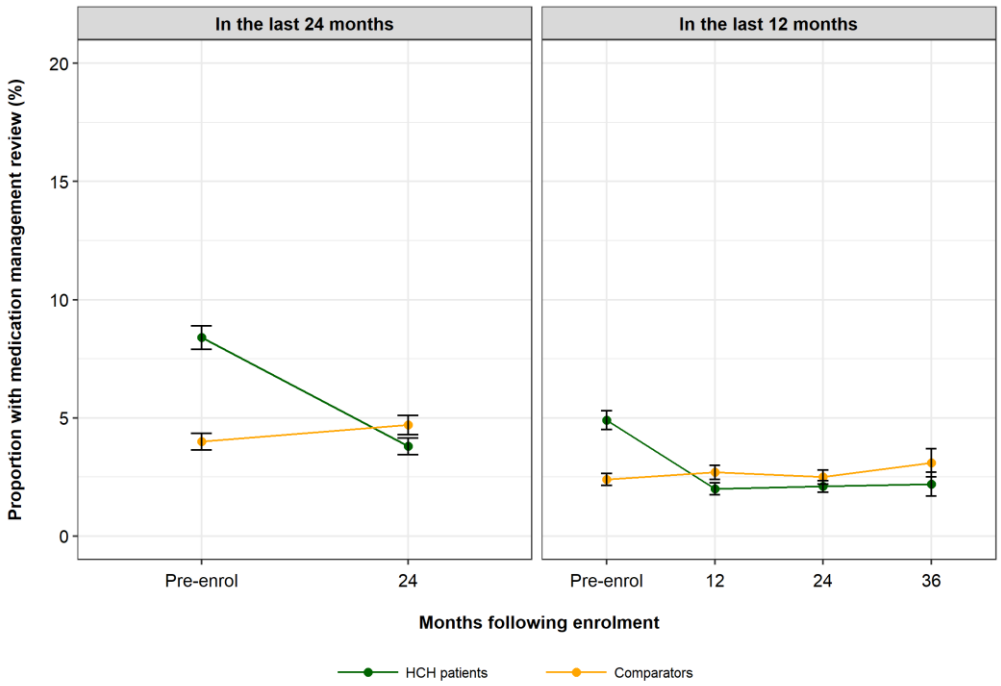
Notes: People with length of follow-up shorter than respective biennial and yearly anniversaries were excluded from analyses.
Source: MBS claims for item 715.

Claims for medication management review

Medication management review was considered a core HCH service and was funded through the bundled payment, thus HCH practices were not eligible to claim for Domiciliary and Residential Medication Management Reviews (items 900 and 903). In the two years before enrolment, 8.4% of HCH patients had a claim for medication management review, dropping to 3.8% by the first biennial anniversary (Figure 57).

In comparator patients, who were not matched with HCH patients on presence of a claim for medication review, these proportions were 4.0% and 4.7%, respectively (Figure 57).

Figure 57: Claims for medication management review among HCH and comparator patients



Notes: People with length of follow-up shorter than respective biennial and yearly anniversary were excluded from analyses.
Source: MBS claims of items 900 and 903.

Utilisation of other Medicare-funded services

Utilisation of other Medicare-funded services was examined for three years following enrolment in the HCH program, using linked records of MBS claims. Measures included changes in the number of consultations with specialist providers, allied health services for chronic disease, pathology services (any test, lipid and HbA1c tests), and imaging services.

Specialist consultations were not funded through the bundled payment and could be billed as per usual via the MBS along with episodic care unrelated to a patient's chronic condition. Overall, about 60% of both HCH and comparator patients had one or more visits to specialist providers in the year pre-enrolment (mean 3.4 and 3.3 respectively). Following enrolment, numbers of specialist consultations decreased slightly in both HCH and comparator patients.

In addition to eligibility for MBS-funded allied health services as per usual, HCH patients who had a HCH shared care plan developed were eligible for group allied health services provided by eligible diabetes educators, exercise physiologists and dietitians. HCH patients tended to use more allied health services for chronic disease conditions, especially in year one following enrolment, where 52.5% had at least one allied health session (mean 2.0) compared with 38.7% (mean 1.5) among comparator patients.

Pathology services were not funded through the HCH bundled payment. Utilisation of pathology services should be interpreted in the context of "MBS coning rules" for pathology episode services. According to these rules, when more than three items are requested in an episode by a GP for an out-of-hospital service, Medicare only pays for the three most expensive items. As such, findings regarding use of **any** pathology services are unlikely to be

affected by the coning rules, but findings regarding a particular service, such as lipid and HbA1c tests, may be. Nevertheless, the coning rules are unlikely to impact differences in pathology service utilisation between HCH and comparator patients, unless one group is more likely to have large numbers of pathology services requested in an episode.

Almost all HCH and comparator patients (90% or more) had a claim for any pathology test in the year before enrolment. During the post-enrolment period, the proportions remained stable among HCH patients, while there was a minor reduction in comparator patients. A quarter of HCH and comparator patients had a record of lipid tests, and slightly more than half of patients had a record for HbA1c tests in the year before enrolment. Following enrolment, although there was a decrease in proportions of patients having these tests in both groups, the number of claims for lipid and HbA1c were higher in HCH patients.

Diagnostic imaging services delivered outside the HCH practice could be billed as per usual via the MBS along with episodic care unrelated to a patient's chronic condition. Meanwhile, diagnostic services provided in-house by a HCH practice as part of the monitoring and management of an enrolled patient's chronic and complex conditions were funded through the bundled payment. Overall, in the year before enrolment, two thirds of HCH and comparator patients (66%) had a claim for any imaging test. During the post-enrolment period, the proportions remained stable among HCH patients while there was a minor reduction in comparator patients.

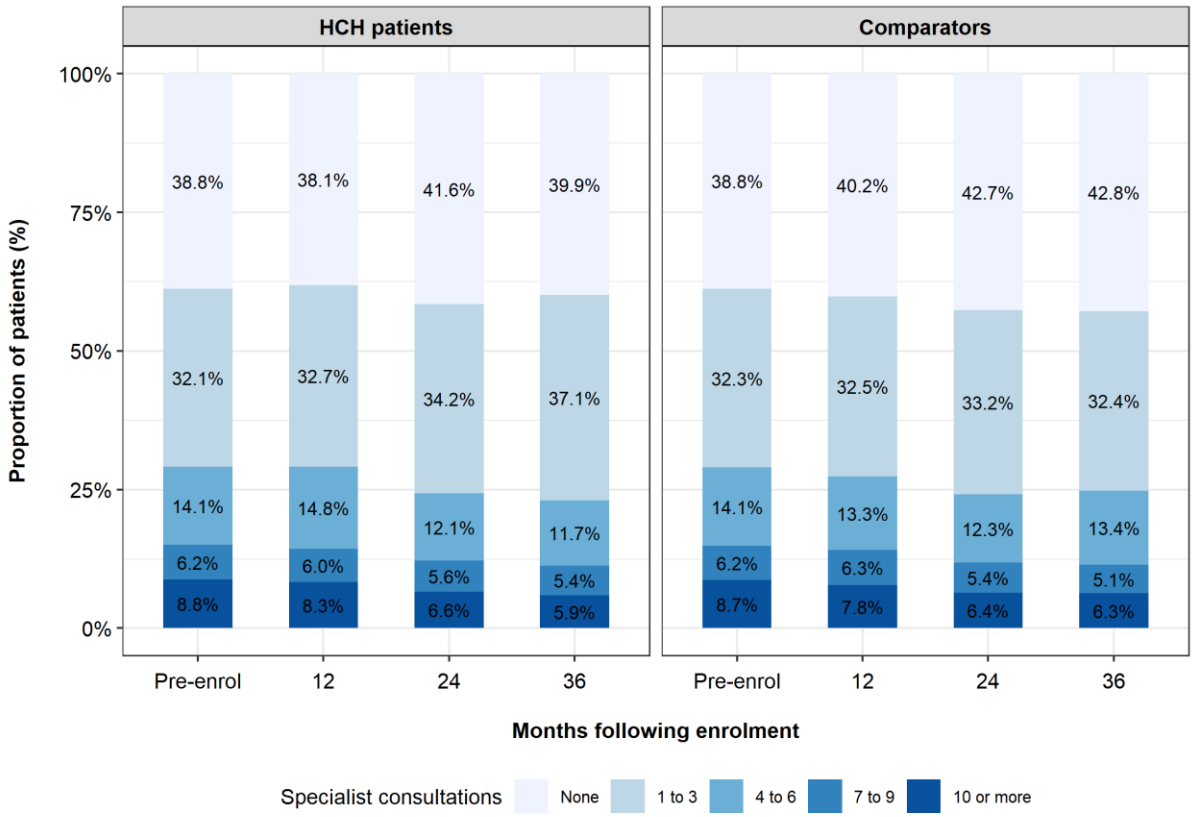
Specialist consultations

Claims for MBS-funded consultations with specialist providers for HCH patients could be billed as per usual.

Among HCH patients, nearly two thirds (61.2%) had one or more claims for specialist visit in the year before enrolment, with a mean of 3.4 claims (std 6.8, median 1). About a third had one to three visits and 14% had four to six visits. Following enrolment, there was no change in the numbers of specialist consultation claims in year one (mean 3.4) while there was a minor reduction in year two (mean 2.9) and year three (mean 2.8).

Comparator patients, who were matched with HCH patients on number of specialists claims in the pre-enrolment period, had similar patterns of claims for consultations with specialists in the follow-up period. The mean number of specialist visits decreased slightly, from 3.3 pre-enrolment to 2.8 in both year two and year three (Figure 58).

Figure 58: Claims for specialist consultations among HCH and comparator patients



Notes: People with length of follow-up shorter than respective yearly anniversary were excluded from analyses.
Source: MBS claims for items in Groups A3, A4, A8, A9, A12, A13, A16, A21, A24, A26, A28, A29, A31, A32, subgroup A15-02 (items 820 to 880) and subgroup T06-01.

Allied health services for chronic disease

Under Medicare benefits, patients with chronic conditions and complex care needs who had a GPMP and TCA prepared by their GP can access a maximum of five individual services each calendar provided by eligible allied health providers (MBS items 10950 to 10970). These services can be provided by Aboriginal Health Workers or Aboriginal and Torres Strait Islander Health Practitioners, audiologists, diabetes educators, dieticians, chiropractors, exercise physiologists, mental health workers, occupational therapists, osteopaths, physiotherapists, podiatrists, psychologists and speech pathologists. When patients enrolled in the HCH program, the number of MBS-funded allied health services that an enrolled patient may access each calendar year remains the same as is currently available under the MBS, that is, no more than five per calendar year.

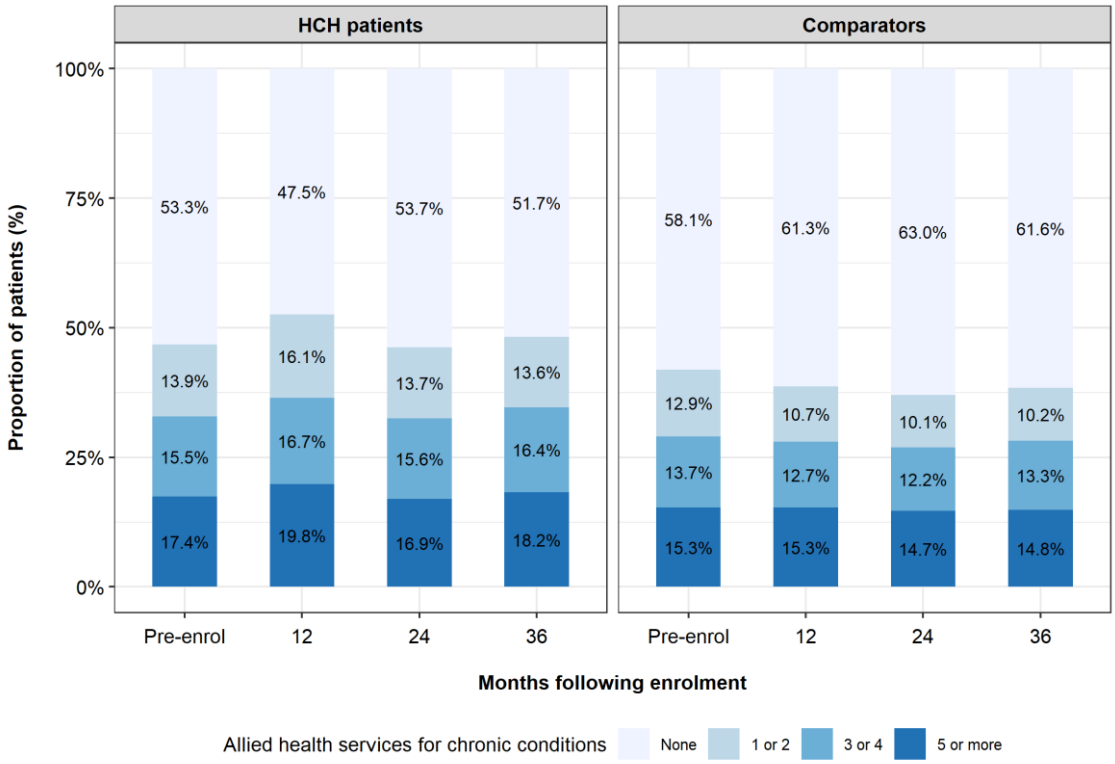
In addition to individual services, on referral from a GP or medical practitioner, patients with type 2 diabetes who had a GPMP or a Health Care Home shared care plan can access group allied health services provided by eligible diabetes educators, exercise physiologists and dietitians (MBS items 81100 to 81125).

In the year before enrolment, slightly less than half of HCH patients (46.7%) received one or more allied health services for chronic disease management (mean 1.7, std 2.3). In the year

following enrolment, this increased to 52.5% (mean 2.0, std 2.4) and remained at 46.3% (mean 1.7, std 2.2) at year two and 48.3% (mean 1.8, std 2.3) at year three of follow-up.

Comparator patients were not matched on the use of allied health for chronic disease management in the pre-enrolment period but were matched on the use of any allied health services. The proportion of comparator patients with one visit or more was 41.9% in the pre-enrolment period (mean 1.5, std 2.2), and this declined to 38.7% at year one (mean 1.5, std 2.2), 37.0% at year two (mean 1.4, std 2.1), and 38.4% at year three (mean 1.4, std 2.1) (Figure 59).

Figure 59: Claims for allied health services for chronic disease management among HCH and comparator patients



Notes: People with length of follow-up shorter than respective yearly anniversary were excluded from analyses.
Source: MBS claims of items 10950-10970; 81100– 81125.

Use of pathology services

Pathology services were not included in the HCH bundled payment and continued to be funded through the MBS.

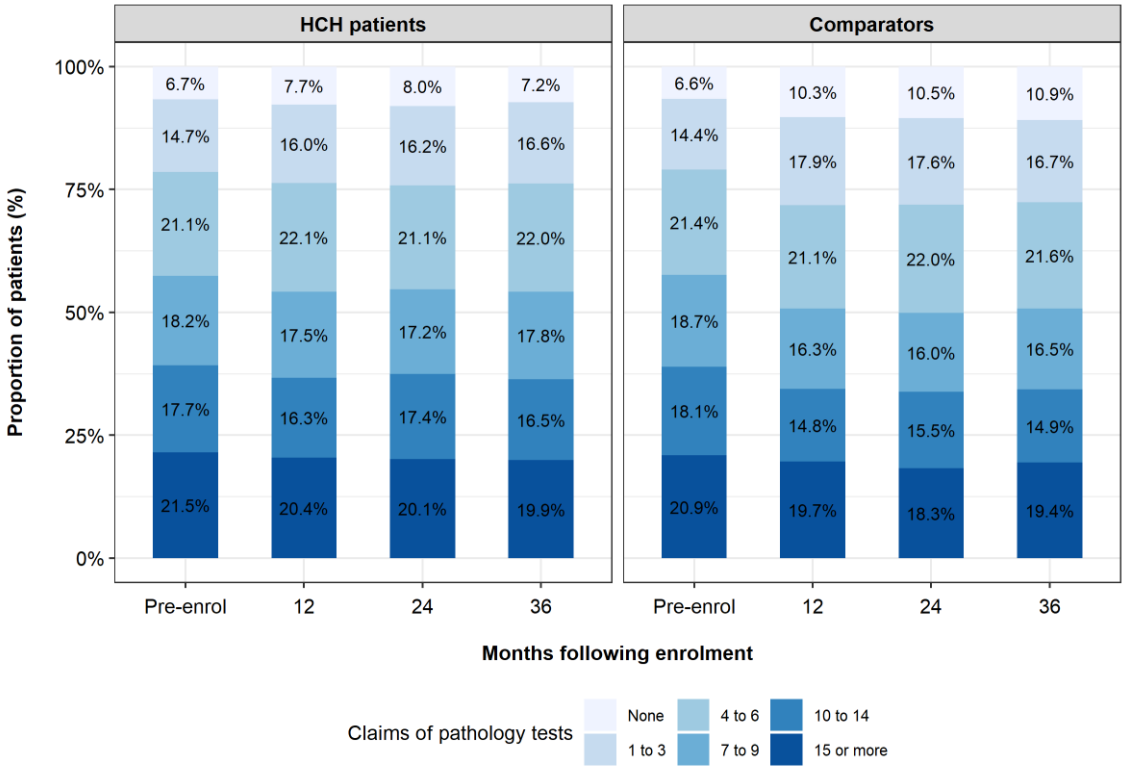
Claims for any pathology test

Almost all HCH patients (93.3%) had one or more claim for any pathology test in the year pre-enrolment, with a mean of 11.0 claims (std 13.1, median 8). In the periods following enrolment, the proportion of HCH patients with one or more claims remained stable at approximately 92%.

In comparator patients, who were matched to HCH patients on the number of claims for any pathology test at baseline, there was a reduction in the proportion with one or more claims,

from 93.4% pre-enrolment to 89.7% at year one, 89.5% at year two and 89.1% at year three of the follow-up period (Figure 60).

Figure 60: Claims for any pathology tests among HCH and comparator patients



Notes: People with length of follow-up shorter than respective yearly anniversary were excluded from analyses.
Source: MBS claims of items in Groups P01 to P09.

Claims for lipid tests

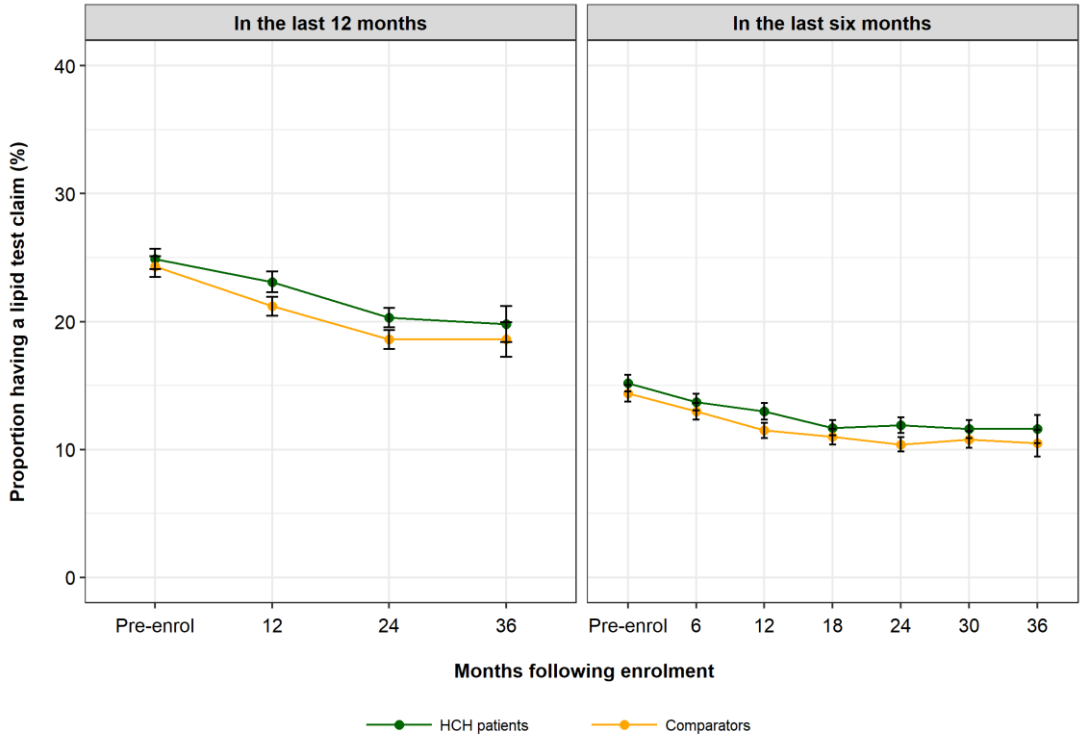
One in four HCH patients (24.9%) had one or more records of claims for lipid tests in the year before enrolment and 15.2% had a record in the six months before enrolment. Following enrolment, the proportions having a lipid test in the last 12 months reduced slightly to 23.1% at year one, 20.3% at year two and 19.8% at year three (Figure 61).

Although comparator patients were not matched with HCH patients on whether they had a claim for lipid tests in the pre-enrolment period, they were matched on the number of claims for any pathology test. The proportion of comparator patients with a claim for lipid tests in the year pre-enrolment (24.3%) was similar to HCH patients, but it was lower at year one (21.2%) and year two (18.6%) following enrolment. Claims for lipid test at six monthly intervals were similarly higher in HCH patients than comparator patients for most of the follow-up (Figure 61).

The proportions of HCH and comparator patients who had lipid tests recorded in practice extract data (Figure 32, p. 181), were higher than the proportions who had MBS claims recorded for these tests. This highlights that having a lipid test done was under-ascertained in MBS claim records, potentially as a result of the MBS pathology coning rules. Nevertheless, both data sources showed similar trends in blood lipid measurement in HCH and comparator

patients and suggested that HCH patients had greater levels of blood lipid measurement in the first two years following enrolment.

Figure 61: Claims for lipid tests among HCH and comparator patients



Notes: People with length of follow-up shorter than respective yearly and six-monthly measurement period were excluded from analyses.
Source: MBS claims of items 66500, 66503, 66536 and 66539.

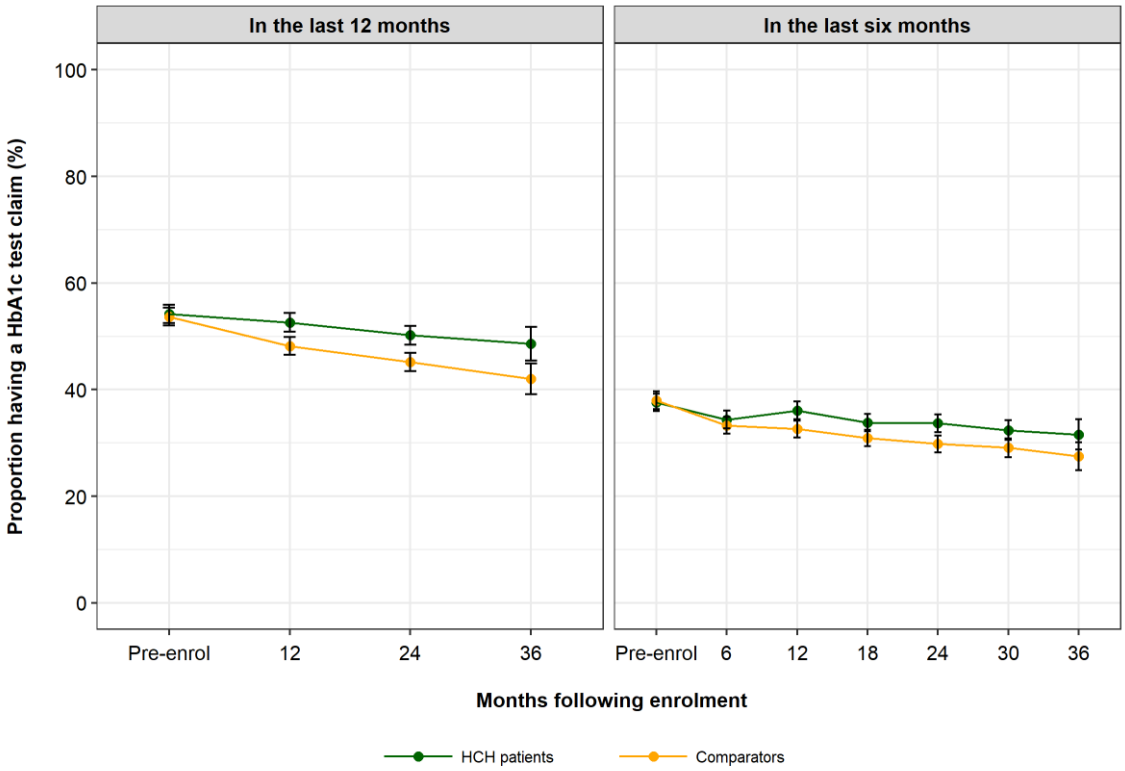
Claims for HbA1c tests

Over half (54.2%) of HCH patients with diabetes had one or more records of claims for HbA1c tests in the year before enrolment and 37.6% had a record in the six months before enrolment. Following enrolment, these proportions slightly reduced to 52.6% at year one, 50.2% at year two and 48.6% at year three.

Comparator patients with type 2 diabetes were matched with HCH patients with type 2 diabetes on whether they had a claim for HbA1c tests in the pre-enrolment period. The proportions of comparator patients with a claim for a HbA1c test was lower than HCH patients at year one (48.2%) and year two (45.2%) following enrolment. Claims for HbA1c tests at six monthly intervals were similarly higher in HCH patients than comparator patients for most of the follow-up (Figure 62).

The proportions of HCH and comparator patients who had HbA1c tests recorded in practice extract data (Figure 32, p. 181), were higher than the proportions who had MBS claims recorded for these tests (Figure 62). This highlights that having a HbA1c done was under-ascertained in MBS claim records, potentially as a result of MBS pathology coning rules. Nevertheless, both data sources showed similar trends in HbA1c measurement in HCH and Comparator patients and suggested that HCH patients had greater levels of HbA1c monitoring in the first two years following enrolment.

Figure 62: Claims for HbA1c tests among HCH and comparator patients with type 2 diabetes



Notes: People with length of follow-up shorter than respective yearly and six-monthly measurement period were excluded from analyses.
Source: MBS claims of items 66551 and 73840.

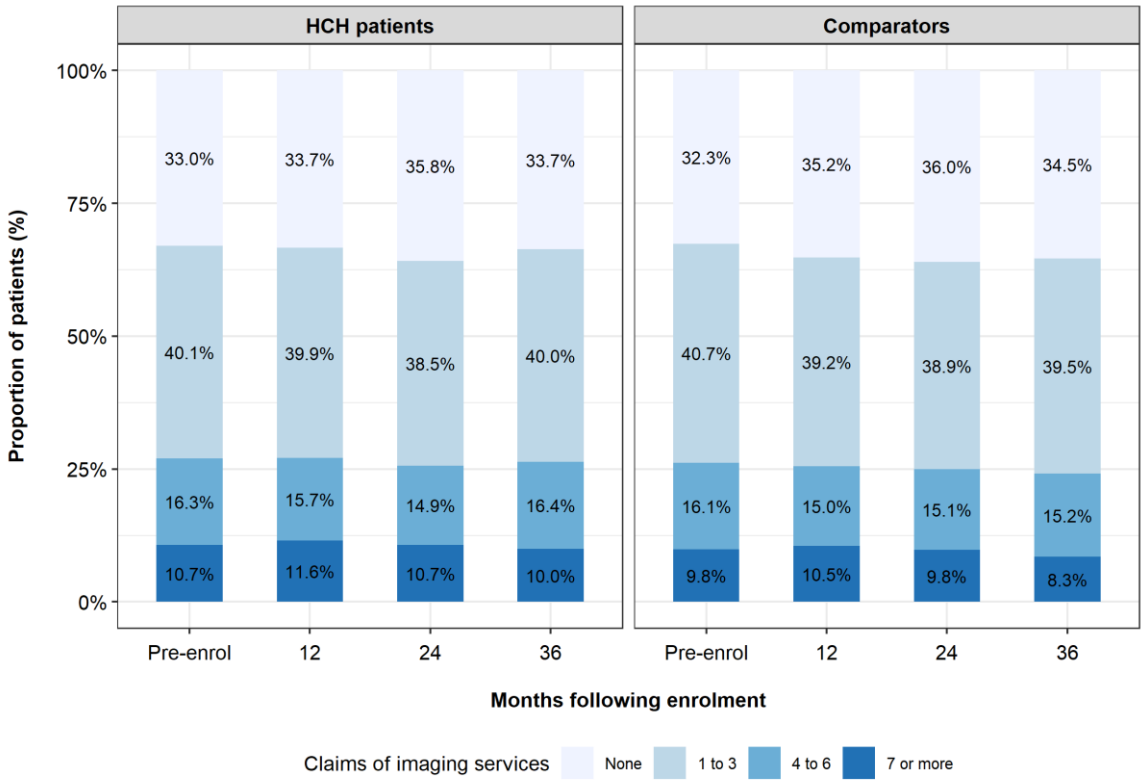
Use of imaging services

Diagnostic imaging services delivered outside the HCH practice were billed as per usual via the MBS along with episodic care unrelated to a patient's chronic condition, whereas diagnostic services provided in-house by a HCH practice as part of the monitoring and management of an enrolled patient's chronic and complex conditions were funded through the bundled payment.

Among HCH patients, two thirds of patients (67.0%) had one or more claim for any imaging services in the year pre-enrolment, with a mean of 2.6 claims (std 3.5). In periods following enrolment, there was little change in the proportions of HCH patients with one or more claims, that is, 66.3% at year one, 64.2% at year two, and 66.3% at year three (Figure 63).

Comparator patients were matched with HCH patients on the number of claims for imaging services in the pre-enrolment period (mean 2.6, std 3.5). In periods following enrolment, there was a minor reduction in proportions having a claim that is, 66.7% pre-enrolment declining to 64.8% at year one, 64.0% at year two and 65.5% at year three (Figure 63).

Figure 63: Claims for imaging services among HCH and comparator patients



Notes: People with length of follow-up shorter than respective yearly anniversary were excluded from analyses.
Source: MBS claims of items in Groups I01 to I05.

Utilisation of medicines

People with chronic illness often take several medicines to control symptoms and reduce the risk of complications. Utilisation of PBS listed medicines was examined for three years following enrolment in the HCH program, using linked records of PBS dispensings. All dispensed items recorded in the PBS data were included in the analyses except topical and non-therapeutic agents (for example, plaster and creams) and medicines in Anatomic Therapeutic Chemical (ATC) classification V (for example, allergen extracts). Evaluation measures included changes in the number of dispensings for medicines, numbers of unique medicines, and concurrent medicine use.

Unique medicines were identified according to the fifth level of their ATC code, which represents the chemical substance of the medicine (for example, A10AB04 is for insulin lispro, A10AB06 is for insulin glulisine). Each active component of combination therapy was counted separately.[83]

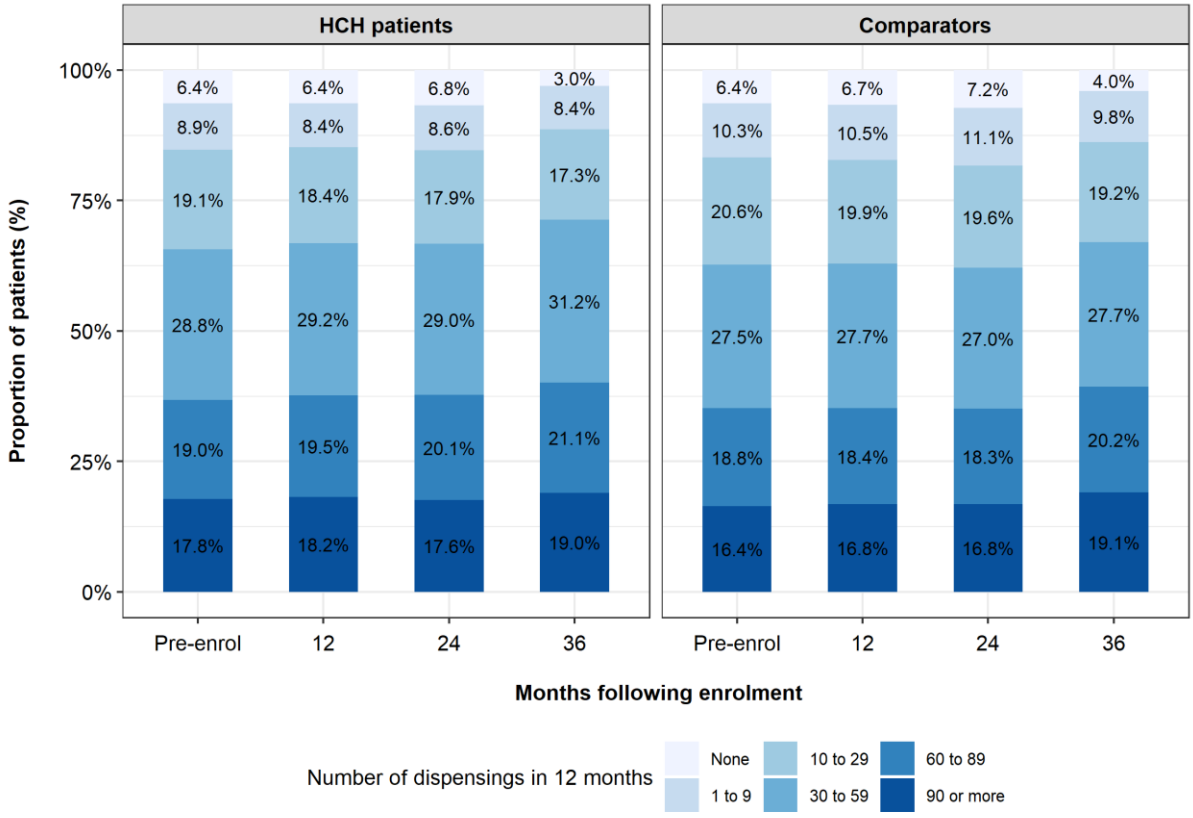
[83] Page, A. T., Falster, M. O., Litchfield, M., Pearson, S. A., & Etherton-Beer, C. (2019). Polypharmacy among older Australians, 2006–2017: a population-based study. *Med J Aust 211*(2), 71-75.

Number of medicines dispensings

Almost all HCH patients (93.6%) filled a prescription in the year before enrolment, with a mean of 52.9 dispensings (std 43.7, median 45). A third of patients (28.8%) had 30 to 59 dispensings, 19% had 60 to 89 dispensing and 17.8% had 90 or more dispensed in 12 months. The mean numbers of dispensings remained almost unchanged in the first year following enrolment (53.9) and second year (53.4) but increased slightly in the third year (57.1) (Figure 64).

Comparator patients were not matched to HCH patients on the number of dispensings at baseline, but were matched on the number of unique medicines dispensed before enrolment. Comparator patients experienced similar pattern of prescription filling as the HCH patients. On average, comparator patients had 51.2 dispensings in the year before enrolment. There was little change in mean dispensings the first year (51.6) and second year (50.9) before an increase in year three following enrolment (55.9) (Figure 64).

Figure 64: Number of medicines dispensings among HCH and comparator patients



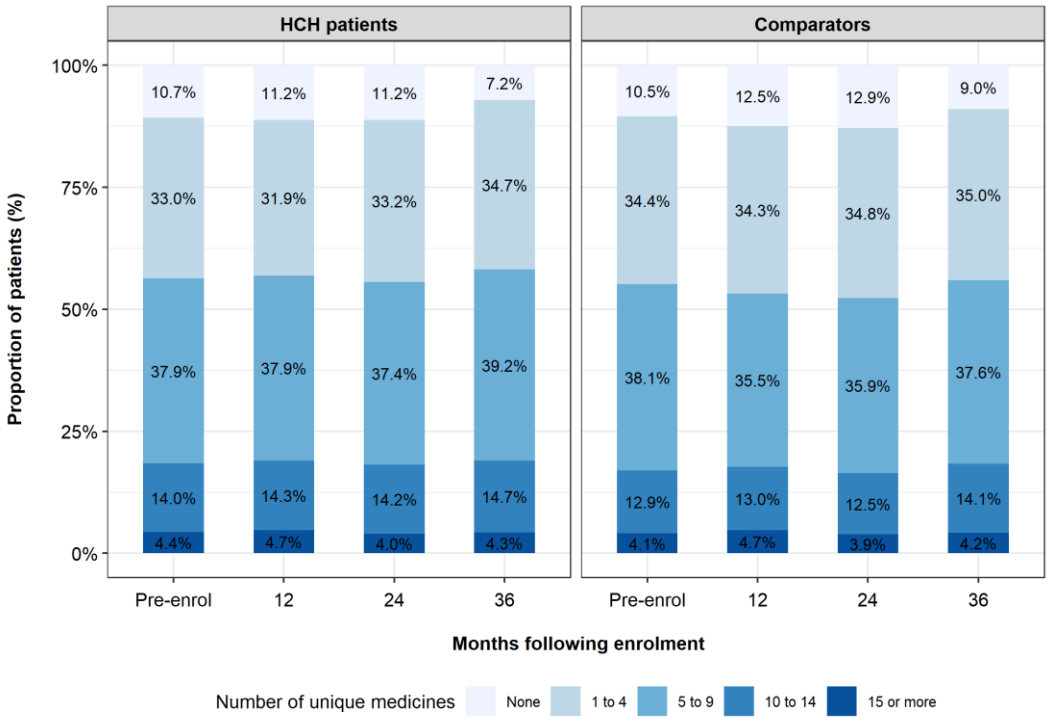
Notes: People with length of follow-up shorter than respective yearly anniversary were excluded from analyses.
Source: PBS dispensing of all items except topical and non-therapeutic agents and medicines in ATC classification V.

Number of unique medicines

The total number of unique medicines dispensed in three months was counted as an estimate for the number of concurrent treatments at a given point in time.[84] Almost all HCH patients (89.3%) were dispensed at least one medicine in the three months before enrolment, with a mean number of 5.9 (std 4.4, median 5) unique medicines per patient. More than half of HCH patients (56.3%) had dispensed five or more unique medicines (polypharmacy), while one in five (18.4%) had dispensed ten or more unique medicines (hyper-polypharmacy). This remained stable during the post-enrolment period, with a mean number of 5.9 medicines at 12 months, 5.8 at 24 months, and 6.0 at 36 months following enrolment.

The comparator group was matched with HCH patients on the number of unique medicines dispensed in the three months, the six and 12 months before enrolment (to account for seasonal fluctuations in medicine dispensing). Comparator patients experienced similar patterns of the number of unique medicines dispensed as the HCH patients, with a mean number of 5.7 unique medicines in the three months before enrolment, which remained relatively stable during the follow-up period (5.6, 5.4 and 5.9 at 12, 24 and 36 months respectively). A slightly lower proportions of comparator patients than HCH patients experienced polypharmacy and hyper-polypharmacy in the follow-up period (Figure 65).

Figure 65: Number of unique medicines among HCH and comparator patients



Notes: People with length of follow-up shorter than respective yearly anniversary were excluded from analyses.
Source: PBS dispensing of all items except topical and non-therapeutic agents and medicines in ATC classification V.

[84] Ibid.

Utilisation of hospital services

Admitted patient data and non-admitted patient data were available for patients in five states: New South Wales, Victoria, Queensland, South Australia and Tasmania. Hospital admission outcomes included the number of admissions to hospitals (all-cause, emergency and potentially preventable), total number of bed-days, and National Weighted Activity Unit (NWAU – a proxy for weighted intensity of hospital stay). Preventable hospitalisation was derived according to the definition used in the 2019 National Healthcare Agreement.[85] NWAU was calculated using the calculator for 2018–2019 developed by the Independent Hospital Pricing Authority.[86] The number of presentations to an emergency department was also calculated.

In the year before enrolment, overall, about one quarter of HCH patients were admitted to hospital (27.2%) with most of these hospital admissions were emergency admissions, and one in five for conditions considered to be a potentially preventable hospitalisation. For all HCH patients, the mean total number of bed-days per patient was 2.2 days and mean total NWAU was 0.77 units. Among admitted patients, the total number of bed-days was 8.2 days and total NWAU was 2.82 units. In the follow-up period, there was very little change in the numbers of hospital admissions (all-cause, emergency admission and potentially preventable hospitalisations), the total numbers of bed-days and total NWAU.

Comparator patients were matched with HCH patients on these measures. In the follow-up period, there was little change in terms of admissions to hospital for any reason, for emergency admission and potentially preventable hospitalisations. The was also little change in total numbers of bed-days and total NWAU.

All-cause admissions

About one quarter (27.2%) of HCH patients had been admitted to hospital for any cause in the year before enrolment, with 16.4% being admitted once, 5.9% being admitted twice, and 5.0% being admitted three or more times. This was equivalent to a mean of 2.2 total bed-days (std 9.1) over the year per patient, with 21.4% of HCH patients having 1–9 bed-days, 3.0% having 10–19 bed-days, and 2.8% having 20 or more bed-days. There was little change in the number of hospital admissions following enrolment, with 27.6% having an admission in the first year and 27.3% having an admission in the second year following enrolment. There was little change in the mean total number of bed-days, which were 2.3 (std 9.5) in the first year and 2.5 (std 10.9) in the second year following enrolment (Figure 66).

Comparator patients were matched to HCH patients on the number of admissions for any reason in the pre-enrolment period. During the follow-up period, a slightly lower proportion of comparator patients (25.5%) than HCH patients had an admission during the first year.

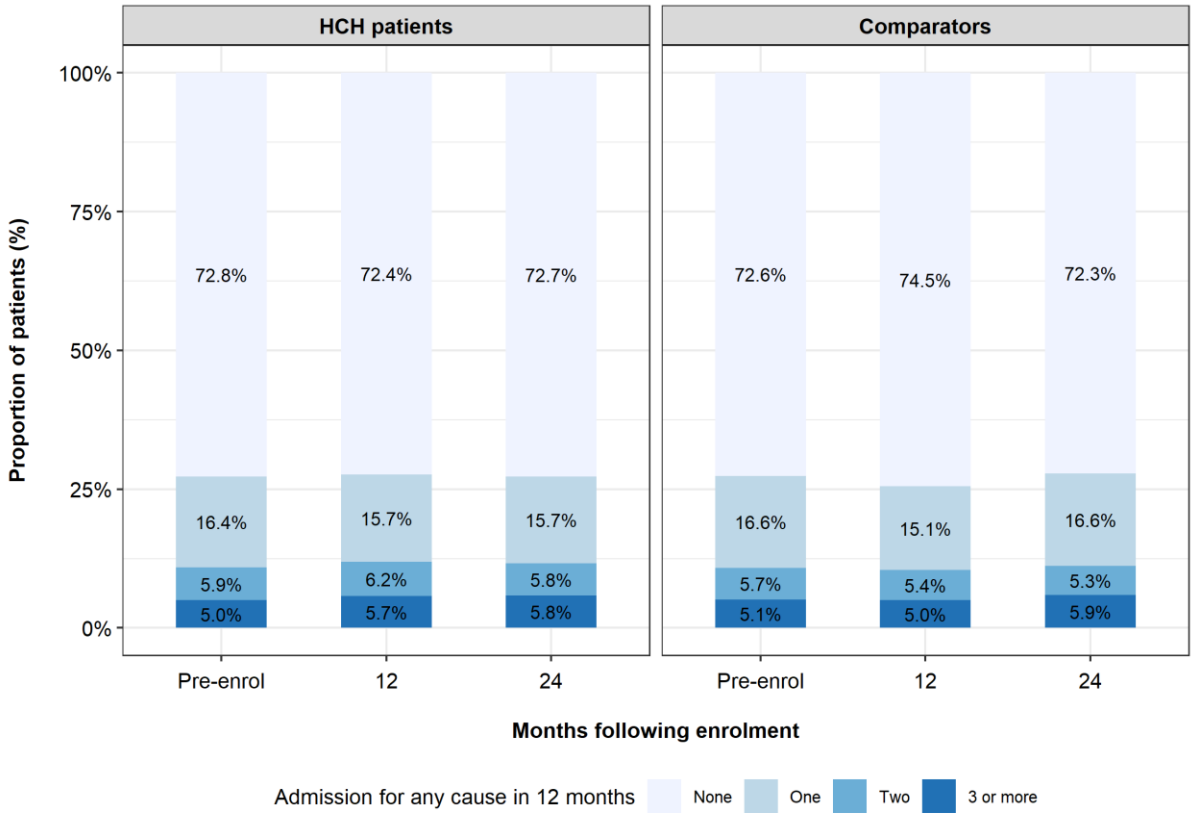
---

[85] Australian Institute of Health and Welfare. (2019). *National Healthcare Agreement: PI 18–Selected potentially preventable hospitalisations, 2019 [METeOR 698954]*. https://meteor.aihw.gov.au/content/index.phtml/itemId/698954

[86] Independent Hospital Pricing Authority. (2019). *National Weighted Activity Unit (NWAU) calculators*. Retrieved June from https://www.ihpa.gov.au/what-we-do/national-weighted-activity-unit-nwau-calculators

Nevertheless, total numbers of bed-days in comparator patients were the same as HCH patients, with a mean of 2.3 days in first year and 2.5 days in the second year (Figure 66).

Figure 66: Hospital admissions for any cause among HCH and comparator patients



Notes: People with length of follow-up shorter than respective yearly anniversaries were excluded from analyses.
Source: Admitted Patient Care data for patients in five states (NSW, Vic, Qld, SA and Tas).

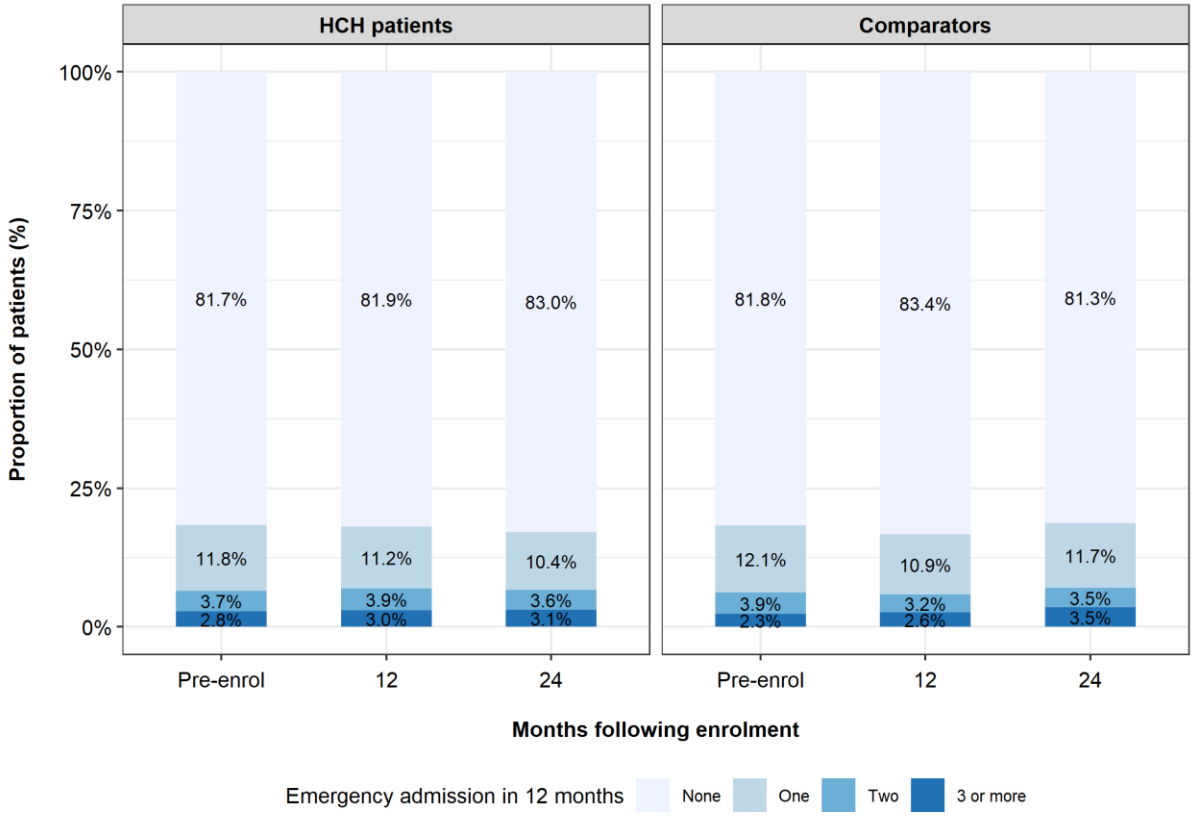
Among HCH patients who were admitted to hospital, the mean number of bed-days was 8.2 (std 16.1) in the year before enrolment, 8.3 (std 16.6) in the first year and 9.1 (std 19.5) in the second year following enrolment. Comparator patients who were admitted to hospital had slightly shorter hospital stay (mean 7.6 days, std 14.3) in the year before enrolment, slightly longer stay in the first year (mean 8.9 days, std 20.1) and similar length of hospital stay in the second year (mean 9.0 days, std 18.2).

Emergency hospital admissions

One in five HCH patients (18.3%) had been admitted to hospital for an emergency admission in the year prior, with 11.8% being admitted once, 3.7% being admitted twice, and 2.8% being admitted three or more times. This was equivalent to a mean number of 1.7 (std 7.9) total bed-days for emergency admissions per patient over the year, with 7.9% of HCH patients having one or two bed-days and 10.3% having three or more bed-days. The proportion of HCH patients with an emergency admission remained at 18.1% in the first year following enrolment and decreased slightly in the second year (17.0%) (Figure 67). There was little change in the total numbers of bed-days, which were 1.7 (std 8.2) in the first year and 1.8 (std 9.8) in the second year following enrolment.

Comparator patients, who were matched with HCH patients on number of emergency admission in the pre-enrolment period, experienced similar patterns of emergency admissions, with 16.6% having an emergency admission in the first year following enrolment and 18.7% in the second year (Figure 67). On average, numbers of bed-days were 1.6 days (std 9.2) and 1.7 days (std 8.0) in the first year and second year respectively.

Figure 67: Emergency hospital admissions among HCH and comparator patients



Notes: People with length of follow-up shorter than respective yearly anniversaries were excluded from analyses.
Source: Admitted Patient Care data for patients in five states (NSW, Vic, Qld, SA and Tas).

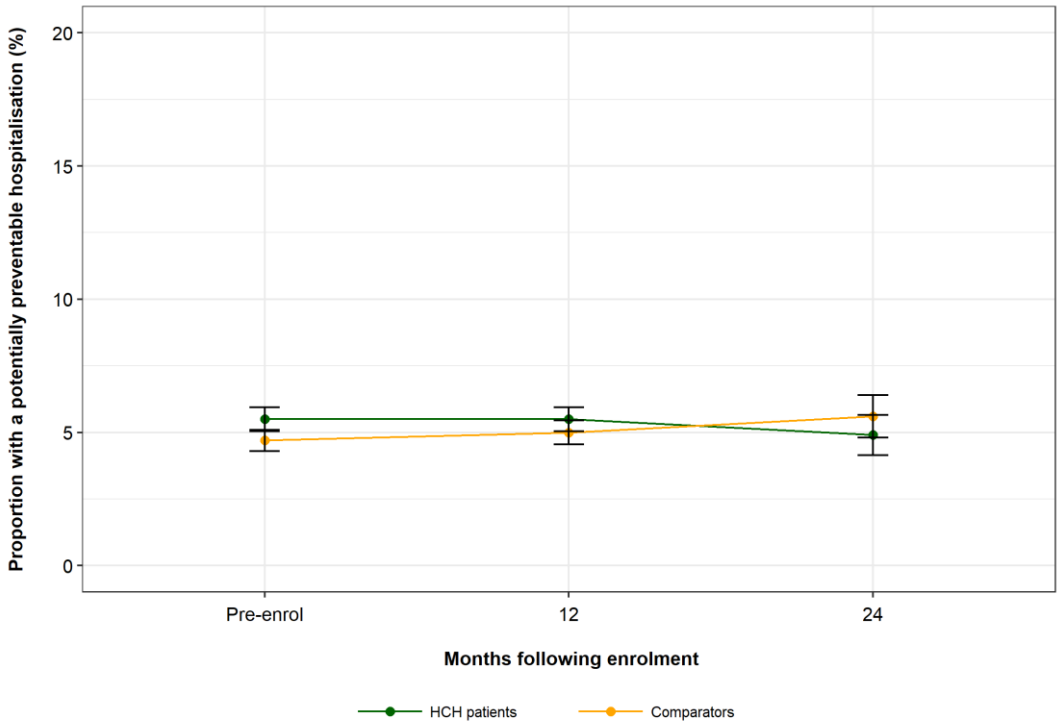
Among HCH patients who had emergency admissions to hospital, the mean number of total bed-days for these admissions was 9.0 (std 16.7) in the year before enrolment, 9.3 (std 17.3) in the first year and 10.5 (std 21.6) in the second year following enrolment. Comparator patients who had emergency admissions had fewer total bed-days for emergency admissions (mean 8.0 days, std 14.3) in the year before enrolment, slightly larger total bed-days in the first year (mean 9.8 days, std 20.6) and in the second year (mean 9.3 days, std 16.5).

Potentially preventable hospital admissions

Admission to hospital for a condition where the hospitalisation could have potentially been prevented was based on the definition used in the 2019 National Healthcare Agreement.[87] A small proportion (5.5%) of HCH patients had a potentially preventable hospitalisation in the year before enrolment. When measured in bed-days, 2.4% of HCH patients had one or two bed-days for a potentially preventable hospitalisation, and 3.0% had three or more bed-days. Admissions to hospital for potentially preventable conditions remained stable in the first year following enrolment (5.4% having an admission, 2.8% with three or more bed-days) while decreased in the second year following enrolment (4.9% having an admission, 3.0% with three or more bed-days).

Comparator patients were matched with HCH patients on the number of potentially preventable hospitalisations in the pre-enrolment period. Compared with HCH patients, the proportions of comparator patients who had hospitalisations for potentially preventable conditions were slightly lower (5.0%) in the first year following enrolment and slightly higher (5.6%) in the second year following enrolment (Figure 68).

Figure 68: Potentially preventable hospitalisations among HCH and comparator patients



Notes: People with length of follow-up shorter than respective yearly anniversaries were excluded from analyses.
Source: Admitted Patient Care data for patients in five states (NSW, Vic, Qld, SA and Tas).

[87] Australian Institute of Health and Welfare. (2019). *National Healthcare Agreement: PI 18–Selected potentially preventable hospitalisations, 2019 [METeOR 698954].* https://meteor.aihw.gov.au/content/index.phtml/itemId/698954

National Weighted Activity Units (NWAUs)

NWAU over 12 months was quantified as a proxy measure for weighted intensity of hospital episodes, using a calculator developed by the Independent Hospital Pricing Authority for financial year 2018–2019.[88]

Among all HCH patients, the mean NWAU was 0.77 units in the year before enrolment, and this remained almost unchanged in the first and second years after enrolment. Mean NWAU among all comparator patients – matched with HCH patients at baseline – was also stable in the follow-up period (Table 47).

In HCH patients who were admitted to hospital for any reason, the mean NWAU before enrolment was 2.82 units (std 4.22). This amount decreased slightly to 2.66 units (std 4.26) in the first year following enrolment then increased slightly to 2.84 units (std 5.10) in the second year following enrolment. In comparator patients who also had an admission, the mean NWAU before enrolment was 2.66 units (std 4.08), then increased to 2.80 units (std 5.00) in the first year following enrolment and 2.77 units (std 4.55) in the second year following enrolment (Table 47).

Table 47: National Weighted Activity Units among HCH and comparator patients

Patients/ period	HCH patients		Comparators	
	Mean (std)	Median (IQR)	Mean (std)	Median (IQR)
In all patients				
Pre-enrolment	0.77 (2.53)	0 (0–0.23)	0.73 (2.44)	0 (0–0.24)
First year	0.74 (2.54)	0 (0–0.23)	0.71 (2.81)	0 (0–0.12)
Second year	0.77 (2.95)	0 (0–0.21)	0.77 (2.70)	0 (0–0.20)
Amongst admitted patients				
Pre-enrolment	2.82 (4.22)	1.26 (0.53–3.34)	2.66 (4.08)	1.28 (0.53–3.08)
First year	2.66 (4.26)	1.17 (0.48–2.84)	2.80 (5.00)	1.19 (0.44–3.19)
Second year	2.84 (5.10)	1.15 (0.48–3.38)	2.77 (4.55)	1.19 (0.43–3.09)

Notes: People with length of follow-up shorter than respective yearly anniversaries were excluded from analyses.
Source: Admitted Patient Care data for patients in five states (NSW, Vic, Qld, SA and Tas).

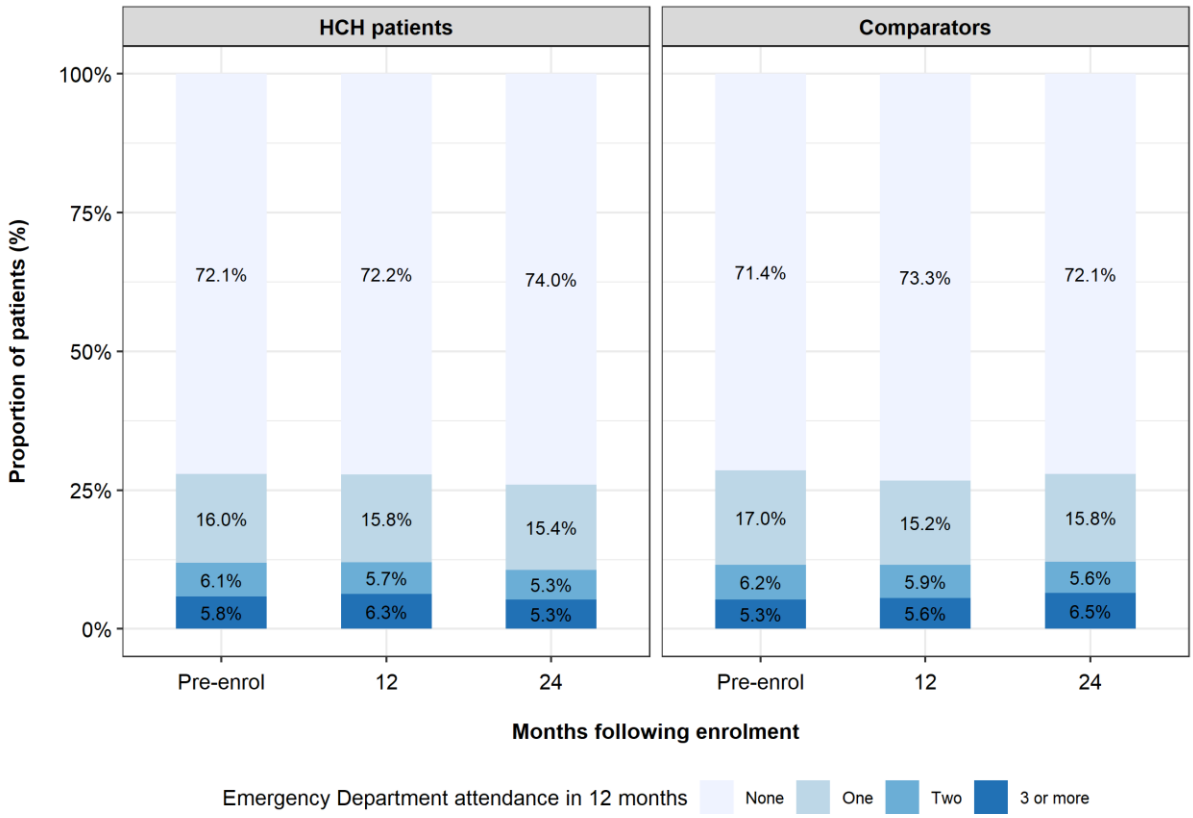
Hospital emergency department presentations

One in four HCH patients (27.9%) had presented a hospital emergency department in the year before enrolment, with 16.0% attending once, 6.1% attending twice, and 5.8% attending three or more times. There was little change in the number of emergency department presentations following enrolment, with a similar proportion of HCH patients attending an emergency department in the year following enrolment (27.8%), followed by a slight decline in the second year (26.0%) (Figure 69).

[88] Independent Hospital Pricing Authority. (2019). *National Weighted Activity Unit (NWAU) calculators*. Retrieved June from https://www.ihpa.gov.au/what-we-do/national-weighted-activity-unit-nwau-calculators

Comparator patients, who were matched with HCH patients on the number of emergency department presentations in the pre-enrolment period, had broadly consistent patterns of emergency department presentations to HCH patients. About one quarter (28.6%) of comparator patients had an emergency department presentation in the pre-enrolment period, 26.7% in the first year and 17.9% in the second year following enrolment (Figure 69).

Figure 69: Presentations at emergency department among HCH and comparator patients



Notes: People with length of follow-up shorter than respective yearly anniversaries were excluded from analyses.
Source: Non-admitted Emergency Department Patient Care data for patients in five states (NSW, Vic, Qld, SA and Tas).

Entry to residential aged care facilities

For the HCH evaluation, data on the use of aged care services were obtained from the National Aged Care Data Clearing House (NACDCH). Admission to a residential aged care facility was determined by presence of a record in the Residential Aged Care (RAC) Episode of care data collection, where the date of entry was subsequent to the date of HCH enrolment. Comparator patients were matched with HCH patients on the use of community-based and facility-based aged care services in two years before enrolment.

In the follow-up period (up until 30 June 2020), 339 (3.2%) HCH patients were admitted to a residential aged care facility (Table 48), while 292 (2.7%) comparator patients were admitted. Amongst HCH patients who had an admission, the mean length of time from enrolment to admission was 9.8 months (std 9.6), and median was 9 months (IQR: 5–14). Amongst comparator patients who had admission, mean time-to-aged care admission was 11.2 months (std 6.9), and median was 11 months (IQR: 5–16).

Only a small proportion of HCH and comparator patients had a record of RAC admission within 24 months before enrolment. Among those patients who did not have a prior RAC admission, 281 HCH patients (2.7%) and 270 comparator patients (2.5%) had an admission to a residential aged care facility following enrolment.

After adjusting for pre-enrolment use of aged care services, hazard ratio for having an admission to aged care facility among HCH patients is 1.16 (95%CI 0.97–1.39), relative to comparator patients.

Table 48: Admission to aged care facility by 30 June 2020 among HCH and comparator patients

Admission to aged care facility	HCH patients	Comparators
In all patients		
Admission to aged care facility, number (%)	339 (3.2%)	292 (2.7%)
Time-to-admission (months)		
Mean (std)	9.8 (6.6)	11.2 (6.9)
Median (IQR)	9 (5–14)	11 (5–16)
In patients who did not use residential aged care services in 24 months before enrolment		
Admission to aged care facility, number (%)	281 (2.7%)	270 (2.5%)
Time-to-admission (months)		
Mean (std)	10.7 (6.4)	11.7 (6.8)
Median (IQR)	10 (6–15)	11 (6–17)

Source: National Death Index data collection and National Aged Care Data Clearing House – Residential Aged Care Episode of care.

Serious cardiovascular events and mortality

Serious cardiovascular events

Experience of a serious cardiovascular (CVD) event was defined as a hospitalisation or a death due to major CVD diagnoses. This outcome was assessed among HCH and comparator patients in five States (NSW, QLD, SA, Tas and VIC) for a duration up until 30 June 2020. Hospitalisations for CVDs were identified from hospital admission data where major atherosclerotic and arteriovenous thromboembolic diagnoses (for example, ischemic heart disease, cerebrovascular disease, pulmonary heart disease) were recorded as principal reason of the admission.[89] Cardiovascular deaths were identified from the National Death Index data collection where diagnoses of ischemic heart disease or cerebrovascular disease were recorded as underlying cause of death.[90] Duration of follow-up was censored at a serious CVD event or a death for another cause, which ever occurred first. Comparator patients were matched with HCH patients on medical diagnoses and use of medications in the pre-enrolment period.

[89] Joshy, G., Korda, R., Abhayaratna, W., Soga, K., & Banks, E. (2015). Categorising major cardiovascular disease hospitalisations from routinely collected data. *Public Health Research & Practice*.
[90] Australian Bureau of Statistics. (2022). Provisional Mortality Statistics methodology.

Between enrolment and 30 June 2020, 621 (6.8%) HCH patients experienced a serious CVD event, of these 36 patients died of ischaemic heart disease or stroke. Among those experienced an event, on average, length of time from enrolment to the CVD hospitalisation or death was 9.3 months (std 6.7).

In comparator patients, 604 (6.6%) had a CVD event, with 40 patients died of ischaemic heart disease or stroke. Among comparator patients who experienced an event, the mean length of time from enrolment to the CVD event was 10.3 months (std 7.0) (Table 49).

Hazard ratio for a CVD event among HCH patients is 1.04 (95%CI 0.92–1.16), relative to comparator patients.

Table 49: Serious cardiovascular event by 30 June 2020 among HCH and comparator patients

	HCH patients	Comparators
Serious CVD event, number (%)	621 (6.8%)	604 (6.6%)
Time-to-CVD event (months)		
Mean (std)	9.3 (6.7)	10.3 (7.0)
Median (IQR)	9 (4–15)	9 (4–15)

Notes: Calculated for patients living in five states (NSW, Vic, Qld, SA and Tas).
Source: National Death Index and Admitted Patient Care data.

Mortality

Mortality was determined by presence of a record in the National Death Index data collection up until 30 June 2021. During the follow-up, 689 (6.5%) HCH patients and 646 (6.1%) comparator patients died (Table 50). On average, the number of months between enrolment to death was 17.2 months (std 9.9) among HCH patients and 17.1 months (std 9.9) among comparator patients. Hazard ratio for mortality among HCH patients is 1.07 (95%CI 0.96–1.20), relative to comparator patients.

Table 50: Mortality by 30 June 2021 among HCH and comparator patients

	HCH patients	Comparators
Death, number (%)	689 (6.5%)	646 (6.1%)
Time-to-death (months)		
Mean (std)	17.2 (9.9)	17.1 (9.9)
Median (IQR)	17 (9–25)	17 (9–25)

Source: National Death Index data collection.

Key evaluation question 4: What are the financial effects of the HCH model on governments, providers and individuals?

This question considers the financial impact of the HCH model. This includes the impact on patients, on HCH practices, on changes in the use of primary and secondary services outside the HCH practice, and the impact of changes in the use of acute health care services.

19

Financial impacts of HCH

Box 26: Chapter summary

For patients, there was little effect on out-of-pocket costs for either Medicare services or PBS medicines. It's possible that as the patient cohort ages and requires more health care, the HCH model may have a protective effect against rising out-of-pocket costs. However, this was not observed during the limited follow up period and would depend on future trends in out-of-pocket costs.

For providers, the data suggests that the shift from fee-for-service to bundled payments had a positive impact on their financial outcomes. This was driven by a significant fall in per-patient fee revenues under the conventional payment model, more than compensated by the value of the bundled payment. This result supports the financial sustainability from a provider point of view, notwithstanding the substantial administrative and implementation burdens described earlier in this report. This analysis however was limited by a lack of practice-level identifiers, which meant we could not evaluate more precise practice-level effects, for example, on outcomes for unenrolled versus enrolled patients at participating practices. Further, this finding applies only to those practices which joined and remained in the program, so may not be generalisable to all practices. This is a key area for future research.

For the Commonwealth Government, the results indicate that expenditures for Medicare services were higher (but gradually falling over time) when compared with the conventional payment model on a per-patient basis. In the longer run, these falling expenditures might support ongoing value-for-money, however current levels of expenditure are well above those for propensity score-matched comparator patients ("control" patients). In addition, the earlier chapters in this report indicate that there were few changes in health care utilisation or health outcome arising from the HCH model. Given these findings, we are unable to reach a conclusion about the program's value for money for the government and taxpayers.

The economic analysis focussed on the financial effects of the HCH model on governments, providers and individuals.

Participation in HCH induced a range of financial incentives that differ from those present under a fee-for-service model (for both practices and patients). These incentives may affect economic outcomes in ways that should be clearly understood in order to assess whether the program delivers value for money as well as improved outcomes (health and financial) for patients and providers. In this chapter we assess how the funding arrangements in practice aligned with the financial incentives for providers, patients and government that would be expected to promote the intended program outcomes.

Impact on practices

Securing the ongoing participation of GP practices is key to the sustainability of programs like HCH. Already, both qualitative and quantitative evidence suggests that practices have reported substantial difficulties with implementation and management of the program, and in particular processing the bundled payment. Many practices, particularly smaller ones, withdrew from the trial, indicating that participation was not universally attractive. The qualitative evidence and practice surveys suggest that additional resources and infrastructure around implementation and administration were needed. Moreover, as enrolment of providers was at the individual GP level and not at the practice level, there were likely to be difficulties in enacting practice-level change, as well as continued fragmentation of care depending on whether an enrolled patient sought care from the GP who they enrolled with or another GP within the same practice or an alternative practice.

In the rest of this section we assess the impact of HCH on practices with respect to fees charged and staffing levels.

Fees charged

Under Australia's fee-for-service Medicare system, providers can charge fees at their discretion, with patient out-of-pocket costs determined by the difference between the fee and Medicare rebate associated with each service. In this section, we examine total fees charged for Medicare services on a per-patient, per-period basis, and return to the issue of patient out-of-pocket costs later in the chapter. Note that a key limitation of this analysis arises because patients were not restricted to attending the practice where they were enrolled, and practice-level identifiers were not available for analysis. Consequently, our analysis of fees charged to each patient reflects not only the practice participating in the HCH trial, but also any other practices where the enrolled patient may have been receiving care.

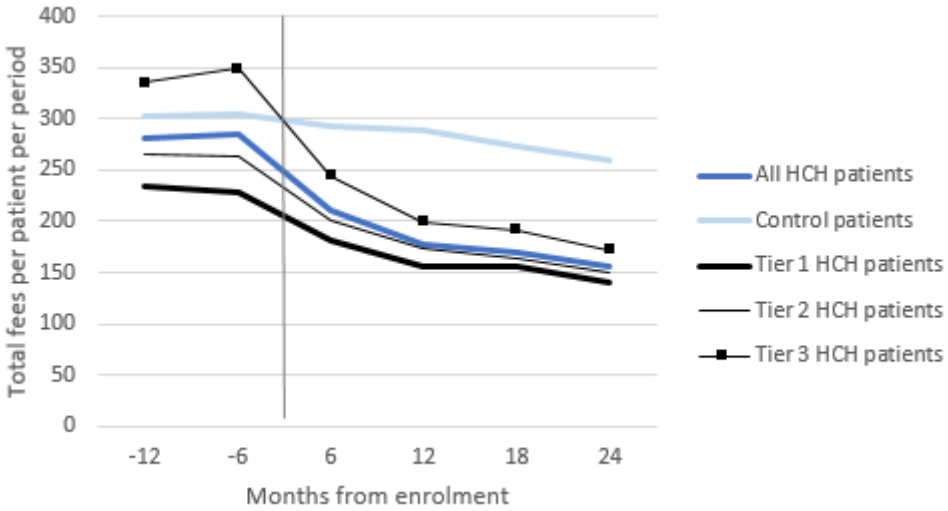
Figure 70 shows the total MBS provider fees charged (on average) for GP services,[91] by six-monthly periods before and after enrolment. The results are shown for all HCH patients, patients in each HCH tier, as well as for propensity score-matched comparator patients (labelled as "control" patients in the Figure). Overall, we observe two distinctive features:

1. Tier 3 patients were charged higher fees relative to tier 1 and 2 patients across all periods, likely reflecting both a greater volume of services as well as greater use of higher cost services (for example, longer consultations)

2. Fees charged for GP services fell for all HCH patients following enrolment in HCH compared with control group patients. The fall in total fees continued over the follow-up period.

[91] MBS items denoting attendances by GPs are detailed on p. 51 of the MBS schedule: http://www.mbsonline.gov.au/internet/mbsonline/publishing.nsf/Content/4EFCF78281A91736CA258654001138AF/$File/mbsbook-march2021.pdf

Figure 70: Change in fees charged per patient per 6-month period, GP services



These graphical results are borne out in the regression findings reported in Table 51, which presents separate results for fees charged on all Medicare services, and on GP services only. The results show that there were statistically significant reductions in total fees charged to HCH patients in each six-month period following enrolment. The per-period per-patient decrease in fees across all services ranged from $138 to $159, driven by drops in fees charged for GP services, which fell between $62 and $90 each period.

This fall in total fees charged was likely more than compensated for by the receipt of the bundled payment. These annual payments were: $591 for tier 1 patients (the least complex), $1,267 for tier 2 patients, and $1,795 for tier 3 (the most complex) patients. The value of these payments was in excess of the estimated falls reported in Table 51, suggesting that the financial impact on practices on a per-patient basis may have been positive and sustainable. However, as practice-level identifiers were not available nor estimates of additional overhead costs (for example, the cost of hiring additional staff), we are unable to be more precise. Also, as noted above, many practices withdrew from the program, and this may reflect their assessment that the program was not financially sustainable for them.

Table 51: Impact of HCH on fees-charged

	Fees charged – Medicare services		Fees charged – GP services	
	Est.	Std. Err.	Est.	Std. Err.
Period from enrolment				
Months 1–6	-54.54	(48.06)	-62.11***	(8.78)
Months 7–12	-144.18**	(56.41)	-90.47***	(11.63)
Months 13–18	-138.76**	(51.79)	-83.54***	(11.77)
Months 19–24	-159.13***	(46.71)	-84.19***	(8.36)
Sample size	116,964		116,964	

*Notes: Results are based on a per-patient, per-period basis. Clustered standard errors in parentheses. Statistically significant results denoted by: *** p<0.01, ** p<0.05, * p<0.1.*

Staffing

These results are based on 67 practices that completed the staffing questions in both the first and final practice surveys. There were 57 practices that withdrew from the program, and a further 55 that did not complete both surveys. The survey asked practices about their staffing levels across a range of occupational categories. In this section, we report changes in those staffing levels between March to June 2018 (R1 survey) and April to June 2021 (R5 survey).

Table 52 shows the change in FTE levels by staff category. At the time of the implementation, HCH practices employed 4.6 FTE GPs on average. On average, more than 1 in 2 (60%) of GPs participated in the HCH program within each practice. On average, each practice employed 2.6 FTE nursing staff, most commonly a registered practice nurse. HCH practices also employed 0.8 FTE allied health professionals, most commonly a psychologist or physiotherapist. In addition, about two thirds of practices had a practice manager, and on average each practice employed 2.8 FTE administrative staff.

At the final survey (completed April to June 2021), practices had on average increased their GP head count by almost 1. Notably however, the proportion of GPs participating in the HCH program had fallen slightly to 50%. Changes in staffing in other categories were smaller, with a drop in administrative and managerial staff, and an increase in allied health staff.

The withdrawn practices were on average smaller, with an average 1.6 GPs and 5.2 other staff (FTE basis), compared with 4.7 GPs and 5.9 other staff for practices that remained in the program. Feedback from the practice surveys indicate that additional staff were recruited by one in four HCH practices, with the most common staffing being nursing and administrative staff.

Table 52: Impact of HCH on full-time equivalent staffing levels

Staff type	R1 survey	R5 survey	Change in FTE
GPs	4.7	5.4	0.7
Nursing staff	2	2	0
Allied health	0.5	0.7	0.2
Practice manager	0.6	0.5	-0.1
Administrative staff	2.8	2.4	-0.4

Notes: Nursing staff include enrolled and registered nurses, nurse practitioners, Aboriginal Health Practitioners, practice nurses, remote area nurses and nursing assistants. Administrative staff includes receptionists, administrative assistants and medical practice assistants. Allied health staff include audiologists, dentists, dietitians, exercise physiologists, optometrists, pharmacists, physiotherapists, psychologists, social workers, and allied health assistants.

Source: Practice surveys R1 (Mar–Jun 2018) and R5 (Mar–May 2021).

Impact on government

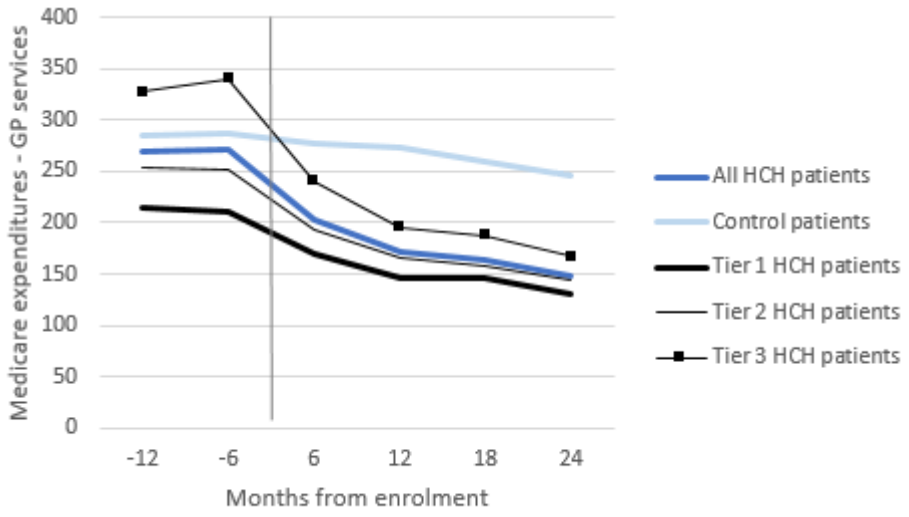
In this section we evaluate the impact of HCH on public expenditures, including those relating to the use of Medicare services, pharmaceuticals, and hospital admissions.

Medicare expenditures

The impact on Medicare expenditures has been assessed on a per-patient basis in six-monthly periods before and after enrolment. Figure 71 shows the changes in Medicare expenditures for GP attendances for enrolled patients according to patient tier, as well as for control group patients.

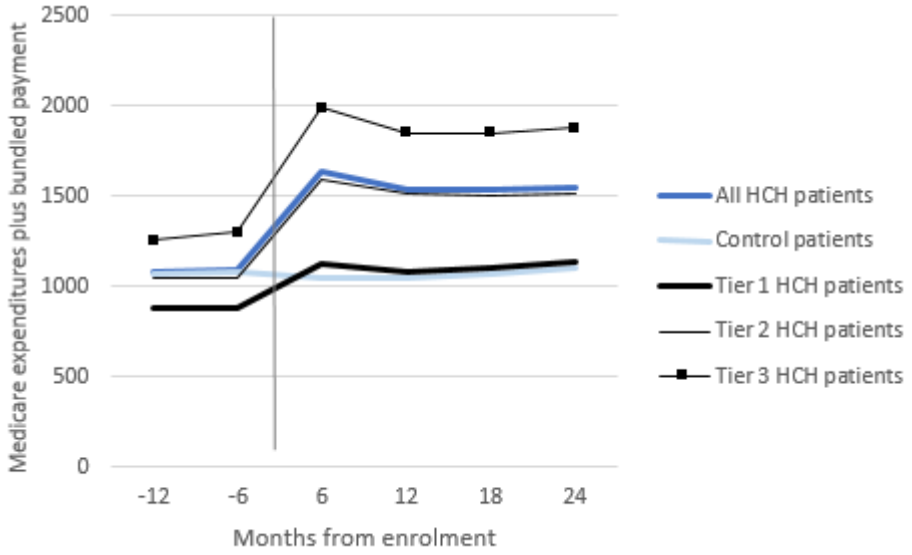
The results show that Medicare expenditures rise in line with patient complexity, with tier 3 patients having the highest Medicare spending in the pre-enrolment period. For all enrolled HCH patients, MBS expenditures for GP services fell following enrolment, excluding the value of the bundled payment. This is as expected, as the trial aimed to move away from fee-for-service delivery, with a bundled payment for each patient in its place. This finding is also consistent with the Department of Health's compliance audit of MBS billing of practices in the trial, which demonstrated that MBS billing of chronic disease items for HCH patients reduced by over 77%. By contrast, a slight decline in Medicare expenditures was observed amongst control group patients.

Figure 71: Changes in per-patient Medicare expenditures for GP services



In Figure 72, we present results for all out-of-hospital Medicare expenditures as well as the outlays associated with the bundled payment. In particular, we apportion half the annual bundled payment to each period's expenditures for each HCH patient post-enrolment. These annual payments were: $591 for tier 1 patients (the least complex), $1,267 for tier 2 patients, and $1,795 for tier 3 (the most complex) patients. Figure 72 shows that the inclusion of the bundled payment results in an increase in overall MBS expenditures in the period immediately following enrolment, with expenditures proportionately higher in line with patient complexity. However, no further increase was observed over the two-year follow-up period, with expenditures remaining stable.

Figure 72: Changes in total Medicare expenditures, including bundled payment



The regression results in Table 53 show that there were substantial and statistically significant drops in MBS expenditures associated with GP services for HCH patients, compared with control group patients. The decrease ranged from $58 to $86 per patient per period. However, this decrease was more than offset by the value of the bundled payment, which added between $436 and $577 in per patient per period government spending, although the amount fell over time. Consequently, this shift in costs from conventional to bundled payments resulted in net falling expenditures on a per-patient basis but remained well above expenditures for the control group.

Table 53: Impact of HCH on public expenditures

	MBS expenditures – GP services		All MBS expenditures plus bundled payment		PBS expenditures		Hospital admissions	
	Est.	Std. Err.	Est.	Std. Err.	Est.	Std. Err.	Est.	Std. Err.
Period from enrolment								
Months 1–6	-57.78***	(8.57)	577.24***	(29.37)	11.82	(64.69)	-2017.90	(1619.52)
Months 7–12	-85.71***	(11.16)	478.23***	(32.72)	0.12	(86.54)	417.51	(2154.15)
Months 13–18	-79.44***	(11.61)	454.51***	(23.59)	28.17	(47.22)	1579.69	(1705.81)
Months 19–24	-80.90***	(8.56)	436.15***	(33.53)	15.45	(32.07)	-3798.86	(2186.49)
Sample size	116,964		116,964		109,018		3,842	

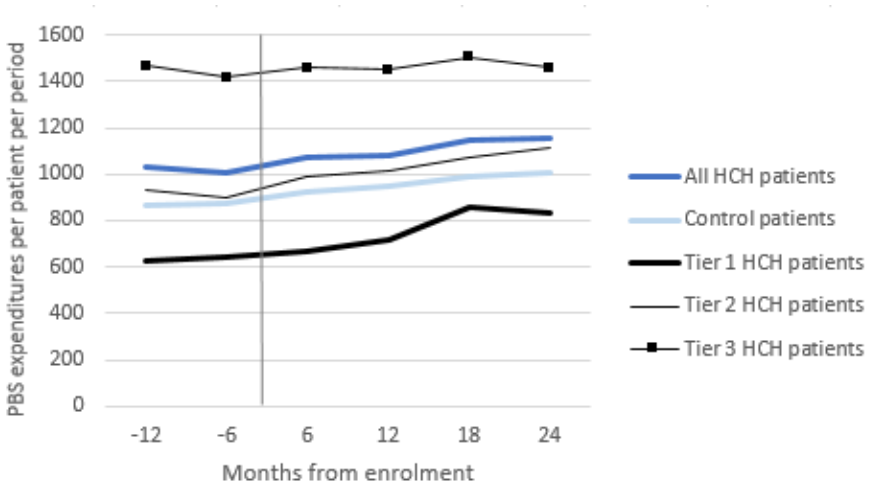
*Notes: Results are based on a per-patient, per-period basis. Clustered standard errors in parentheses. Statistically significant results denoted by: *** p<0.01, ** p<0.05, * p<0.1*

Pharmaceutical Benefit Scheme expenditures

Figure 73 illustrates the change in government expenditures on medicines funded through the PBS, on a per patient basis, for HCH patients as well as for control group patients. The data show that the cost of PBS medicines rises substantially in line with patient complexity, as evidenced by the gap in expenditures by patient tier. There were moderate increases in PBS expenditures on tiers 1 and 2 HCH patients, as well as control group patients. Expenditures

on tier 3 patients were stable across the study period. Overall, the graph does not indicate any change in outcomes for the enrolled HCH patients.

Figure 73: Changes in PBS expenditures, by patient tier



The regression results in Table 53 above show that overall, the HCH had no significant impact on government PBS expenditures for enrolled patients. While the estimated treatment effects were positive, these were not statistically significant.

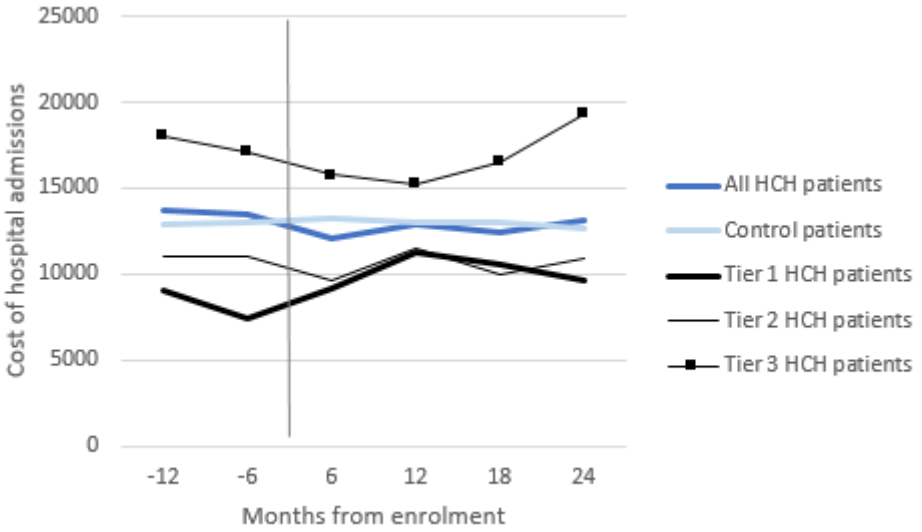
Hospital expenditures

Figure 74 shows the changes in average hospitalisation costs per patient in six-monthly periods before and after enrolment. Note that costs are defined as the average cost per episode of care, assigned according to the Australian Refined Diagnosis Related Group (AR-DRG) classification, in both public and private hospitals.

The data indicates that tier 3 HCH patients have the highest hospitalisation costs, with little difference between tier 1 and 2 patients. While there were no clear trends following enrolment in the HCH program (compared with control group patients, whose hospital costs were stable throughout the follow-up period), it may be too early to observe substantial downstream effects.

The regression results in Table 53 show that the HCH program had no consistent or statistically significant impact on the cost of hospital admissions. Although the estimated effects in each period were potentially large, large standard errors rendered these estimates statistically insignificant.

Figure 74: Changes in hospitalisation costs, by patient tier



Notes: The Figure plots the average cost of hospital admissions per enrolled HCH patient per period, for the 12 months before and 24 months after enrolment. Hospital costs have been assigned according to AR-DRGs versions 7.0 and 8.0 and mapped to cost estimates from the National Hospital Cost Data Collection (public admissions) and Hospital Casemix Protocol (private admissions) Annual Reports, and indexed to 2019 dollars.

Value for money

Since 2016–17, the Australian Government committed $84.7 million for HCH, including $54.6 million for clinical purposes. An assessment of whether these outlays represented value for money would traditionally be informed by an analysis of costs for delivering improved outcomes to HCH patients compared with the cost of care under the conventional model of care. However, the earlier chapters in this report indicated there was little improvement in health or health care use outcomes for enrolled HCH patients. While there may be improvements over time or in other areas such as care coordination and patient satisfaction, we cannot at this stage conclude that the HCH program delivered value for money.

Impact on patients

In this section we examine the impact of HCH on patient financial outcomes, and in particular focus on patient out-of-pocket costs for Medicare services and for PBS medicines.

Out-of-pocket costs for Medicare services

Under the fee-for-service model, patients face an out-of-pocket cost for each Medicare service which is determined by the difference between the provider's fee and the associated Medicare rebate. Figure 75 illustrates changes in average patient out-of-pocket costs across all Medicare services, for HCH patients (according to patient tier) and control group patients. Figure 76 and Figure 77 focus on out-of-pocket costs for GP attendances only, and non-GP attendances, respectively. The data for all services (Figure 75) show an overall increase for patients in tier 1, but little change for HCH patients overall as well as control group patients. Figure 76 shows that these changes were not driven by changes in out-of-pocket costs for GP attendances, which showed a slight decline from a low base for HCH patients. Rather, what we observe in Figure 77 is that the increase in out-of-pocket costs for tier 1 patients was driven by non-GP services (for example allied health professional attendances).

Figure 75: Changes in out-of-pocket costs for all Medicare services, by patient tier

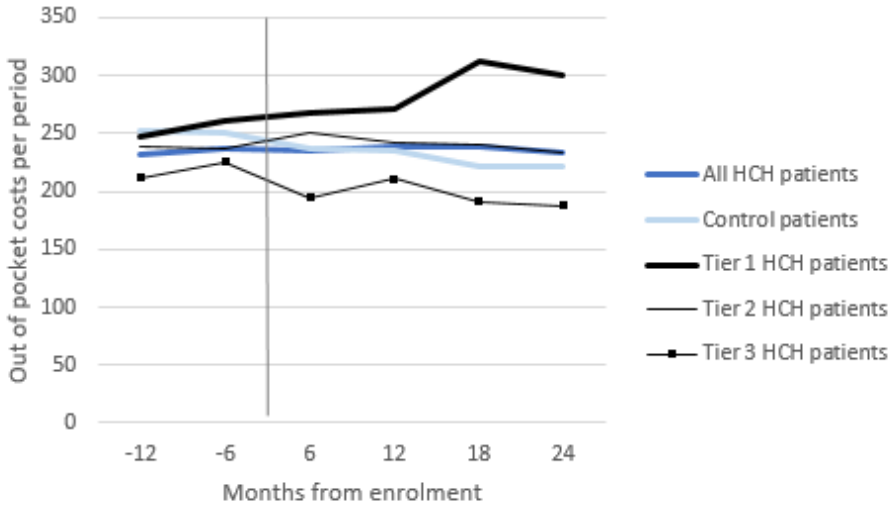


Figure 76: Changes in out-of-pocket costs for GP services, by patient tier

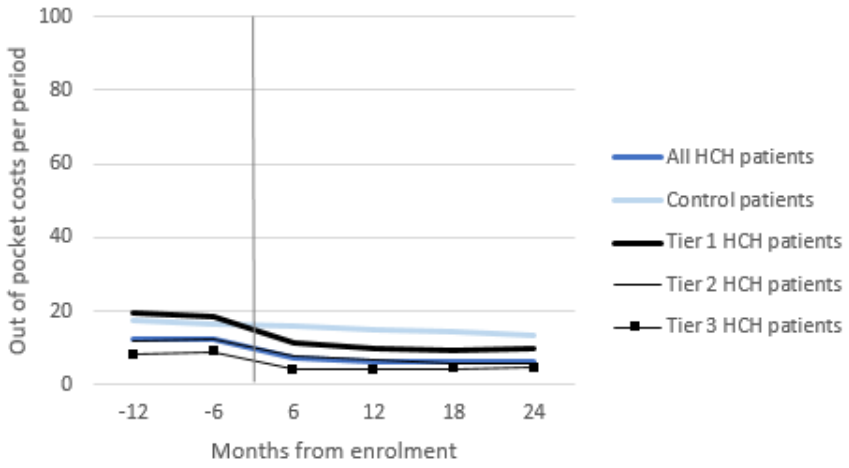
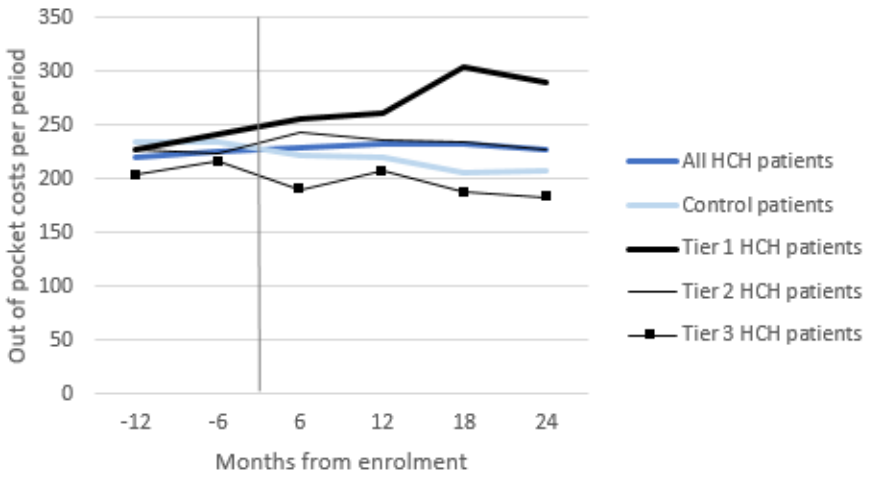


Figure 77: Changes in out-of-pocket costs for non-GP services, by patient tier



The regression results in Table 54 suggest that these changes in out-of-pocket costs were relatively small in each period and not statistically significant outside of GP services. Although the results showed negative and statistically significant decreases in out-of-pocket costs for GP services, the magnitude of decrease in each six-month period was about $4 per period.

Table 54: Impact of HCH on Medicare out-of-pocket costs

	Out-of-pocket costs – Medicare services		Out-of-pocket costs – GP services		Out-of-pocket costs – non-GP services	
	Est.	Std. Err.	Est.	Std. Err.	Est.	Std. Err.
Period from enrolment						
Months 1–6	12.50	(19.28)	-4.33***	(1.14)	16.83	(19.27)
Months 7–12	15.63	(16.99)	-4.76**	(1.68)	20.39	(17.59)
Months 13–18	31.60	(18.77)	-4.10**	(1.37)	35.70*	(19.13)
Months 19–24	24.99	(14.37)	-3.28*	(1.55)	28.27*	(13.83)
Sample size	116,964		116,964		116,964	

*Notes: Results are based on a per-patient, per-period basis. Clustered standard errors in parentheses. Statistically significant results denoted by: *** p<0.01, ** p<0.05, * p<0.1.*

Out-of-pocket costs for PBS medicines

Unlike Medicare services, for PBS-listed medicines patients pay a fixed co-payment which depends on their concessional status. Figure 78 and Figure 79 illustrate the changes in these patient contributions to the cost of PBS medicines, for concessional and non-concessional patients, respectively. We separate these groups due to the operation of the PBS Safety Net, which provides for lower co-payments for concession cardholders. About 68% of all patients in our sample were concession cardholders. Both graphs show that patient contributions were stable for almost all patients regardless of clinical complexity or participation in HCH, with the exception of tier 1 non-concessional HCH patients (for whom there were moderate increases). Costs faced by general patients (that is, non-concessional) were both substantially higher relative to concessional patients, and were slightly more differentiated by clinical complexity, with tier 3 HCH patients facing the highest out-of-pocket costs. Across concessional and non-concessional patients, there was no clear change in outcomes between HCH and control group patients.

Figure 78: Changes in concessional patient contributions to PBS medicines

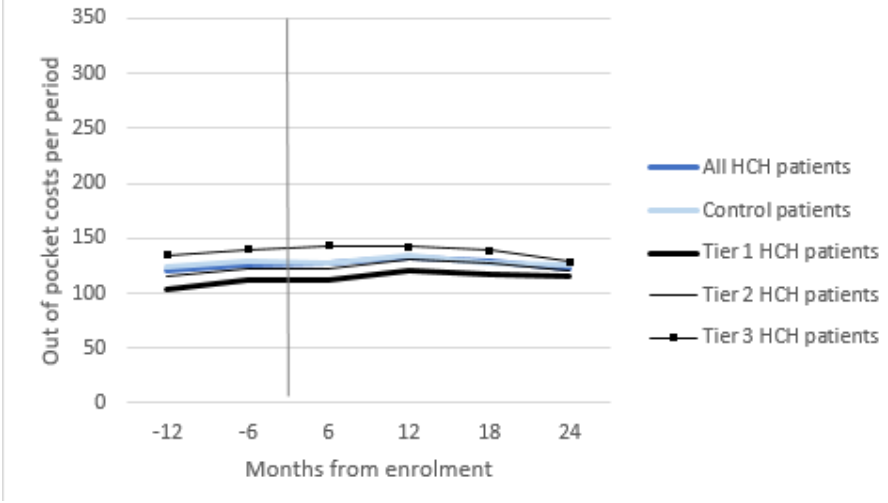


Figure 79: Changes in non-concessional patient contributions to medicines

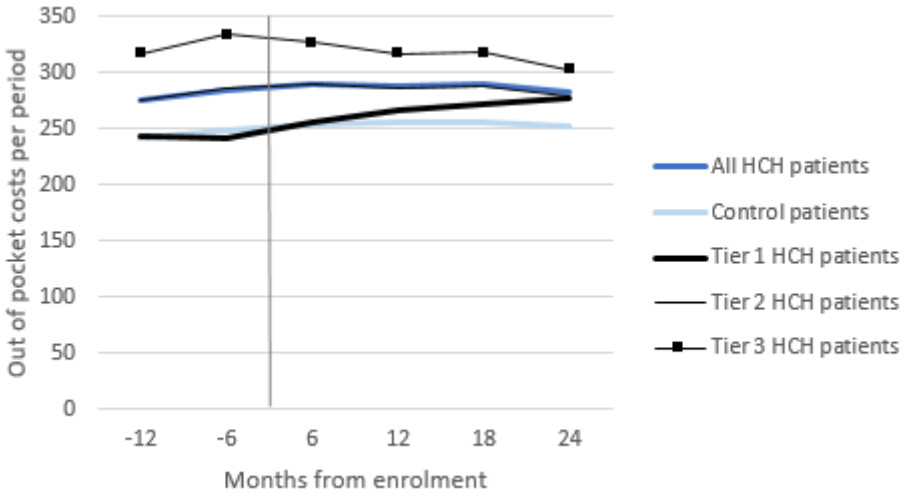


Table 55 reports the regression model results and bears out the conclusions inferred from the figures above – the estimated treatment effects were both small and statistically insignificant. Overall, the HCH had little impact on patient out-of-pocket costs for PBS medicines.

Table 55: Impact of HCH on PBS out-of-pocket costs

	Out-of-pocket costs – Concessional patients		Out-of-pocket costs – General patients	
	Est.	Std. Err.	Est.	Std. Err.
Period from enrolment				
Months 1–6	2.32	(2.82)	-0.75	(4.97)
Months 7–12	1.38	(1.82)	-2.93	(4.75)
Months 13–18	3.25	(3.40)	-1.22	(4.06)
Months 19–24	-1.58	(2.40)	-3.62	(4.51)
Sample size	74,014		35,004	

*Notes: Results are based on a per-patient, per-period basis. Clustered standard errors in parentheses. Statistically significant results denoted by: *** p<0.01, ** p<0.05, * p<0.1.*

Key evaluation questions 5–8: Community pharmacy trial?

The chapters in this section answer the key evaluation questions relating to the community pharmacy trial:

- Key question 5: Is community pharmacy a beneficial component of the broader HCH coordinated care model and should it be included as part of any future roll out?
- Key question 6: Do patients who received medication management services as part of the HCH trial experience better health outcomes than patients who did not?
- Key question 7: What was the level of engagement between HCH practices and community pharmacy (care coordination)?
- Key question 8: Is the inclusion of a pharmacy component in HCH financially viable?

20

Community Pharmacy in HCH Trial – set-up

Box 27: Chapter summary

The community pharmacy trial was an initiative of the Sixth Community Pharmacy Agreement (6CPA) and introduced in August 2018. The initiative provided for HCH patients to be referred to a community pharmacy of their choice for medication management services. The initiative was intended to foster teamwork and coordination between HCH practices and community pharmacies.

The Pharmacy Guild of Australia promoted the trial amongst pharmacies in the 10 PHNs in which the trial was conducted through an electronic direct mail marketing (EDM) campaign as well as through Guild publications. Within 12 months of its introduction, 625 pharmacies registered to participate.

Online training about the HCH model and the community pharmacy trial was available to pharmacies. As with the broader HCH trial training, the rate of completion declined with each subsequent module, starting at 23% for module 1, to 6–7% for the last two modules.

After agreeing to participate in the trial, some pharmacies were proactive and initiated contact with HCHs in their area. Others got involved in the trial because they were encouraged by the Guild or their local PHN, contacted by a HCH practice, or were near or had an existing relationship with a HCH practice.

All pharmacies had to prepare for the trial in some way, at minimum, establish software and processes to register patients, record key information and receive payments. Some had to make more extensive changes that included hiring additional staff or making changes to the role of staff and creating a private physical space to consult with patients.

The Pharmacy Guild was proactive in working with shared care software vendors to troubleshoot issues preventing integration of these systems with GuildLink software used by pharmacies. However, pharmacies reported numerous other integration issues caused by the multiple systems used by different providers within any one geographic region, including having to re-enter the same patient information in multiple systems. They also found other issues such as missing tier of the patient, which they had to separately chase up as it was a critical field for them to be paid and having to record information. They commented that training in the software would have helped.

Establishment of the trial

In August 2018, under the Sixth Community Pharmacy Agreement (6CPA), the Australian Government funded the Community Pharmacy in Health Care Homes Trial, which supported patients participating in the HCH trial by offering them a range of patient-centred, coordinated medication management services from community pharmacists.

The Pharmacy Guild (the Guild) worked with the Department to design the core services that would be delivered to HCH patients. The Pharmaceutical Society of Australia (PSA) was contracted to develop professional guidelines for pharmacists. Both organisations worked

together to develop training modules and delivered national training sessions for community pharmacies across the 10 PHN regions.

Under this component of the trial, a HCH patient could be referred to a community pharmacy of their choice. The community pharmacy could offer a range of additional medication management services, including the development of a medication management plan (MMP). The initiative intended to promote relationships between the GP practice and community pharmacies and foster teamwork and coordination between these providers. The types of additional medication services that could be offered included:

- Reconciling and assessing the patient's medicines regimen.
- Identifying any potential medication-related issues and agreeing on medication management goals.
- Developing the MMP in collaboration with the patient and their HCH.
- Providing regular follow-up reviews with the patient (in consultation with the referring HCH practice).
- Providing support services for the more complex patients, such as dose administration aids, blood glucose monitoring, blood pressure monitoring and asthma management planning.

The community pharmacy trial for HCH patients was jointly administered by the Guild and the Pharmacy Programs Administrator. The latter is a division of Australian Healthcare Associates (AHA), which took over administration of the 6CPA following success in a competitive tender in February 2019. The Pharmacy Programs Administrator was responsible for administering, processing and paying claims for the 23 community pharmacy programs funded under the 6CPA, including the HCH component. The Guild managed pharmacy registrations, onboarding, training and support, data collection and verification, and general enquiries, while the Pharmacy Programs Administrator was responsible for managing payments to participating pharmacies.

The community pharmacy trial for HCH patients started in August 2018. When the Government announced the extension of HCH for an additional 18 months to 30 June 2021, the extension also applied to the community pharmacy component.

Trial design

Working with the Department and within 6CPA program rules, the Guild developed the core components of the trial covering pharmacy registration, design and delivery of the medication management services, the medication management plan, supporting services, data collection (via GuildLink software), pharmacy training and support, and payment arrangements. As similar professional services have been provided to patients for many years, for example, Home Medicines Reviews, there was an existing framework that was used for the design of the program. Table 56 shows the similarities and differences between community pharmacy in HCH and other community pharmacy programs that existed before the trial.

Table 56: Similarities and differences between community pharmacy in HCH and other community pharmacy programs

Feature	MedsCheck	Home Medicines Review	Community Pharmacy in HCH
Delivery	Opportunistic consultation with Registered Pharmacist	Scheduled consultation with Accredited Pharmacist as part of patient's care team	Scheduled consultation with Registered Pharmacist as part of patient's care team
Location	Private area in pharmacy*	Patient home*	Private area in pharmacy*
No. of services per patient	1 per eligible patient per 12 months	1 service on referral from a medical practitioner & up to 2 follow-ups based on clinical need	1 initial consultation & up to four follow-ups**
Frequency	1 per patient per 12 months as clinically indicated	Follow-ups flexible based on patient needs	Follow-ups flexible based on patient needs
Cap / limit	Max. 20 per calendar month per pharmacy	Max. 30 per calendar month per pharmacy	Unlimited per pharmacy
Proactive or reactive	Proactive	Reactive	Proactive

**Temporary measures allowing for these services to be conducted remotely for eligible COVID-affected patients.*
***Patients who received a Community Pharmacy in HCH service before 1 July 2019 were eligible for a fourth follow-up review to reflect their longer participation in the trial. All other patients were eligible for three follow-up reviews.*
Source: The Pharmacy Guild of Australia (2020a)[92]

As the trial was administered under the 6CPA, pharmacies wishing to participate were required to conform to 6CPA program rules.[93] Among other things, this meant that services had to be delivered by a registered pharmacist in an area of the premises physically separated from the retail trading floor so that the privacy and confidentiality of the patient was protected. The area needed to be of sufficient size and layout to accommodate efficient workflow, including adequate room for the patient, their carer and the pharmacist, as well as all the consumables, equipment and documentation required for the service. The area needed to be clearly signposted as a private consultation area. When participating community pharmacies were providing services to patients in remote locations, they could be provided via community pharmacy outreach into an alternative private space or via videoconference.

[92] The Pharmacy Guild of Australia. (2020a). *Brief for HCH PHN Facilitators: Overview of medicine review services.*
[93] The Pharmacy Guild of Australia. (2020b). *Community Pharmacy in Health Care Homes Trial Program Trial Program Rules.* http://6cpa.com.au/wp-content/uploads/6CPA_CommunityPharmacyinHeathCareHomes-Program-Rules_Jan2020.pdf

Payments to pharmacies

As for practices, payments to pharmacies were based on the patient's tier. Table 57 shows the amounts by tier (2018 prices). Pharmacies could not charge patients for services delivered as part of the trial, except for dose administration aids, which they could charge at their discretion.

Table 57: Payments to pharmacies (2018 prices)

HCH tier	Payment (maximum)±
Tier 1	$418.75
Tier 2	$1,372.75
Tier 3	$1,642.75

Notes: ± Paid as instalments with the completion of each session – an initial consultation and up to three follow-up reviews. Patients receiving an initial consultation before 1 July 2019 were eligible for a fourth follow-up review to reflect their longer participation in the trial, paid as an additional session on top of the maximum amount shown in the Table.

Source: Australian Government Department of Health (2018a).[94]

Launch of the Community Pharmacy in HCH Trial

Pharmacy engagement via electronic direct mail marketing

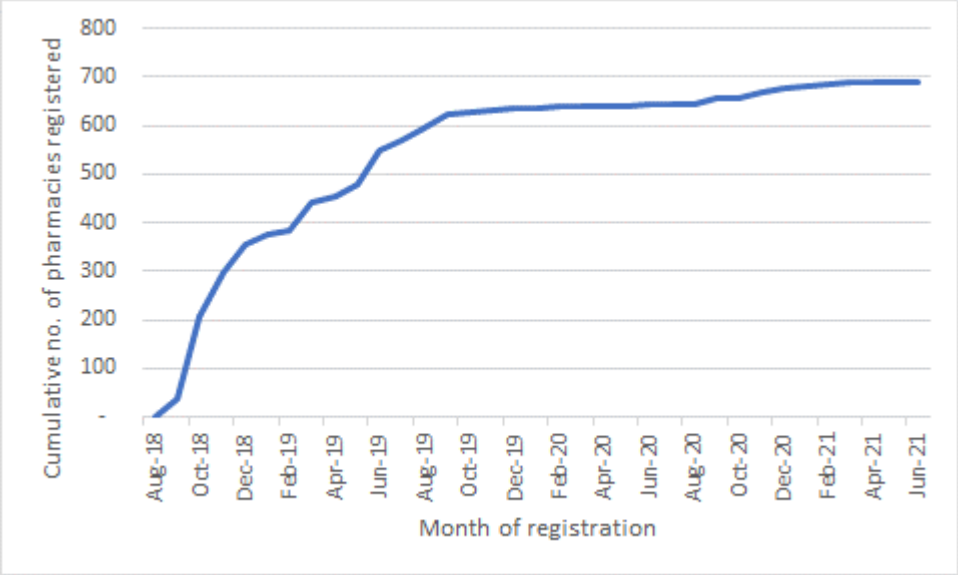
A key objective for the Guild was to engage as many pharmacies as possible in the 10 PHN regions. To achieve this the Guild undertook an extensive electronic direct mail marketing (EDM) campaign to community pharmacy as well as promoting the trial in Guild publications. The Guild did some geospatial mapping of pharmacies and HCHs to ascertain which pharmacies were within a close radius of the HCH trial sites. In the Northern Territory, where distances between medical practices/ACCHS clinics and pharmacies are greater, it involved expanding the radius to 50 kms.

Pharmacies were segmented into different streams for marketing purposes. For example, those pharmacies that were within the trial regions that hadn't registered for the trial received an email encouraging them to participate, while pharmacies that had already signed up received a different email with information about the trial, available resources and training opportunities.

By the trial end (30 June 2021), 689 pharmacies had registered to participate. The bulk of pharmacies (625 or 90%) registered by September 2019 (Figure 80).

[94] *Australian Government Department of Health. (2018a). Community Pharmacy in Health Care Homes Trial Program. Retrieved October 2019 from https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-cp/$File/Community-Pharmacy-in-Health-Care-Homes-Trial-Program-factsheet-Dec-2018.pdf*

Figure 80: Registration of community pharmacies in the HCH trial



Source: Pharmacy Guild of Australia.

Pharmacy registration process

The Guild developed processes for registering pharmacies and resources to assist them to prepare for participation in the trial. The initial process for pharmacy registration included:

- Formal registration to participate in the trial.
- Registering the pharmacy for My Health Record (if not already registered).
- Set-up and training on the GuildLink and shared care plan software.

This initial onboarding process also included checking that the pharmacy can meet the eligibility requirements of the trial, for example, ensuring the pharmacy had a private consultation area available.

On approval, the details of the pharmacy and pharmacist details are forwarded to GuildLink for uploading to the software platform. After the pharmacy is approved to participate, the Guild project team contacts the pharmacy and provides them with some initial information to assist with implementation. This includes providing access to training and promotional materials, guidelines and webinars. The Guild also provides information on which practices are participating in the trial in the local area, and tips for engaging with practices.

Preparing for implementation

After agreeing to participate in HCH, some pharmacies were proactive and initiated contact with HCHs in their area. This often involved a preliminary meeting or an initial phone call to express the pharmacy's interest in receiving referrals, specific services that the pharmacy could provide and/or identify HCH patients who would benefit from these services:

> *"We did have a meeting with [medical centre] … and they were willing to work with us and say if we can make it like a streamline script service for these patients if we have like an arrangement with blood pressure medications then*

they were happy to do that. So yes, it was a lot easier when we had that meeting with the doctors and could come up with agreed services." [CP, R4, Pharmacy 2]

"I went over there and introduced myself and said we would like to participate in this trial and find out where they were up to. They had been having help from one of the [PHN coordinators] of the trial as well, so they had already enrolled quite a few patients in the trial on their end. Then, it was just a question of trying to get them to refer them to us. We went through their list with them and said, oh, these are the guys that come to us, the ones that they had … they were our pharmacy's customers." [CP, R4, Pharmacy 6]

"… we jumped on and said, yes, we'd like to be a part of it. And so, then … And we found out that [GP practice] had signed up to it. And so, it was a doctor surgery in our town. So, I actually rang them and said, we're happy to be involved." [CP, R4, Pharmacy 09]

Some pharmacies went as far as training practice staff members on the community pharmacy trial to increase enrolment numbers and pharmacy referrals:

"So, we actually went into the medical centre ourselves, to train the staff, and actually have pharmacists working in the medical centre to enrol the patients." [CP, R4, Pharmacy 3]

Other interviewees did not mention hosting an initiation meeting or contacting a participating practice but commented that they got involved in the trial because they were encouraged by the Guild or their local PHN, contacted by a HCH practice, were in close proximity to a HCH practice or had an existing relationship with a HCH practice.

Changes pharmacies made

Pharmacists described preparation and changes that they had to make for their pharmacies to participate in the trial. These were largely related to training, staffing and the physical layout of the pharmacy. In certain instances, pharmacies needed to hire additional staff or change staff roles to help them manage HCH patient consultations:

"… once we saw how busy and time-consuming that was, we sort of found out we needed to add you know the pharmacist to kind of allow for me to be off the floor for that time.." [CP, R4, Pharmacy 02]

"I was fortunate I had an intern, and … so, we normally employ two pharmacists during the week … we just had to ensure that we were able to have … So, we've got a couple of consult rooms, and that allow [us] the time to spend with that patient one-on-one. And that wasn't difficult because our practice has enough pharmacists to do that." [CP, R4, Pharmacy 09]

"… we've got our regular pharmacist working as a pharmacist in there, and we've got our pharmacy assistant. So, the shop was running as normal. But … with the Health Care Homes program because obviously it's extra activities, so I myself do the Health Care Homes because I can't expect the pharmacist on there to be doing the everyday things as well as taking on Health Care Homes … so I'm just

the additional extra pharmacist that's there a few days a week, just to do all these extra things." [CP, R4, Pharmacy 07]

Some pharmacies had to alter their physical space or allocate a specific room for patient consultations:

> *"Our pharmacy doesn't have a treatment room or anything like that, so we've used the room at the back so that there was privacy. We could shut the door and staff members weren't walking in and out. So, it was good enough."* [CP, R4, Pharmacy 06]

Other pharmacies did not have to make any changes as they already had the space and staff members required to handle HCH patient referrals. In addition, some pharmacies were already providing services that aligned with HCH, which made preparation and implementation easier:

> *"… I was running with a pharmacy that had consultation rooms and had a dosage administration service and a delivery service and those sorts of things before, so it hasn't really changed those aspects."* [CP, R4, Pharmacy 04]

> *"we've got a couple of consult rooms, and that allowed us the time to spend with that patient one-on-one. And that wasn't difficult because our practice has enough pharmacists to do that."* [CP, R4, Pharmacy 09]

Training and support

Online training modules

Ten eLearning training modules were developed collaboratively by the Guild and the Pharmaceutical Society of Australia (PSA),[95] accessible on the PSA's 6CPA Resource Hub and the Guild's GuildEd learning platform. The modules provide information to assist pharmacies to set-up the trial. For example, Module 1 recommended that participating pharmacies designate a "Trial Program Team Leader". This person (a pharmacist) would be responsible for overseeing trial activities, communicating with other pharmacy staff and ensuring the trial is operating according to 6CPA rules. The other modules have a strong focus on communication and collaboration between the community pharmacy and the HCH team. The modules also included downloadable resources to help promote the pharmacy's services to HCHs and patients.

The modules became available in October 2018. They are hosted both on the Guild's GuildEd learning platform and the Pharmaceutical Society of Australia's (PSA) 6CPA Resource Hub and provided at no charge to pharmacies.

---

[95] Pharmaceutical Society of Australia. (2018a). *Community Pharmacy in Health Care Homes Trial Program training modules now available*. Retrieved June 2021 from https://www.psa.org.au/community-pharmacy-in-health-care-homes-trial-program-training-modules-now-available/

As with the broader HCH trial training, the rate of completion declined with each subsequent module, starting at 23% for module 1, to 6–7% for the last two modules (Table 58). The standalone module relating to pharmacy assistants was completed by 43% of those that enrolled. These figures do not include pharmacists completing the training through the PSA website, for which the evaluation team could not obtain numbers.

Table 58: Community pharmacy trial training module enrolments and completion (on 1 July 2021)

Module	Enrolment number	Completion number	% Completed
Module 1: Preparing your pharmacy for the Health Care Homes Trial Program	899	205	23%
Module 2: Delivering the community pharmacy in Health Care Homes Trial Program	710	123	17%
Module 3: Health Care Homes in practice	710	107	15%
Module 4: Developing a Medication Management Plan	1039	134	13%
Module 5: Implementing and reviewing a Medication Management Plan	908	95	10%
Module 6: Team-based health care	807	88	11%
Module 7: Enhanced communication for a new model of care	768	81	11%
Module 8: Embracing a new approach to community pharmacy practice	711	44	6%
Module 9: Patient journeys	681	48	7%
Module 10: Health Care Homes: what pharmacy assistants need to know	157	67	43%

Source: Pharmacy Guild of Australia.

The Guild pointed out that while the HCH concept and the trial were new, the medication management services being provided by community pharmacies were not. Specifically, Home Medicines Reviews for patients living in the community have been in place since 2001 and medication reviews (MedsChecks) were introduced in 2012. For this reason, completion of the online learning modules was not compulsory.

The community pharmacists interviewed for the round 4 evaluation stated that they completed all 10 of the training modules and were of the few that had done so (see Table 58). Feedback on the modules was largely positive, with many interviewees stating that the training was informative and helpful:

> *"I suppose I look back now that I did it, but I found them really good. Like they did kind of let me learn what was the ideal way of doing the trial."* [CP, R4, Pharmacy 02]

> *"It gave us some understanding at the time about what is expected from us, like every other training GuildCare, you learn more as you go, work with doctors or work with the job itself, and see patients and understand the whole process."* (CP, R4, Pharmacy 08]

> *"They were great. Easy to follow. If you missed something, you could go back. It wasn't difficult to do, and I think it was quite informative … I think for people who aren't [Home Medicines Review] trained, it was good in the way that it explained the best way to do a report … and to be mindful of what you're actually recommending. That you're not a diagnostician, you're not there to prescribe, you're there to make recommendations that will improve outcomes. So, I think it was well set out for that."* [CP, R4, Pharmacy 10]

Some described the modules as "a bit tedious" and that they created "a lot of busy work". But they also said that they included "some nuggets of wisdom."

A few felt that their pharmacies were already providing most of the services being offered to HCH patients or used similar software; therefore, the training acted as a review of things that staff members already knew:

> *"Yes, [it was] useful, just the software component of [the training] … the training was probably stuff that we were doing already. The software platform is very similar to their MedsCheck platform … so if you're familiar with that it wasn't a big change … We've been going more and more towards meds checks, medication reviews, [Home Medicines Reviews], etc. So, they would have had a certain level of knowledge already over and above a lot of pharmacists who have just been the traditional stand in the dispensary and dispense medications and nod to the patient."* [Business Owner, R4, Pharmacy 01]

As an alternative to the online training modules, a few interviewees felt that training that included interactions with others (for example, virtual or in-person webinars) would be a more informative and useful method of learning:

> *"… it doesn't make sense until you're actually doing it … Even if it was a virtual or a webinar, and just say … with doctors and pharmacists and practice managers in the same webinar and saying, oh, this is your role. And then, you can see what they're supposed to do, and see how it flows through … and then, what they see when we send back the review … just so that they could see what we did, but also, we could see what they could see."* [CP, R4, Pharmacy 09]

Another suggestion from pharmacists to improve the modules was additional information and visuals (that is, screenshots) on how to navigate and operate the shared care planning platforms.

Workshops

As a means of training and to further promote the trial, the Guild and PSA ran a series of joint workshops over October and November 2018 in the PHN regions participating in the trial. PHNs, HCHs (mainstream and ACCHS clinics) were invited to attend the workshops. The workshops were also recorded and available as a webinar for those unable to attend.

The Guild reported that due to timing of the workshops, there were fewer pharmacists attending than they would have expected given the interest in the program, and a much

smaller number of GPs and other health professionals. In a written submission for the evaluation, the Guild commented that this low attendance impacted the workshops' effectiveness and the overall awareness of the community pharmacy trial within the regions. The Guild thought that the workshops would have been better attended if they were held in early or mid-2019, to allow more time for pharmacies to register and prepare their pharmacies for the trial, and more time for the Guild to establish relationships with the PHN practice facilitators.

Pharmacy guidelines

The PSA was contracted by the Department to develop guidelines for pharmacists participating in trial.[96] The Guidelines contained:

- Information about the trial – what it is, participating practices and ACCHS clinics, aims and objectives, types of patients/patient eligibility.
- The process – pharmacy registration, patient referrals and consent, initial consultation, medication management plan, follow-up review and supporting services included as part of the trial.
- The shared care plan – what it is, pharmacists' role in the shared care plan, communicating with HCHs and PHNs.
- Health outcome data collection requirements – supporting documentation and recording platform software.
- How to participate in the trial: community pharmacy eligibility requirements and registration.
- Requirements for participation – education and training, consultation area, shared care planning software, GuildCare software, My Health Record, patient privacy
- Support for pharmacies: information and resources, PHN support.
- Payment – remuneration based on patient tier, payment schedule.

Guild support

Beyond contacting pharmacies to encourage them to participate in the initiative, interviewees reported that the Guild helped them install software, hosted training events and provided support via telephone:

> "*… the Pharmacy Guild installed the GuildCare program for us to be able to conduct the interviews and that sort of thing for the … And prepare the medication management plan.*" [CP, R4, Pharmacy 06]

> "*I attended, like, a seminar. I don't know if they call it seminar, but there was a night that which I attend, and then basically we're doing case studies and things like that. And then we're discussing with our peers about the services we could provide.*" [CP, R4, Pharmacy 07]

---

[96] Pharmaceutical Society of Australia. (2018b). *Guidelines for pharmacists participating in the Community Pharmacy in Health Care Homes Trial Program*. https://my.psa.org.au/servlet/fileField?entityId=ka10o000000U2NvAAK&field=PDF_File_Member_Content__Body__s

> *"The first couple of times I had issues, I just contacted their number and somebody wrote me back … but we do have somebody that works at the Guild that we know well, so if I was really stuck I could call her."* [CP, R4, Pharmacy 10]

The Guild also established a helpline for the trial, with the project team available to respond to specific queries and support pharmacies requiring additional assistance. Support was also offered through the Guild's state branches. The Guild provided the same supports to member and non-member pharmacies.

Resource repository

The Guild created an online repository for stakeholders, including the Guild state branches and PHNs. These folders contained the available resources and collateral to assist pharmacies to implement the trial, including guides on how to engage with their local HCH, how to identify eligible patients in the pharmacy and patient consent forms and other materials.

The folders also provided reports for the state branches detailing which pharmacies were participating within each jurisdiction, and those that elected not to participate. This was to ensure there was a coordinated approach to implementation across the national and state offices:

> *"… We host online shared folders with our stakeholders, so PHNs and the branches primarily. So, these online folders contain reports on which pharmacies we've been contacting in their regions for the PHNs and for the branches, so they know what the status of the pharmacies are. So, they might have 90% of the pharmacies in South Australia have registered for the program and the other 10% haven't. And, I've got notes in there telling the branch why they haven't registered. So, please don't pester those pharmacies, but please help the other ones in terms of onboarding them. So, those are shared folders for our stakeholders …"* [R4, Pharmacy Guild]

To assist PHNs and ACCHS, the Guild packaged up the resources in a user-friendly way so that staff could download and use the materials to promote the service to HCHs.

PHN support

PHN support to pharmacies was variable. Some of the community pharmacists stated that their PHN encouraged them to join and provided support. The support came in the form of PHN practice facilitator visits to the pharmacy, phone support and in-person training sessions:

> *"The PHN [facilitator] came out … she was actually helpful in showing me [the shared care software platform] … and showing me some new things that I hadn't discovered myself. And then just offering more like additional services that we could offer to patients. So I think she suggested the whole blood pressure monitoring or calibration thing, all those sorts of services."* [CP, R4, Practice 02]

> *"So it's been positive, I don't feel negative about my interaction with the PHN. I know who to contact there. I know if I have any questions where to go and ask them."* [CP, R4, Pharmacy 04]

> *"I think the primary health care [network] did a few sessions in [city] and I attended those, and we learned more and more of what needed to be done."* [CP, R4, Pharmacy 08]

Other community pharmacists had little to no interaction with their PHN about the trial:

> *"I think sometimes pharmacies are a bit forgotten in the PHNs."* [CP, R4, Pharmacy 09]

> *"No, I didn't hear from them at all."* [CP, R4, Pharmacy 10]

> *"I spoke to one of the facilitators at [PHN], and she sent me a set of instructions on how to do things."* [CP, R4, Pharmacy 06]

In a written submission for the evaluation, the Guild commented that it had variable success engaging PHN practice facilitators with the community pharmacy trial. Because the Guild could not contact practices directly, its avenue for promoting awareness of the trial was the PHN practice facilitators. Engagement with PHNs included the Guild providing information to the PHN as requested, jointly running workshops on the trial for HCH practices, or membership of the local governance committee. The Guild noticed that that those PHNs that did not engage with the Guild had lower patient referral rates in their regions.

Turnover of PHN practice facilitators was identified as an issue for both pharmacies and the Guild. The Guild reported having to re-engage with new PHN practice facilitators each time to provide them with information about the trial.

IT set-up

To participate in the trial, pharmacies had to learn about and implement software programs such as the GuildLink software through the GuildCare platform, and shared care planning software to communicate with and receive referrals from HCH practices.

Guildlink software

The Guild worked with its partner GuildLink to design the software to be used by pharmacies to record details of the pharmacy services provided. The software module was part of an existing software platform called GuildCare NG, which is used by many pharmacies to record other professional services, such as Home Medicines Reviews and MedsChecks.

The main objective in designing the software for the trial was to ensure that it was seamless and easy for pharmacists to use. The software was used to:

- Produce the initial medication reconciliation and medication management plan for a patient.
- Record ongoing medication management reviews.
- Upload the medication management plan to the electronic shared care plan, to be accessible by all members of the patient's HCH team.

- Perform pharmacy reimbursement for each enrolled patient.
- Capture Health Outcomes Data for all patients participating in the trial.

The software also included a calendar for scheduling consultations and a screen to record other support services that the pharmacist wishes to recommend, as well as other features:

> *"So, most of them are familiar with it, but they log in there to record the service and to schedule the Health Care Homes service with the patient. And, when the patient's there in the room they can move through the service workload. They can record it all. They can print out a medication management template. And, that's how we know what to pay them. What services they've done as well …" [R4, Pharmacy Guild]*

Pharmacists detailed their experience with the GuildLink software and generally described their experience with the software as "easy" and "straightforward":

> *"No, I think if you just follow the prompts, I think it's pretty straightforward. So, if the template's already there I can just follow the template."* [CP, R4, Pharmacy 07]

> *"No, I didn't have issues with that, with the GuildCare software, I found that quite easy … Once I had asked them the questions and they were happy to sit there while I type a couple of things in, and then I can print out their plan and they can take it with them."* [CP, R4, Pharmacy 06]

Some pharmacists experienced glitches or had some teething issues with Guildlink but were largely satisfied with the platform or have been able to resolve these issues as they have continued to use platform:

> *"Overall I've found them useful … There are little glitches with all software programs. So, I won't be too narky about it. And often the information is only the person inputting the data, so yes, certainly not perfect … Overall I've found it good."* [CP, R4, Pharmacy 04]

> *"… we understand how the system works. I did have to call [the Guild] a couple of times, because it was hard to navigate that GuildCare. It's all difficult, even with other things we worked for, for pharmacy. At the end, we got the hang of it, and I started to do some work."* [CP, R4, Pharmacy 08]

Other pharmacists were not satisfied with the platform and suggested making some improvements to the software. Many interviewees hoped that the Guild could integrate the platform with the shared care planning software to create a more seamless and efficient process. Pharmacists' recommendations included:

- Integrating the GuildLink platform with the shared care planning software so that relevant patient information is pre-loaded onto the system with their medication management plans. While some pharmacists have been able to pre-populate the GuildLink template using information from their dispensing software, others have not been able to do this.
- Allowing pharmacists to input recommendations beyond what is listed in the predefined check boxes.

- Listing patients' tiers on the platform or the medication management plan so that pharmacists do not have to contact the practice to obtain this information.
- Making the software more "user friendly" and reducing repetitive questions:

  "… it would have all of these ridiculous boxes, like what's the dose, and then how many times a day is it taken? How many tablets do they then take in a week? It was the same thing, three or four times, so it was time intensive in areas where it didn't need to be." [CP. R4, Pharmacy 10]

Shared care planning software

Guild engagement with shared care plan software and vendors

The Guild worked to establish relationships with the various shared care plan software vendors. This became important during the implementation phase when the Guild supported pharmacies' participation in the trial.

During the implementation phase the Guild found that there were pharmacies that were receiving referrals from HCHs via the shared care software, however the emails were being missed for various reasons. The software vendor would then contact the Guild to inform them of the situation and the Guild would follow-up to explain to the pharmacist that they had received a referral from a HCH practice.

In some cases, emails from the practice's shared care software went to pharmacies that had not registered for the trial. In this case, the Guild would contact the pharmacy to encourage them to participate.

Another hurdle was that the shared care software did not integrate with the GuildLink software, and each PHN had a different software platform. This meant that the Guild had to work with individual software vendors to sort out these issues and ensure that referrals for patient consultations were actioned.

The Guild reported that out of the nine shared care planning software vendors, only one worked closely with the Guild to identify and troubleshoot issues.

In one PHN, the shared care software vendor required pharmacies to sign a deed of participation to access the shared care planning software. As the Guild was concerned with some aspects of the contract, they sought legal advice and tried to work with the software vendor as well as consulting with the relevant PHN to resolve the issues to allow pharmacies to participate. However, this was unsuccessful and community pharmacies in this PHN were not able to participate in the trial:

> *"… so it didn't get resolved and our concern there is probably still that there's heaps of Health Care Homes patients that have been enrolled to that broader Health Care Homes trial that then weren't able to get referred through to community pharmacies because those community pharmacies didn't know what to do with this deed of participation. Look, some of them might have signed it and then started receiving these patient invitations, but if they'd asked us for advice on whether to sign it we, according to our lawyers, couldn't endorse it*

because there was just so many problems within the deed …" [R4, Pharmacy Guild]

The Guild also reported that another barrier to pharmacy participation was that some GPs didn't know how to use the shared care software, and thus did not refer patients to pharmacy.

The Guild reported that it was approached by a peak Aboriginal group asking how the ACCHS clinics could refer patients to community pharmacies. The Guild advised that referrals could only be generated via the ACCHS clinics themselves, through the shared care planning software. The lack of awareness of this and the lack of integration of the shared care planning software with practice clinical management software were further barriers to community pharmacy involvement:

> "*… .They're basically approaching us asking us how they can refer patients to pharmacies and we're saying, well, it's not our job to set-up the shared care planning tool. All we can do is make sure the pharmacies are ready to receive those invitations. So, it's different. It's unique in the Northern Territory, but it all seems to revolve around the shared care planning software and I suppose the lack of integration … .*" [R4, Pharmacy Guild]

Pharmacists' experiences with the shared care planning software

Pharmacists discussed difficulties with the shared care planning due to the lack of integration of the various software platforms:

> "*This is one of the issues we've come across with … all of these different records. So, in [practice clinical management software] there, probably in Guild software here, [shared care planning software] is trying to connect the two, and then you've got My Health Record looming over the top. So, there's a few different areas where you've got push things and click things and have things set-up. Here you're using [shared care planning software x], but in other jurisdictions they might be using a different [system], there's about three or four even maybe more providers of shared care plans. So, some places, one doctor's surgery might be using [shared care planning software y] and another doctor's surgery might be using something else and another doctor's surgery's using something else. So, all of a sudden the allied health, including pharmacies are having to try and connect to three or four different [platforms], it can make it difficult.*" [CP, R4, Pharmacy 01]

> "*… [the shared care planning software] I would say I struggled a bit with. It was a little bit paint by numbers until you've figured it out, and there wasn't really anywhere to easily access how to do it. Once you were up and running and you'd done a few it was okay, but the first couple it was very hard to download the documents, because it's not integrated with the Guild. So, you had to save your reports in a file, and then go into [shared care planning software], and upload that report to the doctor.*" [CP, R4, Pharmacy 10]

Some interviewees stated that the software was "weirdly worded" and more difficult to follow in uploading the medication management plans and attaching associated patient

information. Also, because patient tier was not a mandated field in the shared care planning software, if this information was not provided, pharmacies could not claim for HCH pharmacy services without contacting the practice:

> *"But the thing that was really bad was they couldn't flag in their platform what tier they were, which is the most vital thing out of everything, because when you're doing a claim or when you're putting through the Guild and then back into the platform, you've got to say what tier they are. So, I had to ring the clinics all the time."* [CP, R4, Pharmacy 10]

> *"The [shared care planning software] part of it was okay to use as well … It was more a question of being able to attach my documents from the Guild … I'd make a PDF document from GuildLink, and then to try and attach it to the care plan in [shared care planning software] … It wouldn't send between me and the doctors. It was more technical problems rather than ease of use of the program. It was just [doing what] they said they were having teething problems or something, and they were trying to work it out, but I found that I had a lot of problems just between my end and their end, that's all."* [CP, R4, Pharmacy 06]

Some pharmacists felt that there was limited training on the shared care software and stated that they devoted a lot of time trying to understand how to use the software:

> *"There's various platforms, and pharmacy has the added I would say step, and I would also call it a disadvantage, that we needed to also train ourselves on the [shared care planning software], which we have never used."* [CP, R4, Pharmacy 03]

> *"I guess maybe there wasn't much [in the modules] about the [shared care planning software] itself. So, I had to spend a lot of time really kind of just learning about it myself and just playing around with it. That's probably one thing and then second thing, maybe just offering a way to kind of really set-up in the pharmacy. I guess they tell you how to do the medication, the management plans and all this, but maybe just how to set it up so you can call patients."* [CP, R4, Pharmacy 02]

In a few instances pharmacists felt that the shared care planning software was easy to use, and they did not experience any issues:

> *"So, with the shared care platform, I assume you mean the [shared care planning software]? I think that everything you need to know is pretty much on there. I mean, there's a wealth of information in there. So, you've got the patient history, you've got which medications they're on. It's pretty easy to use."* [CP, R4, Pharmacy 07]

> *"Yes, easy. [Shared care planning software is] a good tool for us to have access to that, because you can see what their kidney function is or you can see what their cholesterol levels are like or their HbA1cs and all that sort of stuff. Whereas before we weren't privy to any of that."* [CP, R4, Pharmacy 01]

In a written submission for the evaluation, the Guild collected community pharmacists' experiences with using shared care planning software, and identified the following additional issues:

- Shared care planning software patient referrals came from unfamiliar sources and so they often landed in pharmacies' junk email folders and were not identified or actioned by the pharmacy.
- When they did get through, because of the different vendors, pharmacies didn't readily recognise referrals.
- When pharmacies received a patient referral from a shared care planning system, they often didn't know how to navigate the software platform because there was no platform-specific training or resources available to pharmacies or the Guild (except for one vendor).
- Shared care planning software vendors reported that some practices/ACCHS clinics only nominated the pharmacist's name with no other contact details when setting up a referral, leaving the vendor to source missing contact data. This caused referrals to not be sent to pharmacies in some cases.
- Patient referrals often did not specify that the patient was a HCH patient, which led to confusion amongst pharmacies over whether the referral was for the HCH service or a Home Medicines Review, or whether it had been sent by a HCH practice or a non-HCH practice. Many shared care planning software platforms did not even specify an option to refer a patient for the HCH trial.

The Guild also confirmed that many pharmacies found it confusing and laborious to record the trial service on multiple platforms. Typically, a pharmacist providing a service to a HCH patient would need to record information on:

- The shared care planning software, to transmit the completed MMP to the referring practice/ACCHS clinic.
- GuildCare, to generate the MMP and record the trial service for payment.
- My Health Record, as required by the Program Rules.
- Email – shared care planning software patient referrals were received via email however pharmacies were often asked by HCH practices/ACCHS clinics to send their completed MMPs to practices/ACCHS clinics via email instead of through the software.

Community pharmacists' feedback predominantly focussed on further integrating the shared care planning software with the GuildLink platform. The Guild also recommended that:

> "*A software solution should be used which allows pharmacies to receive patient referrals and record them within a single platform, and which integrates automatically with other platforms if needed. Such a platform would allow pharmacies to receive the referral, record the service, generate a Medication Management Plan and share 'live' data back and forth with the referring GP without having to use another platform*." [Pharmacy Guild, written submission for the evaluation, August 2021]

21

Community Pharmacy in HCH Trial – pharmacy and patient participation

Box 28: Chapter summary

Similar to HCHs, some pharmacies participated in the community pharmacy trial in HCH because they were already providing similar services to those expected as part of the initiative, and they thought that the model is the future of pharmacy. Another reason for participating was the benefits of the initiative for patients. For example, pharmacists felt that they have more time to devote to patients than do GPs and are more accessible. Therefore, they felt that they could fill gaps in care that may be overlooked by GPs and reduce the burden on GPs. They were also motivated to participate to strengthen their relationships with HCH practices.

While 689 pharmacies registered to participate in the trial, only 95 had undertaken a consultation with at least one patient. These pharmacies each consulted with 16 patients on average (although more than half of the pharmacies had consulted with less than 5 patients). Patients were referred from 40 of the 165 HCH practices that enrolled more than one patient.

Follow-up reviews were not mandated and only scheduled if they were of benefit to the patient. Of the patients with an initial review, 845 had one follow-up, 588 had two, 402 had three and 150 had four.

The main service pharmacists reported providing to HCH patients were medication reviews and support services such as dose administration aids, blood pressure monitoring, medical device education and training, and blood glucose monitoring. GPs most commonly reported that they had received a medication management plan for all or the majority of the patients that they referred, and that the pharmacist outlined supporting services for their patients.

Pharmacists that had completed follow-up reviews reported they would check in with the patient, reinforce what was discussed in the initial consultation and discuss medication changes, what has been beneficial for the patient, treatment goals, patient compliance and patient outcomes related to receiving education.

Pharmacists reported that COVID-19 affected both their capacity to provide services to HCH patients due to competing demands as well as not having access to patients due to lockdowns.

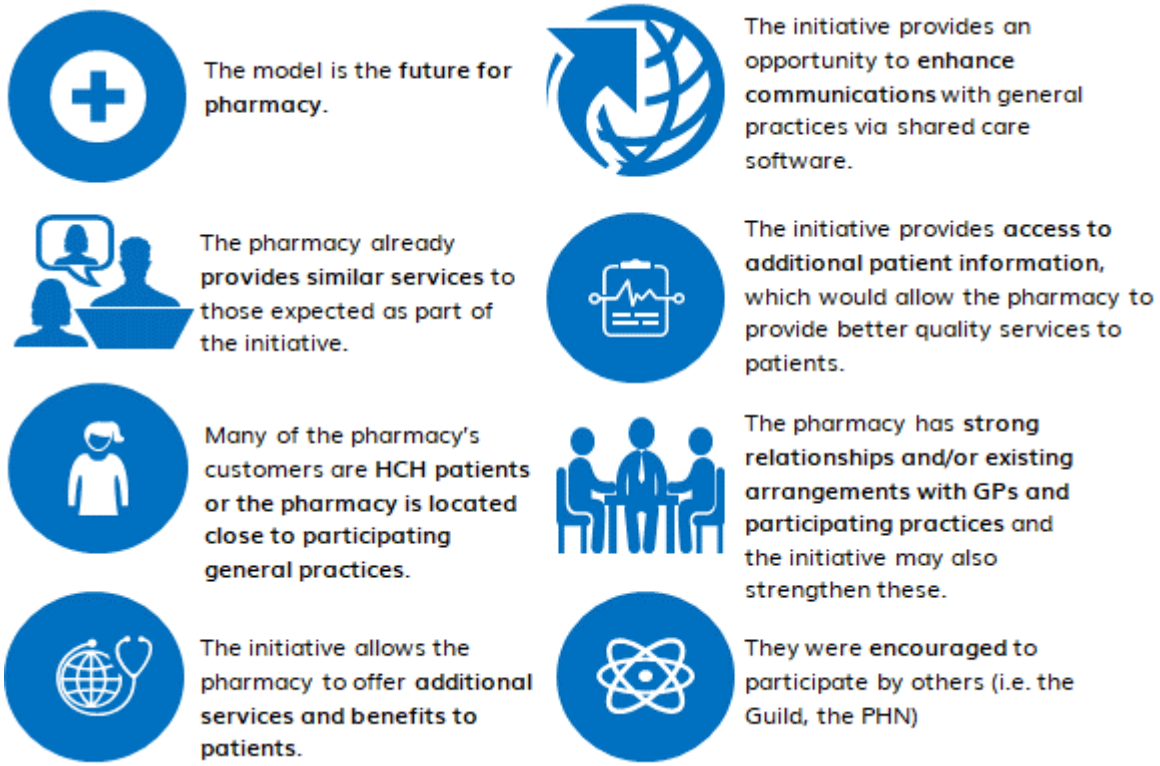
Pharmacists largely reported positive experiences with the community pharmacy trial. Benefits included practising what they are professionally trained to do and making a positive difference to patients' health.

Due to the very low number of referrals, only a small amount of the funds allocated to the trial were used. The impact of community pharmacy on quality use of medicines and cost savings arising from this could not be determined due to low participation in the trial.

Pharmacies

Community pharmacists listed a variety of reasons for wanting to participate in the trial (Figure 81).

Figure 81: Motivations reported by pharmacies for participating the community pharmacy in HCH trial



Source: Case study interviews, R4 Nov 2019–Mar 2020.

In addition to providing services, pharmacists felt that they have more time to devote to patients than do GPs, and are more accesible:

> "*It's just basically giving the patients a space. They can't always get appointments with their GPs. The pharmacists are always available*." [CP, Pharmacy 3, R4]

Therefore, they felt that they could fill gaps in care that may be overlooked by GPs and reduce the burden on GPs "*… giving the patient a pharmacy home linked to their GP…*" [CP, Pharmacy 3, R4].

While 689 pharmacies registered to participate in the trial, only 95 had undertaken a consultation with at least one patient, with an average of 16.1 patients being consulted per pharmacy (although more than half of the pharmacies had consulted with less than 5 patients to 30 June 2021).

Chapter 23 (p. 305) discusses some of the reasons for low referrals. One of these was practices' access to pharmacists through other arrangements. In the initial survey of practices as part of the evaluation (round 2, undertaken between November 2018 and March

2019), 23 practices said they had access to a pharmacist. Of these, six employed a pharmacist, eight had access to one from the local hospital, another six had access to one via a grant or other support from the PHN, and a further three through other means.

Patients

The number of patients receiving at least one consultation from a participating pharmacy was 1,531. Table 59 shows the characteristics of these patients.

Table 59: Community pharmacy trial patient characteristics

Characteristic	Total (n = 1,531)	Tier 1 (n = 152)	Tier 2 (n = 739)	Tier 3 (n = 640)
Sex				
Female	866 (57.6%)	90 (60.0%)	398 (55.2%)	378 (59.7%)
Male	638 (42.4%)	60 (40.0%)	323 (44.8%)	255 (40.3%)
Age group				
0–24	33 (2.2%)	2 (1.3%)	16 (2.2%)	15 (2.4%)
25–44	116 (7.6%)	6 (3.9%)	40 (5.5%)	70 (11.1%)
45–64	473 (31.2%)	40 (26.3%)	185 (25.2%)	248 (39.2%)
65–74	390 (25.7%)	54 (35.5%)	202 (27.6%)	134 (21.2%)
75–84	348 (22.9%)	38 (25.0%)	213 (29.1%)	97 (15.3%)
85+	158 (10.4%)	12 (7.9%)	77 (10.5%)	69 (10.9%)
English speaking				
Yes	1,263 (82.5%)	145 (95.4%)	654 (88.5%)	464 (72.5%)

Source: Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2021.

In the second and third waves of the patient survey, patients were asked about whether a pharmacist had reviewed their medications. Of the 1,843 patients who completed the second survey, 47.2% (n = 869) indicated they had had a review with a pharmacist. Of these, 72.3% (n = 627) indicated the consultation had taken place at a community pharmacy. The numbers were similar for the third survey, where 43.0% (n = 585) patients had a consultation with a pharmacist and 68.6% (n = 399) said it occurred at a community pharmacy.

Patients were taking medicines for a wide range of conditions (Table 60). Medicines were commonly prescribed for: high blood pressure (64%); high blood cholesterol (47%); heart disease (39%); diabetes (37%); respiratory conditions (30%); arthritis (29%); depression or anxiety (26%); pain (22%); and digestive disorders (21%). Prescriptions for medicines for heart disease, depression and anxiety, diabetes, kidney disease and respiratory illnesses increased with tier (although relatively few patients were taking medicines for kidney disease).

Table 60: Health conditions for which patients are taking medicines

Condition	Total (n = 1,531)	Tier 1 (n = 152)	Tier 2 (n = 739)	Tier 3 (n = 640)
F04 Heart disease	594 (38.8%)	47 (30.9%)	289 (39.1%)	258 (40.3%)
F05 Stroke	97 (6.3%)	7 (4.6%)	51 (6.9%)	39 (6.1%)
F06 Cancer	65 (4.2%)	5 (3.3%)	38 (5.1%)	22 (3.4%)
F07 Osteoporosis	212 (13.8%)	23 (15.1%)	112 (15.2%)	77 (12.0%)
F08 Depression or anxiety	394 (25.7%)	26 (17.1%)	188 (25.4%)	180 (28.1%)
F09 Arthritis	438 (28.6%)	44 (28.9%)	246 (33.3%)	148 (23.1%)
F10 Diabetes	569 (37.2%)	39 (25.7%)	265 (35.9%)	265 (41.4%)
F11 High blood pressure	975 (63.7%)	106 (69.7%)	498 (67.4%)	371 (58.0%)
F12 Asthma	15 (1.0%)	1 (0.7%)	3 (0.4%)	11 (1.7%)
F13 High blood cholesterol	721 (47.1%)	67 (44.1%)	375 (50.7%)	279 (43.6%)
F14 Pain	338 (22.1%)	36 (23.7%)	164 (22.2%)	138 (21.6%)
F15 Digestive	315 (20.6%)	44 (28.9%)	175 (23.7%)	96 (15.0%)
F16 Kidney disease	173 (11.3%)	5 (3.3%)	65 (8.8%)	103 (16.1%)
F17 Respiratory	452 (29.5%)	28 (18.4%)	233 (31.5%)	191 (29.8%)
F18 Other conditions	792 (51.7%)	68 (44.7%)	351 (47.5%)	373 (58.3%)

Source: Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2021.

Patient follow-up

Following the initial consultation, patients were entitled to three follow-up reviews, except for patients who received a service before 1 July 2019, who were eligible for a fourth review to reflect their longer participation in the trial. Just over half of the patients with an initial consultation had at least one follow-up review (Table 61).

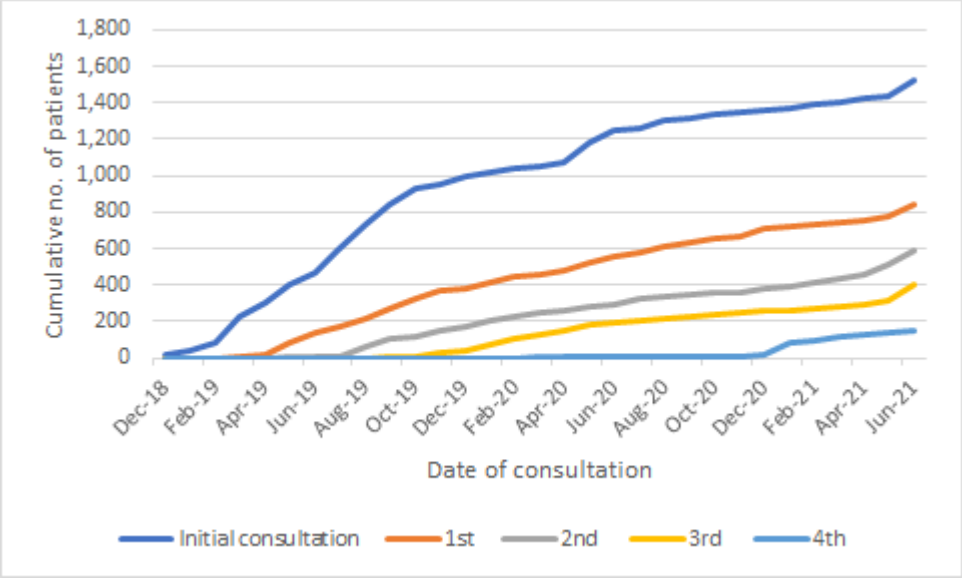
Table 61: Follow-up of patients

Consultation	No. of patients	% of patients followed up from previous consultation
Initial	1,531	
1st review	845	55%
2nd review	588	70%
3rd review	402	68%
4th review	150	37%

Source: Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2021.

One of the factors limiting follow-up reviews was when the previous review was undertaken (Figure 82). With some initial consultations not occurring until 2021, there were limited opportunities to follow up patients as part of the trial.

Figure 82: Follow-up of patients over time



Source: Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2021.

Pharmacists said that it was sometimes hard to get patients to come in for a review. To maximise follow-up, a few attempted to ring patients to come in for their review and some tried to catch patients during their regular visits to the pharmacy when they were picking up medication or getting their blood pressure checked:

> "*So, I attempt to catch them when they are in the pharmacy. Like every two or three months they have to come in anyway, so when I see them here I just catch them for, you know, to do the subsequent interviews. So, I find it hard to get people to come in especially just for this subsequent [review].*" [CP, Pharmacy 7, R4]

Pharmacists who completed follow-ups reported they would check in with the patient, reinforce what was discussed in the initial consultation and discussed medication changes, what has been beneficial for the patient, treatment goals, patient compliance and patient outcomes related to receiving education (for example, improved diet, smoking cessation or increased use of asthma inhaler):

> "*We initially had to make some goals, treatment goals, that sort of thing. So, I would say, okay, last time I saw you, we talked about this … How are you going with that? Have you made an improvement? … Or are you using your puffer more often? That sort of thing, because we talked about that last time, and yes, that sort of thing. That was more like the second … The subsequent interviews were about reinforcing what was talked about in the first one.*" [CP, Pharmacy 6, R4]

> "*In the initial consult, I'll draft up the medication plan and then I try and do it one or two months after the initial. I'll have a catch up with them, and then I'll always review the list there and see what has worked, what hasn't, what we need to add on. And then, depending on their level of care, it might be then six months after that, or it might be another two months after that one.*" [CP, Pharmacy 2, R5]

Services provided by community pharmacies

Medication management

The main service that pharmacies provided to patients was medication management. They described this as similar to services they were already providing before the trial (such as Home Medicines Reviews or MedsChecks), but that the main difference with HCH was the ongoing management of patients and communication with the patient's GP. One pharmacist described the reviews with HCH patients as "more targeted":

> *"Certainly, more than a MedsCheck. I think if they were using the same electronic system in an [Home Medicines Review] it would be similar, in a lot of ways. But an [Home Medicines Review is] just a point in time. So, the initial would probably be the same as an [Home Medicines Review], but then you wouldn't have the ongoing management of the person in terms of managing their medications and reordering prescriptions and that sort of thing. So, it's a bit of an amalgamation of both, in that sense. The ongoing monitoring. So, my answer is more overall."* [CP, Pharmacy 4, R4]

> *"I feel like the Health Care Homes patients get a lot more follow-up. Because we are reporting straight to the doctors and then I've seen action from that. Like medications which we saw duplicated. Like same class is duplicated. And then you know, some of those medications were ceased. And then that patient might have put the same script in for that ceased medication but because I was there, I made sure that she didn't make that same mistake. So, I think there's a lot more follow-up with Health Care Home patients."* [CP, Pharmacy 2, R4]

Medication reviews allowed pharmacists to suggest medication changes or adjustments, detect and rectify any medication discrepancies, monitor medication compliance and provide education. One GP highlighted the benefits of having the community pharmacist involved in HCH patients' care. These advantages included patient accessibility and having another provider monitoring patients' medications:

> *"…the chemist is quite good in adjusting the dose of medication because they can't get to the doctor quickly. For example, over the weekend or a long holiday if they go to the chemist and they ask if they can adjust the dose. And then the week after they let me know, this is what's happening, is that okay with you or do you need to review the patient?…I suppose a couple of the more complex patients, they're often suggesting some small changes, which is one of the most useful things they do…Otherwise, they're sort of keeping track on a lot of them for errors…Errors in when the patients that have come in and out of hospital and the medications have changed, or other things like that…"* [GP1, Practice 24, R5]

In the final staff survey for the evaluation, GPs were asked for approximately what proportion of their HCH patients whom they referred to a community pharmacist they had received a medication management plan from the community pharmacist. Table 62 shows these responses. GPs most commonly reported that they had received a plan for all or the majority of the patients that they referred.

Table 62: Proportion of HCH patients referred to a community pharmacist for whom the GP received a medication management plan from the community pharmacist

Response	n (%)
All/majority of HCH patients referred to a community pharmacy (80–100%)	9 (38%)
Most HCH patients referred to a community pharmacy (50–79%)	3 (12%)
Some HCH patients referred to a community pharmacy (20–49%)	6 (25%)
None/very few HCH patients referred to a community pharmacy (less than 20%)	6 (25%)

Source: Staff survey R5 Mar–May 2021, question 16C.

Support services

Patients were offered services to help them achieve the goals they agreed to in their MMP. Table 63 shows the support services offered to patients for their identified goals. The most common support services offered were dose administration aids (25%) and blood pressure monitoring (23%).

Table 63: Support services provided by community pharmacist

Goal	Number receiving service (% of patients with goal)					
	Asthma m anage-ment plan	Blood gluose monitor-ing	Blood pressure monitor-ing	Dose Administ-ration aid (DAA)	Medical device use training/ education	Other
Improved medication adherence	7 (1.1%)	39 (6.0%)	53 (8.1%)	348 (53.1%)	30 (4.6%)	107 (16.3%)
Improved patient knowledge about their medicines leading to improved medication use and disease self-management	12 (1.8%)	70 (10.3%)	215 (31.6%)	24 (3.5%)	40 (5.9%)	99 (14.5%)
Improved technique/usage of medication devices	23 (9.5%)	13 (5.3%)	14 (5.8%)	21 (8.6%)	101 (41.6%)	32 (13.2%)
Optimise the medication dose and/or number or type of medicines	3 (1.1%)	8 (2.8%)	38 (13.4%)	24 (8.5%)	6 (2.1%)	103 (36.3%)
Reduced medication side effects		10 (4.9%)	44 (21.5%)	39 (19.0%)	5 (2.4%)	140 (68.3%)
Other	4 (1.4%)	18 (6.4%)	60 (21.4%)	14 (5.0%)	6 (2.1%)	80 (28.5%)
Total number (%) of patients receiving the service	**49 (2.6%)**	**158 (8.5%)**	**424 (22.9%)**	**470 (25.4%)**	**188 (10.2%)**	**561 (30.3%)**

Source: Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2021.

Some pharmacists reviewed what additional services they could add to benefit HCH patients. In some instances, this involved freeing up more space to consult with patients or purchasing equipment to offer additional services:

> "*...me and the owner of the pharmacy, contacted a few reps. We contacted [Business] to help us with trying to put in a system to calibrate blood pressure machines. We contacted a few of our blood glucose monitor companies just to see if they could send us control* solutions *so we could offer more calibration of the blood glucose machines. I think we were able to manage to get some free space to offer our asthmatic clients, and I do an asthma management test for all the asthmatic clients and provide that information to the doctors as well. Those are the main ones that we've been able to really utilise since the Health Care Homes trial.* [CP, Pharmacy 2, R5]

> "*In fact, in last six months...[the pharmacy] added another room, what they call their consulting room so they can sit with the patient and explain a few bits and pieces which is always good.*" [GP, Practice 16, R5]

Community pharmacists and practices commented on the support services that they provided:

> "*The pharmacists have proactively offered education around blood pressure management and asthma management from what I've seen. They have commented to patients following an informal medication review that they might be contraindications, and therefore facilitate a more formal medication review. I can see that they're having* conversations *with patients about appropriate storage of medications, appropriate use of them, the timing for when they might use it, so with reference to an asthma plan for example. And I can see that they're capturing for me information about what other medications or supplements the patient might be taking that I'm unaware of...*" [GP, Practice 9, R5]

> "*Most of them, I'd say the majority of them, the service the client wants is the dose* administration *aid. So that immediately puts us in close contact with the surgery to manage their prescriptions. And also then changes to the pack and that sort of thing, we stay in touch with the surgery as a result of that.*" [CP, Pharmacy 4, R4]

> "*Definitely the packing of medication for the patient. Inhaler techniques were also really good. Blood pressure checks...They're something that upon request we'll do them or if there's any concern from the patient. Definitely anything to do with medication techniques, inhalers, all that supportive role reinforcement.*" [CP, Pharmacy 11, R5]

> "*I think I mentioned earlier that one of our pharmacists, who's very active in the program, is a diabetes educator.* So, *she's been taking appointments. Saturdays are quieter in the pharmacy, so she's been fantastic at getting the patients back into the pharmacy on a Saturday, setting up blood glucose monitoring for them, doing follow-up appointments. So, she's been extremely active in doing that.*" [CP, Pharmacy 3, R4]

Some pharmacists felt that the trial could have allowed for a wider scope of practice so pharmacists could use the funding to provide services that would offer the most benefit to their patients:

> "*… we have the resources to continue to monitor patients' compliance with their medication* through *regular follow-ups. And then we have the chance of monitoring their blood sugar, blood pressure, cholesterol and then we'll be more receptive to doing home deliveries. For example, if there's funding for Health Care Homes and then we'll be able to provide a lot more services. But what I'm saying is the scope* of *practice needs to be more expanded and more well-defined, rather than just those few things that they mention on there. I feel it would be better … I feel it would be good to continue on the service, but with more expanded practice.*" [CP, Pharmacy 7, R4]

In the practice staff survey for the evaluation, GPs were also asked whether the pharmacist outlined supporting services that he/she planned or could deliver to support the patient's achievement of their medication management goals. Table 64 shows that GPs most commonly reported that the pharmacist outlined supporting services for their patients.

Table 64: Did community pharmacists outline supporting services that could be delivered to support patients' medication management goals?

Response	n (%)
Yes	15 (83
Maybe	2 (11%)
No	1 (6%)

Source: Staff survey R5 Mar–May 2021, question 16E.

Impact of patient tier and level of service delivery

Some pharmacists stated that the amount of time they spent with a patient directly corresponded to the patient's tier. Tier 1 patient reviews often took the least amount of time while tier 3 patients were usually the most time-consuming:

> "*So, I would still say at least 30 minutes [for a tier 1 patient], if that's possible … T2? I would* say *they'd probably be a good hour … And then T3, I would say they're an hour and a half. Just needing more of those services and, yes, more of the write-up as well.*" [CP, Pharmacy 2, R4]

> "*A tier 1 is probably only about 10 minutes … tier 2s were probably a tad longer than* what *you'd expect a normal MedsCheck to be. So, our normal MedsChecks would be 10 minutes, maybe 15 or so, if they were complicated … And then, a tier 3 patient, if there were lots of complications, I could be there for a half an hour or a bit longer.*" [CP, Pharmacy 10, R4]

Others felt that the amount of time and services provided depended on the patient's condition and the medications they were on, irrespective of the tier:

> "*For us, this is a guideline that we try to adhere to, but in practice, it just doesn't work that way. As I said, sometimes I have to talk to a patient, say, usually about*

20 minutes, 30 minutes, just to re-consult on medication. And if you have inhaler techniques and things like that, you need to check to make sure they work. It may add up to another 10–15 minutes." [CP, Pharmacy 8, R4]

"*I think regardless of the tier, to me, any Health Care Homes patient, we offer them the same services. Most of my patients are tier two, there are a couple of patients who are tier one, which I'm not quite sure why, she's on quite a lot of medication, she should really be on tier two, but we still offer them the same service, that's in my case. I don't really look at what tier they are, if you are my customer, we give you the same service… I guess it's down to the individual, if they have a lot of medications, a lot more complex issues, then you naturally take longer.*" [CP. Pharmacy 7, R5]

A few pharmacists perceived that their services benefitted tier 3 patients the most. Others felt that there were advantages to pharmacy involvement in HCH patients' care, regardless of their tier:

"*Because we've had a small number of tier three patients. I feel those are the ones that we have helped significantly because they're the ones the doctors have identified to need more care. But we get a lot of tier one and tier two, which we can do medication checks for and it does help them. And then there are other services that we might implement like monthly blood pressure checks. But I think personally tier three patients get the most benefit out of it.*" [CP, Pharmacy 2, R5]

"*…the majority of the patients we've got would be tier two. But yes, I think we've definitely got some ones. And yes, I think definitely, yes [they have benefitted from supporting pharmacy services]…there's some tier one patients that I think we're doing those services for.*" [CP, Pharmacy 1, R5]

Regardless of their views about variation in time required by patient tier or other patient factors, pharmacists agreed that the initial HCH patient consultation was the longest, and follow-ups were a lot shorter.

Impact of COVID

While some pharmacists felt COVID-19 had limited to no impact on the trial, others stated that the pandemic negatively impacted the trial as they were dealing with other pressures, changing workflows and were unable to catch up with patients face-to-face:

"*It probably had a negative impact there, because particularly, probably in February, March last year through to mid-year, I think just the way that… I mean we were probably just scrambling to adapt. It was like everywhere, things went a bit crazy in pharmacy. There was a bit of panic, and the script dispensing numbers, and just general trade went up. And we'd reduced or changed workflow. It was all a little bit of survival for a while there.*" [CP, Pharmacy 1, R5]

"*…purely from a time perspective. There was just no time to focus on any of our front of dispensary services, so Health Care Homes took a bit of a break between April through to July and then we picked back up slowly after that period. I think*

the other thing was just everyone feeling a little bit nervous about coming out or social distancing and all that stuff. So we waited for things to get back to normal before we were able to touch back base with a lot of our patients." [CP, Pharmacy 2, R5]

With patient's reduced visits to pharmacies, pharmacists reported following patients up via phone or caught them during patients' regular visits to the pharmacy or general practice:

"*...with COVID, I mean, things have changed a little bit, people aren't coming to the medical centre as much. So I think the Health Care Homes' front, in terms of patients coming in, that's quietened down because patient efficacy has changed, they don't really want to come into the medical centre, unless it's necessary. So, the only way to get the patient is when they're actually in the surgery, so we take the opportunity to do the interviews at that time, rather than calling in the patient to come in especially for this. But we've been just concentrating on our regular customers who are coming in.*" [CP, Pharmacy 7, R5]

"*...the last year was more difficult. We did a lot of phone catch ups rather than face to face.*" [CP, Pharmacy 1, R5]

During the pandemic, pharmacists also reported implementing or expanding their medication delivery services. This service was especially useful for patients who were concerned about coming into the pharmacy due to their chronic diseases. Others stated that a core benefit of the program was access; patients were able to receive services despite not being able to attend physically to a practice or pharmacy:

"*One of our patients we don't see as often in the pharmacy, just when they usually pick up their monthly medications, because they've chosen to take advantage of the delivery services that we offer now. So just that regular monthly touch base thing. A lot of our customers are doing a lot of their script ordering and getting it delivered because of COVID-19. Not just Health Care Home patients but just in general.*" [CP, Pharmacy 2, R5]

"*A lot of patients accessing prescriptions or needing medication or trying to get into the doctor. I think my view on that is that that's probably one of the really good parts of the program, was the accessibility of the patients to be able to access their medication. Now with e-script, it's coming even more, it's even better. During COVID we've got access to continue dispensing. We can help patients if they can't see the doctor. But this allowed the contact between the patient and the doctor and prescriptions was very good.*" [CP, Pharmacy 11, R5]

Community pharmacists' experience with the trial

Pharmacists largely had positive experiences with the community pharmacy trial. Benefits included practising what they are professionally trained to do and making a positive difference to patients' health:

> "*... many pharmacists say to me that they did all this high level of training in pharmacy skills and then they work just basically dispensing it. And this kind of work brings more satisfaction to them and greater use of the skills that they've spent years acquiring. Is that fair to say? Yes, definitely. I think that's the type of pharmacist I am. I would prefer to do this kind of work ... I was happy to sort of be nominated as this kind of pharmacist for the trial.*" [CP, Pharmacy 2, R4]

> "*Yes, because it's the nitty gritty of it, really, you can make a difference, I think. And doing these reviews, there's been numerous things where we've found a problem or being able to make an improvement.*" [CP, Pharmacy 1, R4]

In their written submission, the Guild noted:

> "*.. many participating pharmacists highlighted that the Trial provided an opportunity for them to build a closer relationship with their nearby GP practices and ACCHS. They took the opportunity to hold case conferences and meetings with GPs to discuss patient progress, and the Trial provided pharmacists with a platform to discuss deeper issues or concerns about patients' medication use. Many pharmacists also praised the service structure, saying that the multiple follow-ups with their patients were valuable opportunities to monitor patient progress and medication goals, and adjust care for their patients.*"

And further that:

> "*..participating pharmacies overwhelmingly expressed their support of the Trial service and its' benefits for their patients. Further, pharmacies overwhelmingly indicated that they would participate in providing such a service to their patients again if given the opportunity.*"

Community pharmacists were largely satisfied with the level of remuneration for delivering services to HCH patients. Many commented that HCH medication reviews were more time consuming then regular MedsChecks, therefore, it was reasonable for them to receive additional funding for HCH patients:

> "*Because obviously we get paid quite a lot for just a T1 one consultation which includes the medication review ... So the normal one, I think you get paid about $60 and you're meant to spend half an hour to do that. So, Health Care Homes consultations will take me half an hour to sit in with the customer. But then it can take me about an hour to write it up. So, an hour and a half versus, let's just say, an hour for a normal one. You're probably only making about, you know, two or three times more what a normal would make...coming out at about the same...So I think it's a lot more time-consuming to do that...And so they just breaking even in terms of dollars per minute or dollars per hour...*" [CP, Pharmacy 2, R4]

Cost of the community pharmacy trial

In 2018–19, the Australian Government allocated $30 million under the 6CPA for community pharmacists to provide services to HCH patients. By the end of the trial, only $4.9 million of this was expended (Table 65).

Table 65: Total expenditure on community pharmacy services provided to HCH patients

2018–19 ($m)	2019–20 ($m)	2020–21 ($m)	Total ($m)
1.8	2.2	0.9	4.9

Source: Department of Health data provided for the evaluation.

The total paid to pharmacies for services to HCH patients (excluding any charges to patients for dose administration aids) was $1.2 million (Table 66).

Table 66: Payments to community pharmacies for services provided to HCH patients

	Tier 1	Tier 2	Tier 3	Total
a. Claims – n	375	1,782	1,359	3,516
b. Total payment for 4 reviews‡	$418.75	$1,372.75	$1,642.75	
c. Payment per review (=b/4)	$104.69	$343.19	$410.69	
d. Claims – $ (=c*a)	$39,259	$611,565	$558,128	$1,208,951

Notes: ‡ Based on amounts in Table 57.

Source: Calculated based on Pharmacy Guild data of claims by tier provided for the evaluation.

22

Community Pharmacy in HCH Trial – patient outcomes

Box 29: Chapter summary

Most patients interviewed had limited to no awareness of the community pharmacy trial and had not had their medications reviewed by a pharmacist.

Some patients stated that they have had medication reviews at home or at their local pharmacy. However, these may have been independent of the community pharmacy in HCH trial. Nevertheless, patients reported that having their medication reviewed by their pharmacist was largely a positive experience and that their pharmacist was able to adjust their medications or provide education.

Pharmacists involved in the trial indicated that most patients were receptive to services from them as part of the trial. In some instances, there were HCH patients who felt that the service wasn't necessary.

The most common goals agreed to in the patients' medication management plan (MMP) were "improved patient knowledge about their medicines leading to improved medication use and disease self-management" (45%) and "improved medication adherence" (43%), but these varied substantially between tiers.

For most of the patients' goals related to their medication management, at least two people were identified as being responsible for helping the patient achieve their goal, most commonly the carer/patient and pharmacist. Carers/patients were considered mainly responsible where the goal was to improve technique of medication devices. Pharmacists were considered responsible for goals relating to improved medication adherence and improved knowledge. Although GPs were less likely to be considered responsible for a goal, they were considered responsible for goals relating to optimising dose and reducing side effects.

The most common outcomes for the first review included reconciliation of the medication list, medicine education, and the pharmacist providing the patient with disease state information. The same outcomes were also commonly reported for all the subsequent reviews.

According to patients' self-report, they had fewer hospitalisations in the six-month period before the later assessments compared with the initial assessments, but this was not statistically significant. There were however statistically significant improvements in the average patients' medication adherence score and in the pharmacists' belief of patients' adherence to medication regime for tablets or capsules.

The community pharmacists interviewed generally considered that the trial was well received by patients, and in their view, patients' compliance with and general knowledge of their medications improved. Some pharmacists reported improved communications with GPs and other roles in practices, which benefitted their patients.

Most patients interviewed had limited to no awareness of the community pharmacy trial and had not had their medications reviewed by a pharmacist:

> "*No, do they do that? … I was thinking the other day, with what I'm on. I thought it'd be nice just to see what a pharmacist … Because I was going to actually talk to the doctor when I saw her next. And I thought just what interacts with the different drugs and that?*" [Patient 2, Practice 18, R4]

> "*No [we haven't had any medication reviews with the pharmacist]. We've only been with our pharmacist for about three years. And not to my knowledge, no. She always talks and discusses things with me, and whatever medication we're getting or whatever, and asks questions.*" [Patient 1, Practice 10, R4]

While a few patients stated that they had participated in a medication review with a pharmacist, this was often before HCH and not related to the trial.

Several patients mentioned that their GP or a specialist reviewed their medications during their regular visits:

> "*They [haven't done any kind of medication reviews] but the doctor goes through it every so often. He checks what I'm having and whether it's still needed or … yes.*" [Patient 8, Practice 7, R4]

> "*The doctor would be the one to talk about the medication. And I've seen a cardiologist and a vascular person, so, it comes from them.*" [Patient 4, Practice 4, R5]

Some patients stated that they have had medication reviews at home or at their local pharmacy. However, these may have been independent of the community pharmacy in HCH trial. Nevertheless, patients reported that having their medication reviewed by their pharmacist was largely a positive experience and that their pharmacist was able to adjust their medications or provide education:

> "*Well, what it is…he's a visiting pharmacist. He goes around to all the patients, he does home visits for patients, that's all he does. He does a damn good job of it.*" [Patient 2, Practice 9, R5]

> "*[Practice] organised twice to have a pharmacist come and check [Patient 1]'s medication … it was good … the first time we got it was before this [Health Care Homes] came in.*" [Patient 2, Practice 16, R4]

> "*… [Patient 2] didn't want to go, remember you didn't want to go. You didn't see why chemists needed to interview us. So, we went down in the doctor surgery, there was a room provided for [Patient 2] … And it was, do you understand your medication? Do you know the side effects of anything? And then, things that could make things better like I suffer from dry skin. So, he recommended a heavier moisturiser. And there were little things like that, that he gave me little clues to. That are not really medical-related as you need to see a doctor. I was just little bits of advice, and I thought, oh he understands us now. So, now we always go to*

the same chemist. And the prescriptions from the same pharmacy, because we had 12 within walking distance." [Patient 3, Practice 9, R4]

"*Yes, I've been, I go and see the pharmacist, he came round once to our house, maybe he's been twice, but he does regular updates, and what's happening and all that, and he's switched on too, because if he thinks the doctor needs to change something he'll say, I'll give a ring and do it.*" [Patient 1, Practice 24, R4]

HCH patient reception to receiving pharmacy services

Pharmacists involved in the trial indicated that most patients were receptive to services from them as part of the trial:

"*I think they all thought that they were a bit special, so, that was nice, to get this free service from the pharmacy. But also … We said to them, you'll have to come in next week and get your blood pressure checked. They thought that was important, you know what I mean? They felt good that we were taking some responsibility for their care.*" [CP, Pharmacy 9, R4]

"*Yes, most patients are [receptive]. It's in their benefit, why not? And they like us to be involved. All of them said the same thing, we'd like to have you on board. I'd like you to see my medication, to review it, to see what's going on. What should I be taking? Can I go without this medication? They ask us a few questions about their medication. So, in a way, we feel like this is a needed conversation with the patient on a one-to-one basis.*" [CP, Pharmacy 8, R4]

"*I think most of them were fine. There was definitely a percentage, probably 10 to 15% of patients that weren't even ours and when we tried to make contact, they weren't interested, or they visited another pharmacy.*" [CP, Pharmacy 11, R5]

Patients who followed through with referrals were more likely to be existing customers of the pharmacy:

"*Because this pharmacy is the main one that provides medications to the clinic, most of the patients that we get here are regular patients. Well, actually, all the ones that are signed up are, pretty much, the regular patients that come in here. And they're due to pick up their medications on a monthly basis.*" [CP, Pharmacy 5, R4]

"*So, because they're familiar with us I was able to get them involved, so I've got my regular customers involved. So, I've got a few that's nominated at our pharmacy but doesn't come to us, I don't really know them. So, I managed to actually get a small number to come in … But the other ones, I don't know …*" [CP, Pharmacy 7, R4]

In some instances, there were HCH patients who were less receptive and felt that the service wasn't necessary. Pharmacists also described scenarios where they would receive a patient referral from a practice and would contact the patient, but the patient would not respond to their call or show up for an appointment. This may have been due to the practice referring

patients who may not have needed medication reviews or lack of patient engagement and interest in receiving these services:

> *"I think the problem is with the Health Care Homes, what I find is the patient has no idea about Health Care Homes. They have no knowledge of what's going on. So, I had a few patients, and they all said exactly the same [thing]. They said, what's all this about? And I said, you signed up for the Health Care Homes, didn't the doctor explain it to you? No. Do you know what Health Care Homes is about? No."* [CP, Pharmacy 8, R4]

> *"… other ones basically were like, you know, I don't need your help. So, you know, you can't really do much there. And you just let the doctors or coordinators know."* [CP, Pharmacy 2, R4]

> *"When I say I want to do this review or interview, I mean, they'll do it, but I feel that they are lukewarm to the ideas, maybe they're not sure why we need to be involved."* [CP, Pharmacy 7, R4]

> *"I did 30-something, yes. But I've got 106 that were referred to me … We've rung them three or four times, and they've never responded. They've booked appointments and not shown up for them, and we've followed up and they still haven't shown up. The phone number's not the correct phone number, so I ring the clinic and they don't have a different one. There were quite a few people who said, look, I don't want to do that, I'm running on one medication, or I don't take any medications."* [CP, Pharmacy 10, R4]

Patient outcomes

Patient outcomes were assessed using data collected by the Pharmacy Guild as part of the pharmacy trial. The data were provided to HPA for the period to 30 June 2021. Table 67 shows there was a high level of polypharmacy among the patients who were involved in the pharmacy trial with almost 80% being grouped as polypharmacy (5 to 9 medications) or hyper-polypharmacy (10 or more medications). The proportion of patients in the no polypharmacy group decreased with increasing tier. Patients in tier 3 tended to be scored lower by pharmacists on medication adherence for tablets than patients in tiers 1, but there does not appear to be a difference in the patients' MedsIndex score.

Table 67: Patient medication characteristics

Characteristic	Total (n = 1,531)	Tier 1 (n = 152)	Tier 2 (n = 739)	Tier 3 (n = 640)
Number of medications				
No	312 (20.4%)	50 (32.9%)	164 (22.2%)	98 (15.3%)
Polypharmacy	716 (46.8%)	74 (48.7%)	374 (50.6%)	268 (41.9%)
Hyper-Polypharmacy	503 (32.9%)	28 (18.4%)	201 (27.2%)	274 (42.8%)
Medication adherence (MedsIndex score)				
0 to <50	89 (5.8%)	9 (5.9%)	50 (6.8%)	30 (4.7%)
50 to <80	322 (21.0%)	21 (13.8%)	165 (22.3%)	136 (21.2%)
80 to <85	169 (11.0%)	18 (11.8%)	93 (12.6%)	58 (9.1%)
85 to <90	168 (11.0%)	22 (14.5%)	89 (12.0%)	57 (8.9%)
90 to <95	357 (23.3%)	42 (27.6%)	141 (19.1%)	174 (27.2%)
95 to 100	426 (27.8%)	40 (26.3%)	201 (27.2%)	185 (28.9%)
Patient's MedsIndex score				
Mean (median)	82.8 (90.0)	84.1 (90.0)	81.8 (88.0)	83.7 (90.0)
Pharmacists' belief of patients' adherence to medication regimen for tablets capsules (0 to 10)				
Mean (median)	8.4 (9.0)	8.9 (9.0)	8.5 (9.0)	8.1 (8.0)

Source: Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2021.

Among the patients who participated in the community pharmacy trial, 55% (n = 845) had at least one review, 38% (n = 588) had a second review, and 26.3% (n = 402) a third (Table 68). Longitudinal analysis of these data does not include the data from the fourth review because 95% of the 150 patients who had fourth review were from just three practices.

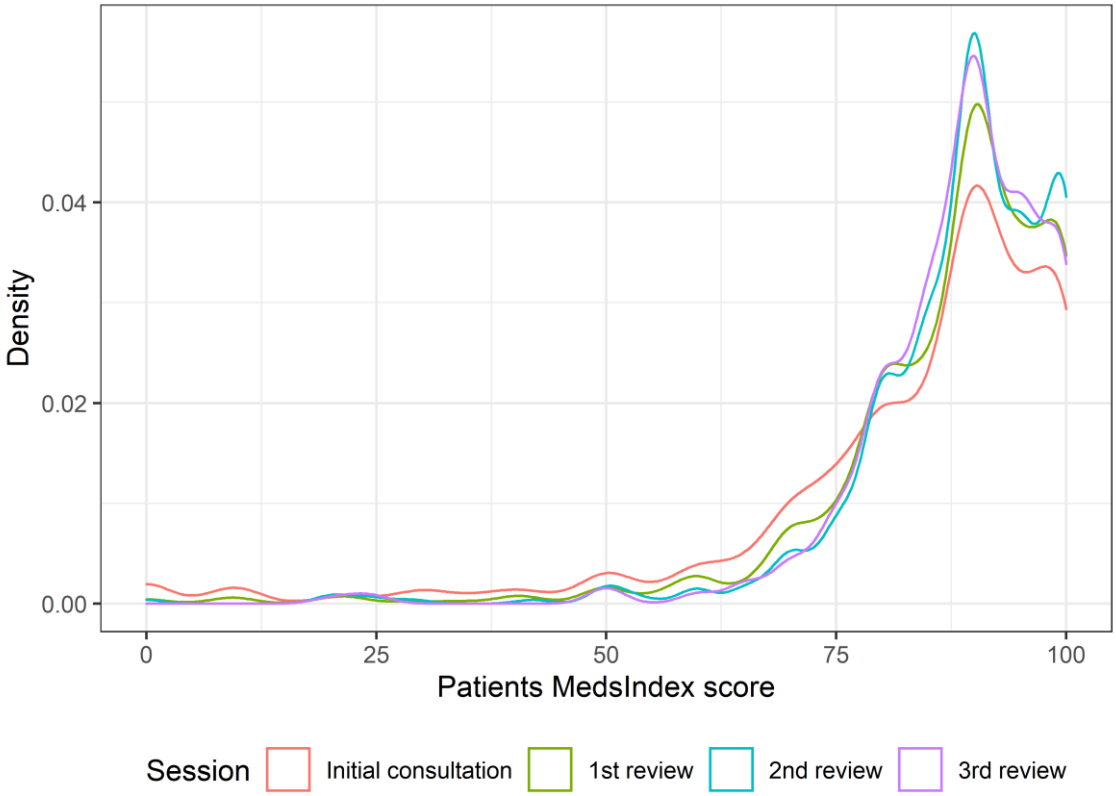
There was very little change in the proportion of patients who were on less than five medications over the first three reviews. There were however statistically significant improvements in the average patients' medication adherence score (change (95% CI): 1.14 (0.86 to 1.43) per review) and in the pharmacists' belief of patients' adherence to medication regime for tablets or capsules (change (95% CI): 0.065 (0.027 to 0.102)) (see Figure 83 and Figure 84). The improvement in patients' MedsIndex score can be seen in Figure 83 because the density curve for the initial consultation is lower (that is, fewer people) at high values of the MedsIndex score than it is for the other reviews.

Table 68: Community pharmacy trial medication changes at each review

Characteristic	Initial consultation (n = 1,531)	1st review (n = 845)	2nd review (n = 588)	3rd review (n = 402)	4th review (n = 150)
Number of medications					
No	312 (20.4%)	154 (18.2%)	117 (19.9%)	69 (17.2%)	16 (10.7%)
Polypharmacy	716 (46.8%)	348 (41.2%)	229 (38.9%)	158 (39.3%)	52 (34.7%)
Hyper-polypharmacy	503 (32.9%)	343 (40.6%)	242 (41.2%)	175 (43.5%)	82 (54.7%)
Medication adherence (MedsIndex score)					
0 to <50	89 (5.8%)	18 (2.1%)	8 (1.4%)	4 (1.0%)	
50 to <80	322 (21.0%)	128 (15.1%)	75 (12.8%)	57 (14.2%)	6 (4.0%)
80 to <85	169 (11.0%)	111 (13.1%)	71 (12.1%)	47 (11.7%)	17 (11.3%)
85 to <90	168 (11.0%)	97 (11.5%)	90 (15.3%)	73 (18.2%)	43 (28.7%)
90 to <95	357 (23.3%)	224 (26.5%)	156 (26.5%)	98 (24.4%)	31 (20.7%)
95 to 100	426 (27.8%)	267 (31.6%)	188 (32.0%)	123 (30.6%)	53 (35.3%)
Patient's MedsIndex score					
Mean (median)	82.8 (90.0)	86.7 (90.0)	87.7 (90.0)	87.4 (90.0)	90.0 (90.0)
Pharmacists' belief of patients' adherence to medication regimen for tablets or capsules (0 to 10)					
Mean (median)	8.4 (9.0)	8.8 (9.0)	8.7 (9.0)	8.7 (9.0)	8.8 (9.0)

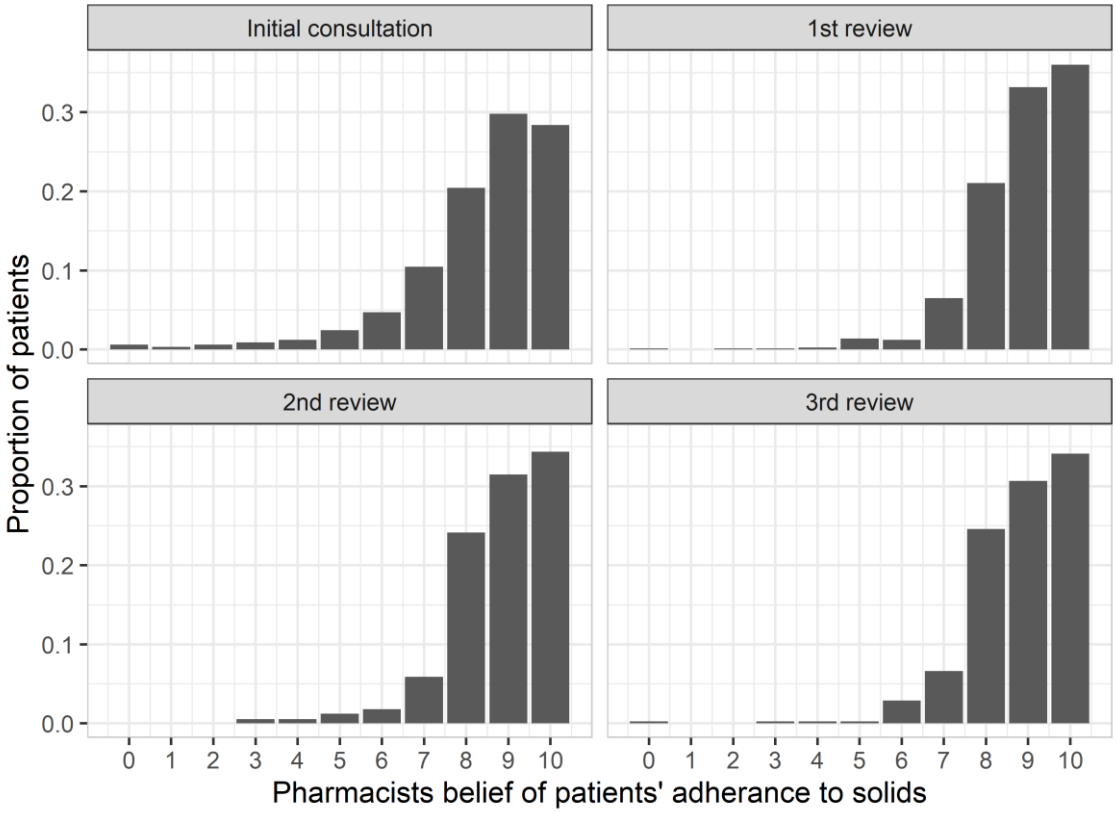
Source: Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2021.

Figure 83: Density plots of patients' MedsIndex scores by review type



Source: Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2021.

Figure 84: Pharmacists' assessment of patients' adherence at each review



Source: Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2021.

The Pharmacy Guild data showed that at the time of their initial consultation, patients in tier 3 (15.8%) were more likely to report they had been hospitalised in the last six months than patients in tiers 1 (5.3%) and 2 (7.0%). There were 161 (10.5%) patients hospitalised in the six-month period before the patients' initial review. There were fewer hospitalisations in the six-month period before the later reviews, but the modelling suggests the trend over the period was not statistically significantly different from no change (p = 0.07).

The most common goals agreed to in the patients' medication management plan (MMP) were "improved patient knowledge about their medicines leading to improved medication use and disease self-management" (45%) and "improved medication adherence" (43%), but these varied substantially between tiers (Table 69). Patients in tiers 1 and 2 were much more likely to have the goal of "improved patient knowledge" than patients in tier 3 (63% in tier 1, 56% in tier 2 and 31% in tier 3), but patients in tier 3 were more likely to have the goal of "improved medication adherence" (15% in tier 1, 36% in tier 2 and 57% in tier 3). The goals of "improved technique/usage of medication devices" (16%), "optimise the medication dose" (19%), and "reduced medication side effects" (13%) were less common.

Table 69: Goals identified in medications review

Goal	Total (n = 1,531)	Tier 1 (n = 152)	Tier 2 (n = 739)	Tier 3 (n = 640)
Improved medication adherence	655 (42.8%)	23 (15.1%)	267 (36.1%)	365 (57.0%)
Improved patient knowledge about their medicines leading to improved medication use and disease self-management	681 (44.5%)	96 (63.2%)	386 (52.2%)	199 (31.1%)
Improved technique/usage of medication devices	243 (15.9%)	20 (13.2%)	116 (15.7%)	107 (16.7%)
Optimise the medication dose and/or number or type of medicines	284 (18.5%)	24 (15.8%)	121 (16.4%)	139 (21.7%)
Reduced medication side effects	205 (13.4%)	17 (11.2%)	76 (10.3%)	112 (17.5%)
Other	281 (18.4%)	37 (24.3%)	137 (18.5%)	107 (16.7%)

Source: Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2021.

For most patients' goals related to their medication management, at least two people were identified as being responsible for helping the patient achieve their goal (Table 71). Table 70 shows that for the five pre-defined patient goals, both carer/patient and pharmacist were reported as being responsible in over 50% of cases. Carers/patients were considered responsible in 75% of cases where the goal was to improve technique of medication devices. Pharmacists were considered responsible for improved medication adherence by 72% of patients who set this goal and responsible for improved knowledge by 84% of patients. Although GPs were less likely to be considered responsible for a goal, GPs were considered responsible for goals relating to optimising dose (64%) and reducing side effects (62%).

Table 70: Person responsible for medication management goal

Goal	Person responsible (% of patients with goal)			
	Patient/carer	Pharmacist	GP	Other
Improved medication adherence	488 (74.5%)	468 (71.5%)	205 (31.3%)	21 (3.2%)
Improved patient knowledge about their medicines leading to improved medication use and disease self-management	516 (75.8%)	570 (83.7%)	215 (31.6%)	20 (2.9%)
Improved technique/usage of medication devices	182 (74.9%)	203 (83.5%)	48 (19.8%)	5 (2.1%)
Optimise the medication dose and/or number or type of medicines	173 (60.9%)	182 (64.1%)	182 (64.1%)	25 (8.8%)
Reduced medication side effects	112 (54.6%)	151 (73.7%)	126 (61.5%)	20 (9.8%)
Other	171 (60.9%)	211 (75.1%)	135 (48.0%)	32 (11.4%)

Source: Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2021.

Table 71: Number of people responsible for medication management goal

Goal	Number of person types responsible (% of patients with goal)			
	1	2	3	4
Improved medication adherence	212 (32.4%)	364 (55.6%)	74 (11.3%)	5 (0.8%)
Improved patient knowledge about their medicines leading to improved medication use and disease self-management	232 (34.1%)	268 (39.4%)	171 (25.1%)	10 (1.5%)
Improved technique/usage of medication devices	87 (35.8%)	119 (49.0%)	35 (14.4%)	2 (0.8%)
Optimise the medication dose and/or number or type of medicines	95 (33.5%)	105 (37.0%)	79 (27.8%)	5 (1.8%)
Reduced medication side effects	56 (27.3%)	99 (48.3%)	45 (22.0%)	5 (2.4%)
Other	107 (38.1%)	91 (32.4%)	72 (25.6%)	11 (3.9%)

Source: Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2021.

There was a significant downward trend over the reviews in the percentage of patients whose goal was to improve their adherence to medication (Table 72). And although there appeared to be an increase in the goal of improved knowledge about their medicines between the initial consultation and the first review, there was not a significant trend over the reviews. There was a slight, non-significant, decrease in the goal to optimise medication dose, and inconsistent changes in the other two goals.

Table 72: Goals identified in medications review, by initial consultation and follow-up reviews

Outcome	Initial consultation (n = 1,531)	1st review (n = 845)	2nd review (n = 588)	3rd review (n = 402)	P†
Improved medication adherence	655 (42.9%)	327 (38.7%)	210 (35.5%)	139 (34.5%)	0.0025
Improved patient knowledge about their medicines leading to improved medication use and disease self-management	681 (44.6%)	447 (53.0%)	324 (54.7%)	224 (55.6%)	0.3448
Improved technique/usage of medication devices	243 (15.9%)	141 (16.7%)	93 (15.7%)	59 (14.6%)	0.8244
Optimise the medication dose and/or number or type of medicines	284 (18.6%)	145 (17.2%)	91 (15.4%)	47 (11.7%)	0.1083
Reduced medication side effects	205 (13.4%)	146 (17.3%)	90 (15.2%)	42 (10.4%)	0.2710

Notes: †P value for trend across reviews derived from a generalised linear mixed model.
Source: Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2021.

Outcomes of the MMP (that is, what the pharmacist did) are shown in Table 73. The most common outcomes for the first review included: the pharmacist updating reconciled medication list (95%), the pharmacist providing the patient with medicine education (78%), and the pharmacist providing the patient with disease state information (62%). The very high reporting of reconciled medication list continued in subsequent reviews, but there was a tendency for lower levels of many of the other outcomes. Notably there was a substantial reduction in Health Care Home/GP verbally consulted about patient, and although starting from a very low level, pharmacist participated in HCH team care meetings.

Table 73: Outcomes of medication management plan

Outcome	Initial consultation (n = 1531)	1st review (n = 845)	2nd review (n = 588)	3rd review (n = 402)	P†
M01 Pharmacist updated reconciled mediation list	1,457 (95.2%)	797 (94.3%)	560 (95.2%)	391 (97.3%)	0.557
M02 Pharmacist provided patient with medicine education	1,197 (78.2%)	519 (61.4%)	385 (65.5%)	288 (71.6%)	<0.001
M03 Pharmacist provided patient with disease-state information	955 (62.4%)	442 (52.3%)	333 (56.6%)	273 (67.9%)	0.015
M04 HCH/GP advised of issues identified through other communication	439 (28.7%)	128 (15.1%)	87 (14.8%)	70 (17.4%)	<0.001
M05 Pharmacist used technology-assisted follow-up reminders (for example, text messages, email messages)	232 (15.2%)	113 (13.4%)	98 (16.7%)	73 (18.2%)	0.658
M06 Health Care Home/GP verbally consulted about patient	336 (21.9%)	49 (5.8%)	27 (4.6%)	13 (3.2%)	<0.001
M07 Pharmacist suggested patient referred to other health provider (e.g. allied health)	158 (10.3%)	64 (7.6%)	62 (10.5%)	66 (16.4%)	0.039
M08 Pharmacist participated in HCH team care meetings	58 (3.8%)	9 (1.1%)	6 (1.0%)	2 (0.5%)	<0.001
M09 Pharmacist referred patient for an additional medication management service	87 (5.7%)	30 (3.6%)	25 (4.3%)	19 (4.7%)	0.016

Notes: †P value for trend across reviews derived from a logistic regression model fitted using generalised estimating equations.

Source: Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2021.

Pharmacists' perceptions about patient outcomes

The community pharmacists interviewed generally considered that the trial was well received by patients, and in their view, patients' compliance with and general knowledge of their medications improved:

> *"I think, the ones that we started on dosage administration, their compliance obviously improved dramatically, because we deliver the packs to them on a weekly basis…I think patients are becoming more aware of their medicines, I think they're taking a more keener approach, they are more keen compared to before, and they're more interested in how they control their management plan. So I think they've become more knowledgeable and then they know they could get more services under this Health Care Homes program."* [CP, Pharmacy 7, R5]

> *"The patients have found it most beneficial. I think of the 11, we have started doing dosage administration for eight of those, which is really good. Their compliance has increased, their MedsIndex scores, their average have all increased. I had a quick look at that last night. So, the health care outcomes for the patients have been really remarkable, I would say."* [CP, Pharmacy 3, R4]

> *"Say, for instance, one of the ladies had asthma, and she was still smoking, and so I talked to her about quitting smoking, and I actually got her to quit smoking … Also, there were quite a few people who needed to be reminded to use their puffers the right way, the technique of using them. So, it was quite good that way. And to be using them regularly rather than just when they're sick and that sort of thing. So, there were quite a few incidences where that seemed to be of quite a good benefit."* [CP, Pharmacy 6, R4]

Some pharmacists reported improved communications with GPs and other, which benefitted their patients:

> *"…we converted people from their own packing to our packing to try and make it more formal. To try and link it in with the doctor more."* [CP, Pharmacy 11, R5]

> *"The two that I'm thinking of that have had outcomes but were a couple. They were tier three [patients] and they were the ones that started up on the packs, but they just had a point where they just needed all these supporting services. And through better communication between the pharmacy and the doctor and even the family, we were able to eventually get them the care that they needed, the supporting services and things like that. So, they went from living independently to getting some supporting services from the pharmacy. They were coming and picking up their packs initially but then through a concern of their ability to drive, we spoke to the doctors and the families, and then we eventually started delivering their packs to them. And then eventually they went into supported care services. I think that was all the team working together and just updating each other on what we saw and what we thought would be best for them. I wouldn't say that's a happy ending, but it's the biggest outcome that I've seen as part of the trial. I had one patient who was seeing her GP who was a Health Care Home trial GP, and then she was seeing a geriatrician who wasn't part of the Health*

Care Home team. And I picked up through the medication check that she was taking multiple antidepressants, which could have been a bad result for her. So, yes, I went to the doctor and got one of them ceased, and then as a result we were then able to just make sure that the doctor and the geriatrician were communicating better. And just in the pharmacy through some of the recommendations, I've had some good results I've had with the patients with muscle pain that wasn't quite being managed as best as it could be with opioids and anti-inflammatories on prescription." [CP, Pharmacy 2, R5]

A few pharmacists reported that it was difficult for some patients to visit the pharmacy for routine care, such as blood pressure checks, due to lack of transport or mobility:

"But it's really difficult to get them to follow through. So like with blood pressure checks. You know, can you come into the pharmacy every week? But sometimes it's a transport issue like [with] the elderly. They need someone to come with them. Yes, so you know you put a plan out there. But it may not always be followed through. And then medication list is quite easy to have them involved. You know it's just making sure that you've got the right information and confirming it with them and the doctor. So, yes. I think it's just those extra services I think which are difficult to follow through with." [CP, Pharmacy 2, R4]

Pharmacists were asked for their observation of the patients' achievement on the patients' agreed goals since their last review. Approximately 60% of patients were considered to have had partial or significant improvement for medication adherence (Table 74). There was over 50% partial or significant improvement in the goals of "Improved patient knowledge about their medicines leading to improved medication use and disease self-management", and "Improved technique/usage of medication devices". There was also improvement in "Optimise the medication dose and/or number or type of medicines" and to a lesser extent "Reduced medication side effects". There was no statistically significant change in the combined outcome of partial or significant improvement over time.

Table 74: Pharmacists' observations of patients' achievements of goals

Goal	Level of achievement	1st review (n = 845)	2nd review (n = 588)	3rd review (n = 402)
Improved medication adherence	Deterioration	11 (1.0%)	23 (2.6%)	8 (1.2%)
	No Change	390 (35.7%)	317 (35.8%)	211 (32.8%)
	Partial improvement	286 (26.2%)	278 (31.4%)	197 (30.6%)
	Significant improvement	349 (31.9%)	241 (27.2%)	227 (35.3%)
	Other	57 (5.2%)	27 (3.0%)	0 (0%)
Improved patient knowledge about their medicines leading to improved medication use and disease self-management	Deterioration	61 (3.7%)	66 (4.6%)	42 (3.9%)
	No Change	583 (35.2%)	535 (37.7%)	373 (34.6%)
	Partial improvement	656 (39.6%)	570 (40.1%)	491 (45.5%)
	Significant improvement	269 (16.2%)	198 (13.9%)	117 (10.9%)
	Other	88 (5.3%)	51 (3.6%)	55 (5.1%)
Improved technique/usage of medication devices	Deterioration	8 (1.7%)	12 (3.4%)	5 (1.9%)
	No Change	194 (40.4%)	133 (37.5%)	106 (40.9%)
	Partial improvement	141 (29.4%)	169 (47.6%)	111 (42.9%)
	Significant improvement	100 (20.8%)	41 (11.5%)	32 (12.4%)
	Other	37 (7.7%)	0 (0%)	5 (1.9%)
Optimise the medication dose and/or number or type of medicines	Deterioration	12 (2.1%)	13 (2.7%)	0 (0%)
	No Change	295 (50.6%)	247 (50.9%)	176 (60.3%)
	Partial improvement	131 (22.5%)	118 (24.3%)	55 (18.8%)
	Significant improvement	98 (16.8%)	87 (17.9%)	53 (18.2%)
	Other	47 (8.1%)	20 (4.1%)	8 (2.7%)
Reduced medication side effects	Deterioration	2 (0.3%)	0 (0%)	5 (1.5%)
	No Change	465 (61.8%)	478 (77.2%)	248 (73.2%)
	Partial improvement	112 (14.9%)	78 (12.6%)	38 (11.2%)
	Significant improvement	51 (6.8%)	51 (8.2%)	44 (13.0%)
	Other	123 (16.3%)	12 (1.9%)	4 (1.2%)

Source: Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2021.

Box 30: Brief review of literature on outcomes of pharmacist–PCMH interactions

Several studies have examined patient outcomes as a result of increased collaboration between pharmacists and PCMHs. Many of these relate to specific chronic conditions.

A systematic review by Hwang et al.[97] of physician-pharmacist collaboration concluded that these models are effective in improving both blood pressure control and glycated haemoglobin (HbA1c) levels. Another review by Kennalty et al[98] came to similar conclusions and suggested there is potential for positive results for patients with asthma, chronic obstructive pulmonary disease, kidney disease, heart failure and hyperlipidaemia. Both reviews suggested that the principal mechanism in effecting these outcomes is increased health care utilisation (in the form of more visits to the pharmacist rather than the doctor) and medication intensification, with more equivocal evidence for

[97] Hwang, A. Y., Gums, T. H., & Gums, J. G. (2017). The benefits of physician-pharmacist collaboration. *Journal of Family Practice*, *66*(12), E1-E8.

[98] Kennelty, K. A., Polgreen, L. A., & Carter, B. L. (2018). Team-Based Care with Pharmacists to Improve Blood Pressure: a Review of Recent Literature. *Current Hypertension Reports*, *20*(1), Article 1.

improved medication adherence.

Matzke et al.[99] compared outcomes for a collaboration group involving a pharmacist with a comparison group for a population of 2,480 patients with two or more of a group of seven target chronic diseases (congestive heart failure, hypertension, hyperlipidaemia, diabetes, asthma, chronic obstructive pulmonary disease, and depression). In comparison to the non-pharmacist group, those with pharmacist involvement showed improved HbA1c, blood pressure, or total cholesterol levels, as relevant to their conditions. There were also indications of reduced hospitalisation for these conditions.

Kocarnik et al.[100] found no association between the presence of a pharmacist and improved medication adherence in a primary care clinic population with diabetes. They did, however, find that in those clinics where pharmacy services are perceived by other health providers as a service bottleneck, there was decreased adherence. Also, O'Neill et al.[101] in a study of collaborative case management in a Veterans Health Administration population found no difference to a comparison group in blood pressure reduction but did find medication intensification in the group involving a pharmacist.

Romanelli et al.[102] in a controlled study found that patients undergoing a medication management program within a PCMH setting were more likely to experience a larger number of primary care visits but reduced rate of hospitalisation. Other measures, including blood pressure or low-density lipoprotein levels, did not differ between the groups.

Brunisholz et al.[103] examined outcomes for patients with diabetes of a collaborative model of pharmacy care under which the pharmacist was given responsibility for care management and coordination of the care team. Interventions included development and enacting of a treatment plan, medication management and medication adjustment. Patients receiving the pharmacist intervention were 93% more likely to have lower blood pressure, more likely to have improved HbA1c levels and 87% more likely to achieve disease management goals than those in the comparison group.

Similarly, Peterson et al.[104] examined a physician-pharmacist collaborative management model in which the pharmacist identified patients with uncontrolled diabetes and the met with patients before

---

[99] Matzke, G. R., Moczygemba, L. R., Williams, K. J., Czar, M. J., & Lee, W. T. (2018). Impact of a pharmacist-physician collaborative care model on patient outcomes and health services utilization. *American journal of health-system pharmacy : AJHP : official journal of the American Society of Health-System Pharmacists*, *75*(14), 1039-1047.

[100] Kocarnik, B. M., Liu, C.-F., Wong, E. S., Perkins, M., Maciejewski, M. L., Yano, E. M., Au, D. H., Piette, J. D., & Bryson, C. L. (2012). Does the presence of a pharmacist in primary care clinics improve diabetes medication adherence? *BMC health services research*, *12*, 391.

[101] O'Neill, J. L., Cunningham, T. L., Wiitala, W. L., & Bartley, E. P. (2014). Collaborative hypertension case management by registered nurses and clinical pharmacy specialists within the Patient Aligned Care Teams (PACT) model. *Journal of general internal medicine*, *29 Suppl 2*, S675-681.

[102] Romanelli, R. J., Leahy, A., Jukes, T., & Ishisaka, D. Y. (2015). Pharmacist-led medication management program within a patient-centered medical home. *American journal of health-system pharmacy : AJHP : official journal of the American Society of Health-System Pharmacists*, *72*(6), 453-459.

[103] Brunisholz, K. D., Olson, J., Anderson, J. W., Hays, E., Tilbury, P. M., Winter, B., Rickard, J., Hamilton, S., & Parkin, G. (2018). "Pharming out" support: a promising approach to integrating clinical pharmacists into established primary care medical home practices. *The Journal of international medical research*, *46*(1), 234-248.

[104] Peterson, J., Hinds, A., Garza, A., Barner, J., Hill, L., Nguyen, M., Lai, P., & Gums, T. (2020). Impact of Physician-Pharmacists Covisits at a Primary Care Clinic in Patients With Uncontrolled Diabetes. *Journal of pharmacy practice*, *33*(3), 321-325.

their physician visit and commenced any intervention such as education or medication management. This was in contrast to a model where the patient is seen first by the physician and then referred for a subsequent visit to the pharmacist. Under this model there was a significant improvement in HbA1c levels, but no increase in patients receiving recommended vaccinations or cardiovascular risk reduction medications.

Edwards et al.[105] also studied patients with diabetes, with an intervention involving a pharmacist visit one week before a scheduled physician visit. The focus of the pharmacy appointment was a diabetes assessment service where the pharmacist completed tests recommended by the American Diabetes Association standards of care, resulting in significantly more patients in the intervention group achieving a higher proportion of the standards than those in the comparison group.

Min et al.[106] in a direct comparison of a nurse-led and pharmacist-led diabetes patient self-management programs, found both were equally effective in improving lipid control and blood pressure, with the pharmacist-led group associated with a decrease in primary care visits.

Hawes et al.[107] in a retrospective cohort study of pharmacy consultations as part of a multidisciplinary primary care post-discharge visit program in which the pharmacist conducted medication reconciliation, patient education as well as identifying and acting on medication related problems found that the pharmacists found 375 such problems among 86 patients. The problems included non-adherence, sub-optimal dosing, duration, frequency, administration and sub-optimal drugs. The authors also report non-significant improvements in rates of re-admission and emergency department attendances for the intervention group compared with the comparison group.

Overall, the literature reviewed shows evidence for improved patient outcomes of pharmacist involvement in PCMH care delivery, in terms of blood pressure control and control of HbA1c levels, and possibly for cholesterol levels. Literature on the involvement of pharmacists in team care indicate there are potential benefits for a broad range of chronic conditions. The mechanisms by which these results are achieved are less clear, with some evidence for medication intensification as a result of pharmacist involvement, but more equivocal results for medication adherence.

---

[105] Edwards, H. D., Webb, R. D., Scheid, D. C., Britton, M. L., & Armor, B. L. (2012). A Pharmacist Visit Improves Diabetes Standards in a Patient-Centered Medical Home (PCMH) [Article]. *American Journal of Medical Quality*, *27*(6), 529-534.

[106] Min, L., Cigolle, C. T., Bernstein, S. J., Ward, K., Moore, T. L., Jinkyung, H., & Blaum, C. S. (2017). Diabetes Care Improvement in Pharmacist-Versus Nurse-Supported Patient-Centered Medical Homes. *American Journal of Managed Care*, *23*(11), e374-e381.

[107] Hawes, E. M., Pinelli, N. R., Sanders, K. A., Lipshutz, A. M., Tong, G., Sievers, L. S., Chao, S., & Gwynne, M. (2018). Post-Hospital Discharge Care: A Retrospective Cohort Study Exploring the Value of Pharmacist-Enhanced Care and Describing Medication-Related Problems. *North Carolina medical journal*, *79*(1), 4-13.

23

Community Pharmacy in HCH Trial – engagement between HCH practices and community pharmacies

Box 31: Chapter summary

Pharmacies that had long-standing, strong relationships with HCHs, they tended to have a higher number of referrals. This was particularly the case where the pharmacy was within the same building or next door to a practice. However, there were instances where practices referred to a pharmacy that they didn't have a previous relationship with, and this was made possible by pharmacists proactively contacting practices in their area to let them know about their services and the benefits for patients.

Practices reported barriers with referring patients to community pharmacies. This included investment of time to educate and engage community pharmacies, problems with shared care planning software, needing to be convinced about the benefits of what pharmacists had to offer their patients, limited patient understanding of the model and the small number of HCH patients in their practice. Also, some practices already had access to a pharmacist through other arrangements or had arrangements with community pharmacists pre-dating of the trial.

Other reasons that practices didn't refer patients was that they were unaware of the community pharmacy trial, they were concerned about community pharmacists working outside of their scope or providing unnecessary services to patients or perceived the level of remuneration for pharmacies to be too high for trial services.

Almost one third of GPs responding to the practice staff survey reported that they referred no or very few (less than 20%) of their patients to a community pharmacist as part of the trial. They gave a range of reasons for this, including pharmacy intervention was not required, lack of pharmacists available or not participating in HCH, and limited patient interest.

Pharmacies mainly communicated with practices via the shared care planning software. In a few instances pharmacists reported that the trial enhanced their communications with the practice. Others struggled with communicating with GPs and sharing care. They felt that there wasn't enough trust established through the process to effectively collaborate with GPs.

GPs reported that they most frequently interacted with a community pharmacist 3–4 times a month. More than half of the GPs that responded to this question in the survey did not think that their communications with pharmacists had changed throughout the trial.

Where pharmacies had strong relationships with HCH practices, they reported receiving acknowledgment from the GP/practice about their medication recommendations for a patient. Otherwise, they received no feedback and didn't know whether their recommendations had even

been read.

In the final staff survey for the evaluation, one-quarter of the GPs that responded to the question said that they had acted on less than 20% of community pharmacists' recommendations. Close to two thirds said that the reason for this was they did not agree with the recommendation.

While some practices felt that pharmacists had a vital role in patient care and chronic disease management and saw value in the community pharmacy trial, many were unaware of the trial. GPs identified "patient education" as the top benefit provided by community pharmacists to patients. "Education and support" were also identified by GPs as the top ways in which community pharmacists' expertise could be better used towards improving the care provided for HCH patients and other patients with chronic illnesses.

Patient referrals

In interviews with pharmacies, those that had long-standing, strong relationships with HCHs reported a higher number of referrals. This was particularly the case where the pharmacy was within the same building or next door to a practice.

In interviews with practices, in some instances practices reported referring to community pharmacies where they had a newly established relationship, initiated by a proactive pharmacist in the area:

> *"Yes. We've had one pharmacist actually … So he came and spoke to us and said, you know, what's the deal here, what do you want me to do? How are we going to sort out referrals and do that? And that was good. And then we had another couple of pharmacies contact us and start doing the reviews through the Health Care Homes model … Yes, we're making referrals, absolutely."* [GP, Practice 10, R4]

Practices also identified barriers with referring patients to community pharmacies. These included time to educate and engage community pharmacies, problems with shared care planning software, needing to be convinced about the benefits of what pharmacists had to offer their patients, limited patient understanding of the model and the small number of HCH patients in their practice:

> *"I think if they brought the program out more widespread, and more pharmacies were involved, they'd have actually solved some of that program. But for a lot of the pharmacies, they just didn't have enough patients who were under Health Care Homes for them to bother…what's that magic threshold, that magic number of patients that makes it viable for you to be able to do special things for Health Care Homes patients as opposed to what you're doing day to day. So it does make that whole role a bit more difficult. And I'd actually say that 20 patients was probably the maximum that any of the pharmacies got. Because of the fact that the guys are really housed in such a broad geographical area, they use so many different pharmacies."* [GP, Practice 10, R5]

> *"The first reason [we have not referred patients to community pharmacies] is that the electronic shared care plan stuff that was part of the deal isn't implemented to anything like an acceptable level or a useful level to actually engage with them.*

The second is that with a cohort of 39 patients … I've probably got people that live between one and 30 kilometres from the practice. So, the number of individual Health Care Home patients that would go to any one particular pharmacy would be probably at maximum two. So, the pharmacies would then have an even greater problem than we do with 39 out of our 6000. Trying to get them to actually run a process for two people out of all the work that do, I just think that's insane. So, I certainly haven't tried to engage with them." [GP, Practice 12, R4]

"It is fairly new with our practice. We're all still trying to work out how this is supposed to work and to actually see it working in a novel way or to extra benefit than what currently exists … There's been a few [referrals] …" [GP, Practice 9, R4]

As mentioned earlier, some practices chose not to refer patients because they already had access to a pharmacist through other arrangements. Also, some had arrangements with community pharmacists that pre-dated the trial:

"No, I didn't, because I tended to use our local pharmacies, because we have such a good… Once again, being a country town, two pharmacies in the town, good relationship with both of the pharmacists, and the patients know the pharmacists, that's what we've tended to do." [GP, Practice 4, R5]

"We looked at whether we would be eligible to have community pharmacy locally and that wasn't an option. And we haven't been contacted by anybody to say that I'm providing a service … we currently have somebody who lives in the community who does our home medication and residential medication reviews for us, and we asked [PHN] whether they would consider that person would be appropriate to run community pharmacy locally, and they said no. And so that's as far as we got with it." [GP, Practice 2, R4]

Some practices didn't refer patients as they were concerned about community pharmacists working outside of their scope or providing unnecessary services:

"… I have got serious concerns about the pharmacy … And they're immunising children now. And the one across the road has got a resuscitation box outside … But we've got oxygen, we've got adrenalin. They can't even give adrenalin. It scares me." [Business Owner, Practice 6, R4]

"There has been a bit of a push by … some pharmacies will send requests to do home medication reviews particularly on patients in aged care facilities. And you'll get the request to do a home medication review … for a patient who's on two medications. And the doctor will say, no, that's not necessary because that's ridiculous, they're on two medications, they want them on those two medications, I don't need a medication review by a pharmacist. So, that, a big push on that and I think that actually makes us all a bit suspicious, the medications reviews. That they're just a money-making exercise rather than something that's really going to benefit the patient." [Practice Manager/Nurse, Practice 18, R4]

Pharmacists also reported issues with practice staff awareness of or engagement with the trial. This was sometimes exacerbated by turnover of practice staff. Since pharmacists needed HCH practices to refer patients to their pharmacy, practice staffs' awareness of the initiative and engagement with them was crucial:

> "*Well, we had a really good experience, but it got cut short because our doctor left the surgery, and then … They basically ended our trial … So, we were in full swing in about May and June. And then, at the end of June, all of a sudden, the doctor actually left. So, it was sort of cut short.*" [CP, Pharmacy 9, R4]

> "*We've trained our staff. We've set up the pharmacy in a workflow … And then, it's gone quiet, which is really disappointing. But of those 112 active patients, and these are active patients, and many of them … high-risk patients, we have only seen 11 of those 112. And we've been working really closely with the medical centre to encourage the practising nurse to really get her team care plans in place. We've been going and educating the doctors, and it's not happening. I feel it's a very confusing process for them … It's an extra platform they need to be working on, to then refer to the pharmacy, and they just can't be bothered. How do I see it? I think they're busy, and they can't be bothered doing it.*" [CP, Pharmacy 3, R4]

> "*The other clinic was doing quite a lot of people, but they've just moved locations, and at this stage they're not progressing with it. I don't know whether they'll go ahead and start doing them again once they've settled, but at the moment they're not sending any … They've verbally told me they're not doing it for a while … none of the other local doctors' clinics have sent anybody to us. So, I don't even know if they're sending them to anyone.*" [CP, Pharmacy 10, R4]

> "*… I have made contact with other surgeries in the area that are participating in the Health Care Home trial and offered to go and visit them and detail the pharmacy services that are available to their clients. And that hasn't really met with much uptake, or any uptake. Even the PHN has offered to attend those meetings as well because I think some of the surgeries that side aren't doing as much with the pharmacy side of Health Care Homes. But they haven't really pursued that, so without the face-to-face or without the close proximity I don't think the electronic shared healthcare planning would have worked as well.*" [CP, Pharmacy 4, R4]

One interviewee felt that it was not viable to participate in the initiative and devote time to implementation if a participating practice referred only one or two HCH patients:

> "*So, particularly from a pharmacy point of view. You'd have to spend hours doing the online training, and potentially purchasing the software … And then you'd have to allow hours of time for the pharmacist to provide the service. And if you only got one client out of that it would be a massive loser … there is definitely a threshold that you need to meet in order to make it worthwhile participating in the service … it's great, if all the stars align and the doctor's surgery next door to you participates and refers, and … the clients are typically interested, I think once*

the doctor's able to refer to you … But if you were reliant on doctors that weren't interested then, hard work. Hard work." [CP, Pharmacy 4, R4]

One pharmacist and several PHNs commented that a cause of frustration for general practices was that although paid on a per-session basis, and follow-up sessions were only scheduled where they deemed to be of benefit to the patient, GPs perceived that the overall amount for four sessions was almost as high as the bundled payment for practices but involved much less work. They felt that these issues may have contributed to a lack of practice engagement with the trial:

"*… from a GP's perspective … he was a little bit peeved at the fact that his perception of the amount of work that the doctors needed to do to do a referral to a pharmacist for a patient to join the Health Care Homes Program. The remuneration they got was miniscule compared with the potential that the pharmacy could earn if they delivered this right through the whole program. That's just a comment.*" [CP, Pharmacy 1, R4]

"*…GPs were jumping up and down when they saw how much a pharmacist was getting, over the two years, as opposed to the year. There was a lot of confusion around payment to pharmacies, especially from a general practice point of view. What are they giving and they're getting paid more.*" [PHN 2, Interview, R5]

"*The issue though, and we heard quite loudly from the GP sector, was the funding, the funding models. They are not too happy about the fact the pharmacists were getting the same if not more funding than they were to do medications review or something like that. That was a big barrier to Health Care Homes general practices and engaging with the community pharmacy and engaging with that trial.*" [PHN 8, Interview, R5]

In a written submission for the evaluation, the Guild commented that some of practices' hesitancy to refer patients may have been due to the lack of understanding of the community pharmacy trial, particularly understanding the difference between the trial services and Home Medicines Reviews, which practices regularly refer patients to receive. To overcome this, the Guild prepared a document for PHNs explaining the differences (also comparing the MedsCheck service with the other two).[108] The Guild observed that in PHNs where it had a relationship with PHN practice facilitators, referrals were higher, presumably because the facilitators could explain to their practices the differences and benefits of the community pharmacy trial compared with other programs/services.

The other issue that the Guild raised influencing referrals was that referral for a Home Medicines Review comes with a financial incentive for practices, whereas referral to community pharmacy as part of HCH did not.

---

[108] The Pharmacy Guild of Australia. (2020a). *Brief for HCH PHN Facilitators: Overview of medicine review services.*

In the final staff survey for the evaluation, GPs were asked approximately how many of the HCH patients that they were responsible for in the practice they had referred to a community pharmacist as part of the HCH trial. Table 75 shows this. Almost one third who answered the question referred no or very few (less than 20% of their patients).

Table 75: HCH patients referred to a community pharmacist as part of the HCH trial

Response	n (%)
All/majority of HCH patients (80–100%)	6 (17%)
Most HCH patients (50–79%)	4 (11%)
Some HCH patients (20–49%)	14 (39%)
No/very few HCH patients (less than 20%)	12 (33%)
Don't know/ no response	0

Source: Staff survey R5 Mar–May 2021, question 16A.

The GPs who had responded "No/very few HCH patients (less than 20%)" were asked for the reasons for this. Table 76 shows the range of responses.

Table 76: Key reasons GPs have not referred more HCH patients to a community pharmacy

Response	n (%)
Pharmacy intervention was not required	5 (50%)
Lack of pharmacists available or not participating in HCH	3 (30%)
Limited patient interest	2 (20%)
Patients dispersed geographically	1 (10%)
Small scale of HCH patients	1 (10%)
Don't know/ no response	2

Source: Staff survey R5 Mar–May 2021, question 16B.

Communications between pharmacies and general practices

Pharmacies mainly communicated with practices via the shared care planning software:

> *"… the main interaction is via the platform, you know [shared care planning software] platform. So, every now and then when I log onto the [shared care] program, there will be a thing on there, for example, to say medication review requested for this patient … There'll be a message on there … So, I think that's how we communicate. So, each time I do interviews, I'll obviously upload their medication management plan into the platform. So, I think most communication is via the platform, for the [shared care] platform. And then but if there's anything urgent, I guess, I normally just ring up the doctor."* [CP, Pharmacy 7, R4]

In some instances, they said HCH enhanced their communication with the practice:

> *"It feels like we do have more of an involvement and more communication, so, since I've been here with that program."* [CP, Pharmacy 5, R4]

> *"The frequency of contact definitely increased, because, for example, I've done a review with a patient and then the patient expressed a few concerns and then*

that triggers us to recommend some changes to the medication and then we liaise with the doctor more frequently because of that." [CP, Pharmacy 7, R5]

Others struggled with communicating with GPs and sharing care. A few pharmacists felt that trust was not sufficiently established through the process to facilitate collaboration with GPs:

> "*This is the problem we feel about the Health Care Homes … The management of the patients … The reason for that is we find it difficult to get doctors to share those patients … They seem to keep everything … Not, I think, intentionally they want to exclude the process, even though we feel this way. But everything [is] done within the clinic, kept in the clinic, and you have to go and ask for it. And after a couple of times, you just give up, because you feel there's no encouragement there … they're busy, they've got a lot going on, and the last thing they want on their table is a pharmacist coming and asking about what's your number for this patient, can we do this for this patient. The communication there we felt is just not as we hoped it to be.*" [CP, Pharmacy 8, R4]

> "*…we didn't have enough trust to be able to put a message through to the doctor on the program to say, this has now changed. we've witnessed this, we've seen this. Could you please review the medication? … I don't think that was as flexible or as buoyant as we would probably like it.*" [CP, Pharmacist 11, R5]

Sometimes pharmacists reported that they predominantly communicated with the practice nurses:

> "*I had a little bit more interaction with the nurses to be honest. But that was more about if she was having problems writing up the care plans and stuff, the medication management plans. So, yes, I didn't really get a lot of interaction between the doctors.*" [CP, Pharmacy 6, R4]

> "*Also the registered nurse next door at the medical centre, she came after I was no longer managing it, she was recruited, and she's done a very good job of staying in touch with me and letting me know if referrals are coming through.*" [CP, Pharmacy 4, R4]

Pharmacists felt there was room for increased collaboration and communication with GPs and general practice staff:

> "*I guess one thing that would be positive from a team care arrangement would be that mostly the direction of communication is from us to the doctor. It's usually in that direction. It would be good to get some feedback occasionally…it would be nice for the doctors to be communicating things a little more than they currently are…*" [CP, Pharmacy 1, R5]

In the final staff survey for the evaluation, GPs were asked, in the last month, how often they interacted with the community pharmacist that they had most interactions with. Table 77 shows these responses. GPs reported most frequently interacting 3–4 times in the month.

Table 77: Frequency of GP interaction with community pharmacist

No. of interactions (telephone, face-to-face, email) over the last month with the community pharmacist the GP has had the most interactions with	n (%)
5–6 times	5 (21%)
3–4 times	8 (33%)
1–2 times	5 (21%)
Nil	6 (25%)
Don't know/ no response	0

Source: Staff survey R5 Mar–May 2021, question 16A.

GPs were also asked, since the start of the community pharmacy component of the HCH trial, whether communications between them and community pharmacists in their local area improved. Slightly more GPs said that they didn't than did (Table 78).

Table 78: Did communications between GP and community pharmacists in your local area improve?

Response	n (%)
Yes	8 (44%
No	10 (56%)
Don't know/ no response	0

Source: Staff survey R5 Mar–May 2021, question 16I.

Pharmacist medication recommendations to GPs

Some pharmacists had strong working relationships with GPs and HCH practices and actively received feedback or acknowledgment that GPs and practice staff took their recommendations into account:

> *"Yes, certainly, [GPs] would always act on them if you send them a fax or you ring them. As far as what we put out there in the medication management plan that we upload, it's hard to assess whether they're reading those and taking all that onboard. But I think generally, yes, would be my gut feeling."* [CP, Pharmacy 1, R4]

> *"Yes, I think the doctors are pretty open to accept recommendations. I mean, not just complex matters, but sometimes there's simple matters as well, for example there's been a lot of medications which are out of stock at the moment because of COVID and then rather than going without, we recommend the doctor prescribe something else, basically giving ideas to the doctor about what they can prescribe which is similar."* [CP, Pharmacy 7, R5]

Others stated that they have received limited to no engagement from GPs about their patient medication recommendations:

> *"… we put any [Home Medicines Reviews] that we've been completing, any medication profiles, any monitoring, blood sugar, blood pressure. Anything that we do for the patient is being communicated back through [shared care planning software]. But another part of that is that the GP then needs to review those, and the GPs aren't reviewing those. So, I think valuable work is being done from our*

end, and then there's no clinical application of the monitoring that we're actually doing from the pharmacy setting. So, that's a bit disappointing as well. It's just not a priority for them in their practice, I don't think, at the moment. That's probably where it's falling over." CP, Pharmacy 3, R4]

"…when it comes to medication summary there is room for comments to be put there from us, but I don't think they are most of the time acknowledged or took them into consideration. I've found in my experience at home medicine reviews, when a doctor instigates that as part of a team care arrangement or whatever they use for their Medicare billing, they tend to review those and take action on those more than what this program did." [CP, Pharmacy 11, R5]

"If it's just put in the notes, it's probably a 30% chance that they'll take up that recommendation… If it's urgent, then I'll have to call the doctor." [CP, Pharmacy 2, R5]

One pharmacist reported negative comments from a GP about their clinical recommendations:

"I had a couple of patients where I'd sent through recommendations … he had rung me up and had a fair long go at me for doing something he thought was outside my scope of practice … I think he's rung me twice, and one of them was really unpleasant. And I was just, hang on a minute. And at the end of it I thought, I haven't done anything that was overstepping the lines, clinically, at all … It's just that he feels that absolutely everything a pharmacist does is trying to tread on the toes of the GP." [CP, Pharmacy 10, R4]

In the final staff survey for the evaluation, GPs were asked what proportion of community pharmacists' recommendations that they received for their patients they GP acted on. The responses were spread, but one-quarter said less than 20% (Table 79). Table 80 shows the reasons that GPs gave for not responding to community pharmacists' recommendations most of the time. Close to two thirds said that they did not agree with the recommendation or judged that it wasn't valuable.

Table 79: Proportion of the community pharmacists' recommendations that GPs acted on

Response	n (%)
0–20%	6 (26%)
21–40%	2 (9%)
41–60%	6 (26%)
61–80%	5 (22%)
81–100%	4 (17%)
Don't know/ no response	1

Source: Staff survey R5 Mar–May 2021, question 16F.

Table 80: Key reasons for GP not acting on the community pharmacist's recommendations most of the time

Response	n (%)
Did not agree with /or find pharmacist input valuable	8 (62%)
Do not receive any communication from pharmacists	2 (15%)
Service provided by GP	1 (8%)
No HCH pharmacists locally	1 (8%)
GP did not see the use	1 (8%)
Don't know/ no response	1

Source: Staff survey R5 Mar–May 2021, question 16G.

Practice perspectives on the community pharmacy trial

Also in the staff survey, GPs were asked what benefits they perceived of services provided by community pharmacists. The responses were varied (Table 81) but give an idea of the range of benefits identified by GPs.

Table 81: GPs' perceptions of benefits of services provided by community pharmacists

Response	n (%)
Patient education	3 (21%)
Aid medication compliance	2 (14%)
Reinforce GP decisions and/or provide medications suggestions and improvements	2 (14%)
Help identify errors or interactions through checks and medication reconciliation	2 (14%)
Promotes continuity and integration of care	2 (14%)
Minimal to no benefits	2 (14%)
Other	1 (7%)
Don't know/ no response	10

Source: Staff survey R5 Mar–May 2021, question 16H.

GPs were also asked to list the top three ways in which community pharmacists' expertise could be better used towards improving care for HCH patients and other patients with chronic illnesses. GPs' top response was "Provide more education and support" (Table 82).

Table 82: GP views on top three ways in which community pharmacists' expertise can be better for HCH patients and other patients with chronic illnesses

Response	n (%)
Provide more education and support	13 (76%)
Offer additional services (that is, delivery, e-scripts, home visits)	7 (41%)
Better communication and feedback	6 (35%)
More frequent medication reviews and patient follow up	6 (35%)
More regular reporting and documentation	6 (35%)
Additional involvement with general practice team-based care arrangements (i.e. visits to practice)	4 (24%)
Better use of and communication through shared care planning tools	3 (18%)
Reminders	1 (6%)
Don't know/ no response	7

Source: Staff survey R5 Mar–May 2021, question 16J.

In interviews, practices were asked to reflect on their involvement and/or experience with referring HCH patients to community pharmacies as part of the trial. Some practices felt that pharmacists had a vital role in patient care and chronic disease management. They saw value in the community pharmacy trial and elaborated on how pharmacy involvement benefitted their patients' care:

> "*Pharmacists are coming at things from a different angle, different knowledge … And there's always new information. But I don't think I've ever done one pharmacy review where I haven't [learned] something I didn't know.*" [GP, Practice 10, R4]

> "*This is a great scheme because half of the time, the patient comes and sees the doctors and nurse, they don't tell them what they take. Their extra supplement and things, some of them are dangerous, and some of them [are] taking the medicine, the time is wrong. Some of them, the two they have to take before food and they don't care. They don't pay attention to that, so this advice from [the pharmacist] is excellent. Very good. They help a lot, in my own experience.*" [GP, Practice 3, R5]

> "*Yes, I think [there is overlap between what the pharmacist and the GP does], in that we both have the same responsibility of looking for those errors and looking for medication problems and things like that. So yes, I guess it's both of our responsibilities…[which is] a positive thing. I guess it's like the swiss cheese there's two of us to make sure that those things don't happen.*" [GP2, Practice 24, R5]

However, many practices were unaware of the trial.

Box 32: Brief review of literature of factors affecting pharmacists' integration with PCMH practices

There is considerable variation in the literature in the scope of activities of pharmacists with patients of PCMHs. Activities range from those that are administrative and broadly educational, to clinical activities such as medication reviews, which may involve providing recommendations to prescribers, to more advanced clinical activities such as independent medication and disease management.

Trust in the pharmacist by other health professionals, particularly doctors, leads to greater acceptance of a broader role for pharmacists in primary care and a greater likelihood that their recommendations will be listened to and acted on. Levels of trust are in turn influenced by factors such as the doctor's and other staff's understanding of the pharmacist's role and competencies, the degree to which the pharmacist is integrated with the primary care team versus seen as an outsider, the degree to which the pharmacist is an active collaborator in team care, and the extent of face-to-face interaction between the pharmacist and other team members.

Stafford et al.[109] examined a collaboration between a community pharmacy and PCMH practices. They found that as the pharmacist spent longer with the primary care team and trust was

[109] Stafford, R. A., Garrett, L. N., Bates, K. A., Diemer, T. B., Thomas, J. L., Smith, M. G., Teeter, B. S., & Curran, G. M. (2020). Development and implementation of a collaboration between a patient-centered medical home and community pharmacy. *Journal of the American Pharmacists Association*, *60*(1), 122-129.

established, their activities changed from mainly logistics and education to therapy modification and initiation of recommendations. The authors noted the importance of rapport-building by the implementation team, which allotted significant face-to-face time between the pharmacist and physician.

Bergman et al.,[110] in a qualitative study examining the relationship between the pharmacist and primary care provider, identified three themes affecting this relationship. Firstly, the complexity of electronic communication and the potential for relationship breakdown due to electronic communication complexity or ambiguity. Secondly, difficulties in navigating new roles and traditional hierarchies where the primary care provider believes the pharmacist is questioning their judgement or going outside their traditional role. This can in turn lead to the pharmacist using softer, more indirect language in their recommendations, which are less likely to be acted on, or not making recommendations at all. Thirdly, there is a strong preference for on-site collaboration instead of virtual collaboration via electronic means.

Similarly, Albanese et al.[111] reported that doctors were more than twice as likely to see pharmacy services as valuable if they were delivered on-site rather than virtually. Arenz et al,[112] examining drug safety alerts, also found that doctors were more likely to accept recommendations where there is a direct working relationship, rather than a virtual one. The authors also identified patient lack of understanding of the pharmacist role as an important barrier to successful integration.

Farrell et al.[113] found that pharmacist characteristics also play a part in developing trust between the doctor and pharmacist. They identified two types of pharmacist roles: a physician responsive role where the pharmacist saw themselves as a direct support to the doctor; and a patient-centred medication management role, where the relationship was a collaborative one with the whole primary care team. These roles partly represent personal preferences by pharmacists, driven by factors such as their ideological stance regarding the role of pharmacy, their age and educational background. The authors also identified the need to more clearly define and agree the pharmacist's role in the primary care team, the allocation of significant time to develop relationships and administrative systems that promote cooperative practice.

Overall, the literature points to the important of trust between GPs/practices and pharmacists, which mostly arises from models in which the pharmacist is embedded in the practice and practice staff have an opportunity to build a relationship and observe the type of input that the pharmacist could have for patients.

---

[110] Bergman, A. A., Jaynes, H. A., Gonzalvo, J. D., Hudmon, K. S., Frankel, R. M., Kobylinski, A. L., & Zillich, A. J. (2016). Pharmaceutical Role Expansion and Developments in Pharmacist-Physician Communication. *Health communication*, *31*(2), 161-170.

[111] Albanese, N. P., Pignato, A. M., & Monte, S. V. (2017). Provider Perception of Pharmacy Services in the Patient-Centered Medical Home. *Journal of pharmacy practice*, *30*(6), 612-620.

[112] Arenz, B. J., Diez, H. L., Bostwick, J. R., Kales, H. C., Zivin, K., Dalack, G. W., Fluent, T. E., Standiford, C. J., Stano, C., & Mi Choe, H. (2016). Effectively implementing FDA medication alerts utilizing patient centered medical home clinical pharmacists. *Healthcare (Amsterdam, Netherlands)*, *4*(1), 69-73.

[113] Farrell, B., Ward, N., Dore, N., Russell, G., Geneau, R., & Evans, S. (2013). Working in interprofessional primary health care teams: What do pharmacists do? [Article]. *Research in Social & Administrative Pharmacy*, *9*(3), 288-301.

Evaluation conclusions

24

Analysis of implementation issues

Box 33: Chapter summary

More than half of the practices (53%) withdrew from the HCH trial. Also, about half of the GPs from each practice participated and close to half of the practices remaining in the trial until the end had less than 50 patients enrolled, limiting their ability to making any significant changes to practice. Therefore, the major issues for the trial were related to its implementation. Given this, a detailed analysis of implementation is warranted.

The *Consolidated framework for implementation research* (CFIR) incorporates the *diffusion of innovations theory* and offers a framework for analysing the factors that led to HCH not getting traction across and within practices. It also offers a framework for analysing factors that helped implementation, which are important to identify for future change initiatives in primary care. The CFIR has five domains: the characteristics of the intervention (the HCH concept), the outer setting, the inner setting, characteristics of individuals adopting the intervention and the process of implementation.

There were many attributes of *HCH as an intervention* that limited its initial uptake and sustainability. These included that the evidence for the PCMH, on which HCH was based, is nascent, that the relative advantage of the model for practices isn't clear, that it is an extremely complex intervention and not easily trialable, and that practices had reservations about the financial impact of the model both in terms of set up and ongoing income from the bundled payment compared with fee-for-service. If there is a desire in Australian primary care to grow medical homes, the evidence for the PCMH concept needs to be compiled and lessons specifically for the Australian context be drawn out and disseminated to primary care clinicians and practices through various channels. The evidence should also draw out the relative advantage of the model for practices and patients and clearly articulate the problems in primary care that the model can help to address, such as increasing rates of chronic disease amongst the Australian population.

Attributes of the *outer setting* had mixed effects for the uptake and sustainability of HCH. Patient needs and attributes were central to HCH. Where practices were tuned into patients' needs, they were successful in enrolling and keeping patients in the trial, including managing patients' expectations about being solely looked after by their GP versus a team-based approach. However, practices tended to select patients who were already motivated to manage their health and who they thought were activated or were willing to try new things. For any wider rollout of a similar initiative, more work is needed on strategies to engage patients who are less motivated. This can be helped by public awareness campaigns targeting people with chronic disease to convey information in different forms and boost messages conveyed by practices.

"*Cosmopolitanism*" or external networking worked negatively for practices in the HCH trial due to the dissenting views about HCH from medical professional organisations in particular. Negativity about the trial translated into practices withdrawing or only a fraction of GPs in a practice participating. GPs also commented that HCH lacked a "collegiate feel" compared with other

initiatives they had been involved in, and efforts to create this feel early in the trial would have been helpful.

Due to the low number of practices implementing PCMH-like models before the trial, peer pressure did not play a role in HCH uptake. Peer pressure is usually a motivator for the "late majority", that is, organisations implementing the initiative after the "tipping point", which is the critical point beyond which a significant and often unstoppable change takes place. HCH implementation did not reach a tipping point amongst Australian general practice.

The bundled payment as an external policy was both an incentive and a deterrent for practices. Finer-grained payment tiers may be helpful for future initiatives.

Structural characteristics are one dimension of practices' *inner setting*. Different sized practices faced different challenges. However, for practices of any size, barriers should be identified and addressed, and enablers leveraged to facilitate change. Solo GP practices within the trial tended to withdraw at a greater rate than other practice types. While solo GP practices face greater challenges in becoming a medical home, the literature shows that it is possible with appropriate supports.

The focus of the HCH initiative on teamwork was positive for implementation given the enhanced networking and communications when people work as a team. Staff turnover threatened teamwork in the HCH trial, and more effective mechanisms to make teams more resilient would be needed for similar large-scale initiatives.

For many practices in HCH, culture around patient-centred care was an enabler and one of the key motivations for practices to join the trial. However, more work was potentially needed on culture for practices to truly become patient centred.

In terms of implementation climate, for practices in the HCH trial, there was not an urgency to implement the initiative, as for most practices, it was not solving a problem but enhancing patient-centred care. Coupled with their busy workloads, this meant that it wasn't the highest priority for practices to implement. Other challenges in the implementation climate were the introduction of new workflows and systems, doctors' not willing to delegate responsibilities to other members of the team, high additional workload for some staff (particularly nurses), and lack of time to reflect and evaluate. Factors that helped implementation were more explicit rewards for additional workload, including non-financial rewards such as empowerment and increased stature and respect. In the practice survey staff reported that the most rewarding aspect of the model was working towards improved health outcomes for patients, along with the ability to build rapport and establish stronger relationships with patients.

The extent to which practices set goals and measured their progress on these was unclear, but many practices reported prioritising enhanced data collection and data quality since becoming a HCH. The benchmark reports provided to practices as part of the trial were helpful but could have been timelier, and creating opportunities for practice staff to have input to their content would have made them more useful. Also, different types of reports might be helpful at different stages of implementation.

Leadership is a key enabler for implementation and was present in most practices to introduce the initiative into the practice. However, leadership was unstable when it came from one or two people rather than a team, and practices may have benefitted from different types of leadership at different stages of implementation. Resourcing was an issue for practices generally, but they were particularly cautious about investing in the model due to uncertainty about its future in Australian general practice. Practices had access to information and knowledge about HCH through the online training modules and PHN practice facilitators. The training modules were not widely used, and future initiatives may consider enhancements such as shortening them and making them more practical, as

well as offering other modes of training.

Individuals within practices involved in the HCH implementation were GPs, nurses, other clinical staff, practice managers and administrative staff. GPs' attitudes towards the HCH concept, particularly the bundled payment, were a key implementation barrier. Addressing factors related to the intervention and reworking the bundled payment to reduce risks for general practices, are key to addressing GPs' attitudes. Training was identified as a means of increasing staff skills and confidence in new ways of working.

A longer lead time for practices to define and implement their model of care before enrolling patients would have helped the *process of implementation*.

External change agents were enablers for practices. They included external facilitation by the PHNs (which was generally well received by practices) and the network of clinical champions established by the Department of Health. Both would be important for future initiatives.

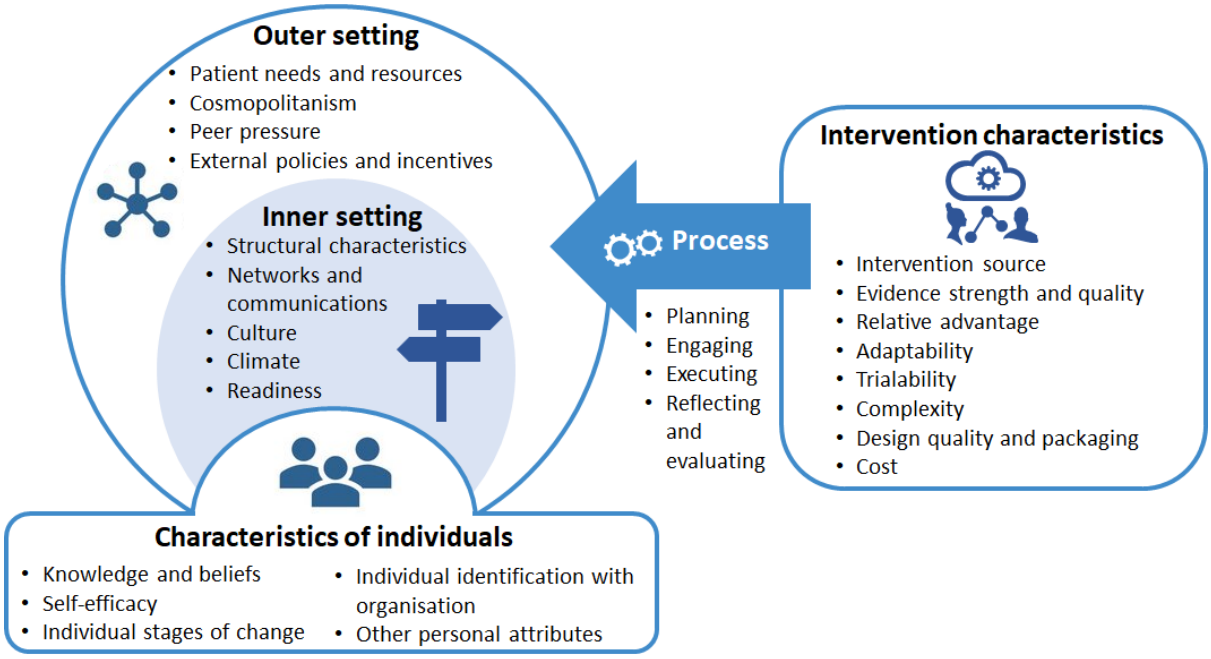
Lack of time limited practices' ability to reflect on and evaluate their implementation of HCH. Separating implementation of the model and enrolment of patients would have created more space for practices for evaluation and reflection.

Patchy implementation limited the success of the HCH program. That is, more than half of the practices (53%) withdrew from the trial. Also, about half of the GPs from each practice participated and close to half of the practices remaining in the trial until the end had less than 50 patients enrolled, limiting their ability to making any significant changes to practice. Given this, a detailed analysis of implementation is warranted.

The *Consolidated framework for implementation research* (CFIR)[114] (Figure 85) offers a framework for analysing factors that helped and hindered implementation. The CFIR has five domains: the characteristics of the intervention (the HCH concept), the outer setting, the inner setting, characteristics of individuals adopting the intervention and the process of implementation.

[114] Damschroder, L. J., Aron, D. C., Keith, R. E., Kirsh, S. R., Alexander, J. A., & Lowery, J. C. (2009). Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implementation Science*, *4*(1), 50.

Figure 85: Consolidated framework for implementation research (CFIR)[115]



Characteristics of the intervention

HCH was modelled on the PCMH, and included voluntary enrolment of patients with a GP, tools to identify and stratify patients at high risk of hospitalisation and a requirement to develop care plans for these patients and share them with patients' external care providers. Practices were expected to involve patients, families and their carers as partners in their care, provide enhanced access to care within hours, provide team-based care and deliver high-quality and safe care.

HCH was enabled by a bundled payment aligned with the risk tiers that patients were allocated to. Patients were categorised into one of three tiers based on their chronic conditions, service access profile, risk factors, complications, psycho-social issues and readiness to change.

The CFIR identifies seven attributes of an intervention that influence its implementation: the source of the intervention (internal or external), stakeholders' perceptions of the strength and quality of the evidence underlying the intervention, the perceived relative advantage of implementing the intervention, its adaptability, trialability, complexity and cost.

Except for a few practices already participating in PCMH readiness programs and some that had already adopted some of the components of the PCMH (such as team-based care), for many practices, the intervention entered the practice *externally*, through an invitation at the national level to apply to participate in the trial.

[115] Figure borrowed from Khan, S. (2021). Measuring context: balancing implementation research and practice. *Implementation in Action Bulletin*.

For practices where the idea had not grown within, practice owners, practice managers or the head office of corporately owned practices had submitted the application to participate in HCH without consulting with others in the practice:

> "*… when I went out to do a practice presentation on Health Care Homes, I realised, very quickly, that this is the first the doctors were hearing about it. Even though they'd signed a contract and received a $10,000 grant… I had no idea, when I went in, that that's what the situation was. I just assumed that they knew they were on the trial and they wanted more information*."
> [PHN 1, interview, R1]

Inadequate consultation resulted in some practices declining the offer to participate, and others who took up the offer to withdraw subsequently or take longer to start implementing due to needing to get buy-in from key people in the practice, particularly GPs. This is consistent with research that shows that lack of transparency in decision making to adopt an innovation is more likely to result in implementation failure:[116,117]

Although there is no agreed measure of *strength and quality of the evidence* for an intervention, nor is it sufficient for adoption,[118] there is a relationship between evidence strength and quality and implementation.[119] Trials testing the effectiveness of the PCMH, on which HCH was based, on key measures of interest (hospitalisation, emergency department attendances, staff burnout) have been fairly recent (less than a decade), and results are mixed.[120] Most evidence has been generated from studies based in the United States, with

---

[116] Kitson, A., Harvey, G., & McCormack, B. (1998). Enabling the implementation of evidence based practice: a conceptual framework. *Qual Health Care, 7*(3), 149-158.

[117] Rycroft-Malone, J., Kitson, A., Harvey, G., McCormack, B., Seers, K., Titchen, A., & Estabrooks, C. (2002). Ingredients for change: revisiting a conceptual framework. *Qual Saf Health Care, 11*(2), 174-180.

[118] Fitzgerald, L., & Dopson, S. (2006). Knowledge, credible evidence, and utilization. In S. Dopson & L. FitzGerald (Eds.), *Knowledge to action? Evidence-based health care in context*. Oxford University Press.

[119] Dopson, S., FitzGerald, L., Ferlie, E., Gabbay, J., & Locock, L. (2010). No magic targets! Changing clinical practice to become more evidence based. *Health Care Manage Rev, 35*(1), 2-12.

[120] Systematic reviews published at the time the HCH trial was designed provided mixed evidence around effect on outcomes of PCMH initiatives. These include:

- Jackson, G. L., Powers, B. J., Chatterjee, R., Bettger, J. P., Kemper, A. R., Hasselblad, V., Dolor, R. J., Julian Irvine, R., Heidenfelder, B. L., Kendrick, A. S., Gray, R., & Williams Jr, J. W. (2013). The patient-centered medical home: A systematic review. *Annals of internal medicine, 158*(3), 169-178.
- Peikes, D., Zutshi, A., Genevro, J. L., Parchman, M. L., & Meyers, D. S. (2012). Early evaluations of the medical home: building on a promising start. *The American journal of managed care, 18*(2), 105-116.
- Williams, J. W., Jackson, G. L., Powers, B. J., Chatterjee, R., Bettger, J. P., Kemper, A. R., Hasselblad, V., Dolor, R. J., Irvine, R. J., Heidenfelder, B. L., Kendrick, A. S., & Gray, R. (2012). Closing the quality gap: revisiting the state of the science (vol. 2: the patient-centered medical home). *Evid Rep Technol Assess (Full Rep)*(208.2), 1-210.

Subsequent reviews have generally been more positive but highlight that the quality of primary studies is relatively poor. Examples include:

- van den Berk-Clark, C., Doucette, E., Rottnek, F., Manard, W., Prada, M. A., Hughes, R., Lawrence, T., & Schneider, F. D. (2018). Do Patient-Centered Medical Homes Improve Health Behaviors, Outcomes, and Experiences of Low-Income Patients? A Systematic Review and Meta-Analysis. *Health Services Research, 53*(3), 1777-1798.

implementations across diverse institutional settings. With existing evidence not widely disseminated, ambiguous, or perceived as not relevant to Australia, HCH relied on GPs' own experiences of the concept in other systems and opinions of trusted peers. Some decided to build their own evidence by trialling the implementation with only a few patients in their practice:

> *"This…is why we choose 100. Because we want to try this out on all aspects from financial, from the doctor's happiness, patient's happiness. All these things we take into consideration. That's why we do not want to increase [the] number."* [GP, Practice 3, R4]

The lack of strong evidence for the concept and the lack of dissemination of existing evidence may have contributed to the concept not having widespread traction.

Relative advantage is also important to users; they will successfully take up an intervention if its benefits are clear and unambiguous.[121] The benefits of HCH were not immediately observable:

> *"There is no benefit to us as a practice, apart from making everyone feel good."* [GP, Practice 11, R5]

The HCH trial was an opportunity to both build evidence for HCH in Australia and to also show relative advantage for both patients and practice staff. However, it needed more time to achieve this.

Interventions that *can be adapted to meet local needs* are more likely to be implemented.[122,123] The Department of Health did not prescribe a HCH model, allowing practices flexibility to design their own model to meet local needs. One of the effects of this however was that many practices didn't know what to do:

> *"…it's very unclear about how we implement it. So, there's nothing wrong with the philosophy, but it's the execution."* [GP, Practice 12, interview, R2]

- Veet, C. A., Radomski, T. R., D'Avella, C., Hernandez, I., Wessel, C., Swart, E. C. S., Shrank, W. H., & Parekh, N. (2020). Impact of Healthcare Delivery System Type on Clinical, Utilization, and Cost Outcomes of Patient-Centered Medical Homes: a Systematic Review. *Journal of general internal medicine*, *35*(4), 1276-1284.
- John, J. R., Jani, H., Peters, K., Agho, K., & Tannous, W. K. (2020). The Effectiveness of Patient-Centred Medical Home-Based Models of Care versus Standard Primary Care in Chronic Disease Management: A Systematic Review and Meta-Analysis of Randomised and Non-Randomised Controlled Trials [Review]. *International journal of environmental research and public health*, *17*(18), 42, Article 6886.
- McManus, L. S., Dominguez-Cancino, K. A., Stanek, M. K., Leyva-Moral, J. M., Bravo-Tare, C. E., Rivera-Lozada, O., & Palmieri, P. A. (2021). The Patient-centered Medical Home as an Intervention Strategy for Diabetes Mellitus: A Systematic Review of the Literature. *Curr Diabetes Rev*, *17*(3), 317-331.

[121] Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank Q*, *82*(4), 581-629.
[122] Gustafson, D. H., Sainfort, F., Eichler, M., Adams, L., Bisognano, M., & Steudel, H. (2003). Developing and Testing a Model to Predict Outcomes of Organizational Change [https://doi.org/10.1111/1475-6773.00143]. *Health Services Research*, *38*(2), 751-776.
[123] Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank Q*, *82*(4), 581-629.

There is also a tension between adaptability and fidelity of an intervention. Although the flexibility offered in the HCH trial meant that potentially more practices participated, it also meant that practices focussed on different initiatives, making it difficult to identify the extent to which the model was implemented. Lack of consistency of implementation also means that where there are positive outcomes, it is difficult to attribute these to specific components of the model.

The degree to which an intervention can be *trialled* will impact its uptake;[124] users need to be able to stop the intervention if it's not working and reverse implementation. It is not easy to only take up certain components of complex interventions like HCH. The trial itself was meant to be an opportunity to pilot the concept. However, practices were concerned about whether they could "undo" the implementation:

> "*… the other reason why we didn't end up [enrolling] too many patients in the program was uncertainty about where the program would be after two years. So, it's difficult to get … a large cohort of patients used to it and then after two years say well, we're going to now can it and we'll have to do things differently.*" [GP, Practice 11, R4]

As mentioned earlier, to trial the concept, many practices only enrolled a few patients. However, this was counterproductive, as the small number of patients meant that the initiative was confined to a small part of their practice, and they didn't have the flexibility with the bundled payment to make any significant changes to their practice:

> "*… I just think those processes have all just been put into the wrong size, shape, and time …And the staff are brilliant as far as wanting to participate in this stuff. But it's 35 people out of those numbers I told you… it's a tiny, tiny piece of what we do.*" [GP, Practice 12, interview, R2]

The small number of patients enrolled by some practices impacted on those practices' successes with the model and on the outcomes of the overall trial.

The perceived *complexity* of an intervention also has a direct relationship to its implementation.[125] At the outset, PHN practice facilitators described the changes that practices had to undergo to adopt HCH as "a significant paradigm shift" [PHN 2, interview, R1], a "whole mindset change" [PHN 9, interview, R1], "cultural change at several levels" [PHN 1, interview, R1], an "eye opener" [PHN 2, interview, R1] and a "massive transformational change" [PHN 1, interview, R1]. Some practices failed to appreciate the complexity upfront and withdrew in the middle stages of the trial when they found that they hadn't yet enrolled any patients or only enrolled a few patients and hadn't progressed their HCH model. They withdrew as they perceived that the transformation that they would need to undergo would be too challenging.

---

[124] Ibid.

[125] Gustafson, D. H., Sainfort, F., Eichler, M., Adams, L., Bisognano, M., & Steudel, H. (2003). Developing and testing a model to predict outcomes of organizational change. *Health Serv Res, 38*(2), 751-776.

How the intervention is *packaged* and presented to stakeholders also has a bearing on its implementation.[126] Many of the details of the model were in the *Handbook for General Practices and Aboriginal Community Controlled Health Services*, but many practices who signed up to participate in the trial had not read the Handbook:

> "*...understanding what the practices already knew, was difficult for us. We knew that they'd signed the contract, we knew that they had volunteered to be involved. We didn't understand though... that the contract that they signed was a two-page document. ... It wasn't really involved, as far as the requirements of the program or what the best case scenario requirements of the program were. And it referenced... It only became clear later on that it did actually say there on a one-liner that they must adhere to the Health Care Homes Handbook. And then there's all of a sudden this 40-page document that none of them ever read.*" [PHN 3, interview, R1]

Other details were also in the online training modules, which were not widely used by practices, especially by GPs and nurses. Approximately 5% of the GPs and 9% of the nurses participating in the trial completed the foundational modules (1 to 5), and thus accessed details of how the model was intended to work. The implementation would have been helped by making available more streamlined information about the details of the model and its implementation and making this available in more accessible ways (for example, through peer-to-peer information exchange rather than through online training modules).

Lastly, participating practices described the high *cost* of setting up for HCH. Costs mainly related to IT set-up and loss of productivity associated with training and patient enrolment. Although the actual set-up costs were not quantified by the evaluation, several practices commented the $10,000 grant was insufficient to cover these costs and the amount of time it took to understand and implement the model. Another concern about cost was the adequacy of the bundled payment compared with fee-for-service. Many practices withdrew from the trial because they couldn't convince their GPs that they wouldn't be worse off under the bundled payment. Enrolling only a few patients also meant that some practices were worse off, because they didn't have the volumes to offset losses on any individual patients.

The outer setting

The outer setting includes the economic, political and social context in which organisations operate. In the case of HCH, the key outer elements included the characteristics of the populations that practices provide services to, national and local (PHN) policies and supports, and affiliations and peer networks of practices and individual staff within practices. The CFIR identifies four attributes of the outer setting that influence implementation: patient needs and resources, the degree of an organisation is externally networked ("cosmopolitanism"), peer pressure and external policies and incentives.

The HCH trial was designed for patients with chronic and complex conditions and focused on coordinated and comprehensive primary care for this group responsive to *patients' needs*

[126] Grol, R. P., Bosch, M. C., Hulscher, M. E., Eccles, M. P., & Wensing, M. (2007). Planning and studying improvement in patient care: the use of theoretical perspectives. *Milbank Q*, *85*(1), 93-138.

and preferences. However, although the target group was identified, patients were at different stages of readiness or receptiveness to participate in a trial of this nature, and the extent to which practices tuned into patients' needs influenced their success in enrolling and keeping patients in the trial.

Although practices used the RST to identify potentially eligible patients, they generally approached patients to enrol who were already motivated to manage their health and who they thought were activated or were willing to try new things. For any wider rollout of similar initiatives, more work would need to be done on strategies to engage patients who are less motivated, activated and/or willing to try new things. The selected enrolment meant that patients mostly stayed in the trial, and very few (7% of all enrolments) opted out due to personal choice.

Nevertheless, many patients interviewed were not aware of how HCH was different to usual care at their practice. Practices did not always have the time and sometimes the skills or knowledge to explain the model to patients. Patients, their families, carers and the broader community could benefit from receiving information about the program from different sources, and this would also help boost messages conveyed by practices:

> "*I did find it quite hard to get my head round I don't know quite why…I know I was given information to read afterwards…but a simple crib sheet or something just with the main points on would be… because it's quite wordy that document that comes out*." [Patient 2, Practice 5, interview, R2]

A second challenge was managing patients' expectations that they would see their GP each time they come to the practice. Practices reported that the very few patients who opted out of the program did so because of this expectation. Where practices overcame this resistance, it was through working on this with their patients. Sometimes PHNs helped as well. Once patients started to see team members other than their GP, they reported positive experiences about what that meant for them – greater access to care and time to discuss their health issues.

A higher degree of *external networking or "cosmopolitanism"* is linked with earlier adoption of new interventions.[127] External networking can come through individuals' professional affiliations/networks, training/skills development (especially opportunities for external training) and keeping up with professional literature and research findings. However, external networking can only help implementation if the advantages of the intervention are clear. In the absence of clear advantages of HCH (see "Characteristics of the intervention"), there was generally negative press and messages about the trial from medical professional organisations, which would have had a negative influence on some GPs. These negative influences translated in some practices withdrawing from the trial because they couldn't convince GPs within the practice about its benefits, but also created problems for practices that stayed in the trial, where some GPs participated and others didn't. Having only a fraction of a practices' GPs involved in HCH created a problem similar to having a relatively small number of patients enrolled. That is, the practice couldn't effectively implement team care,

[127] Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of innovations in service organizations: systematic review and recommendations. Ibid., *82*(4), 581-629.

and/or introduce different ways of working with patients. Practices talked about the majority of the practices' GPs being involved for a model such as HCH to work.

In the HCH trial, practices continually stressed the importance of learning from other practices and ongoing exchange of information and ideas. Some PHNs fostered this type of peer-to-peer engagement and learning by organising community of practice meetings and events. Practices found these vital for discussing issues they were experiencing with HCH, seeking feedback and advice, and sharing ideas. However, for many of the PHNs, these communities of practice weren't maintained. Reasons included staff turnover, practice withdrawals leaving a small number of practices within a region, and later COVID-19. Practices expressed that they would have liked more engagement with other practices both within their PHN and nationally.

Individual GPs also commented that HCH lacked a "collegiate feel" compared with other initiatives practices had been involved in previously. This potentially stifled motivation and hindered their ability to progress with the HCH model:

> "*So, back when [the Primary Care] Collaborative was run, there was a very strong division of general practice and there was a collegiate feel between the practices as it was. And then when the Collaboratives ran, there were half a dozen practices in this region … And so we would meet regularly through video conference, and then every now and then, we'd all end up at a conference together, whether that'd be in [State] or whatever, and there was a real collegiate feel. People knew who was in it and then there was also that competition that developed where you knew who you were being compared with within your block, in your region … But that collegiate feel's all been lost when the division went under and the Primary Health Network hasn't done that*." [GP, R4, Practice 2]

In November 2019, the Department of Health hosted a forum for practices participating in HCH and their PHNs. This was the first time that the HCH community was brought together. The practices interviewed after the event reported feeling more enthusiastic about HCH and its potential to transform care delivery within their practices. Both PHNs and practices also felt the forum should have been held earlier, at the start of the trial or at least while practices were still able to enrol patients:

> "*We did feel though and I've said this to [practice facilitator], and pretty much everyone that I talked to…if that forum would have happened six months prior to the cut-off date of admissions, you would have seen a lot more people being enrolled…we would have been armed with a lot more information to actually go back and go right, this is what we want to do. And these are the kinds of patients we want to target.*" [Practice Manager, Practice 15, R4]

> "*Our nurse and administrator went to [the forum] and were far more enthused, empowered [and] excited.*" [GP, Practice 7, R4]

Peer pressure usually contributes to uptake when key peer or competitor organisations have already implemented the intervention. This is not likely to have been a factor in practices' motivations to participate in the HCH trial given that very few practices in Australia were

participating in PCMH readiness programs preceding the trial. Peer pressure is usually a motivator for the "late majority",[128] that is, organisations implementing following the "tipping point", which is the critical point beyond which a significant and often unstoppable change takes place. HCH implementation did not reach a tipping point amongst Australian general practice.

Two key *external policy or incentives* offered as part of the trial were a one-off incentive grant ($10,000 GST exclusive) for be used for preparing for HCH, and the bundled payment. The bundled payment motivated some practices to participate but deterred others. While the evaluation didn't explore reasons practices didn't join the trial, one of the reasons that practices withdrew was that they perceived that the bundled payment was inadequate for the care required for patients with chronic illnesses. However, this view was often not universal within practices, and some persevered with the trial despite dissenting views within the practice:

> "*I think they should definitely embrace it because some model along this line, focusing on preventive health care and increasing patient autonomy, will have to be the way of the future. The fee-for-service model is not going to stay. It just can't.*" [GP, Practice 4, R5]

Nevertheless, one of the effects of this was that these practices ended up with a low volume of patients enrolled, leading to an inability to offset any losses with gains and lack of flexibility to use the funds to provide services to enable patients to better self-manage.

For practices that stayed in the trial, a key issue was very complex patients, for whom they thought that even the highest tier payment wasn't enough:

> "*… the next thought is that we've got some very complex patients at our tier 3 level. And there's no way that the process of payments as they're coming through in Health Care Home block funding model would match the Medicare money that we would earn from seeing those more complex patients on a fee-for-service basis.*" [GP, Practice 12, R4]

Several practices and PHNs suggested providing further incentives that focus on prevention and patient outcomes. These included engaging and incentivising other providers and stakeholders across the health system to work to achieve a common goal:

> "*…the government sees the big reward as they can keep people out of hospitals, then that's a lot cheaper for the government. But to really reflect that, it would be, for example, can clinics get paid more if their patients are hospitalised less compared to the expected rate? While in reality, yes, we get paid whether or not we see the patient, but it doesn't in itself incentivise better health outcomes…I think it's important to recognise that whether it's intended or not, however a system is set up will incentivise certain behaviours and not others. What's*

[128] Walston, S. L., Kimberly, J. R., & Burns, L. R. (2001). Institutional and economic influences on the adoption and extensiveness of managerial innovation in hospitals: The case of reengineering. *Med Care Res Rev*, *58*(2), 194-228; discussion 229-133.

happened with Medicare is Medicare incentivises face-to-face generally quicker consults, because it doesn't pay as well for longer, complex care. And Health Care Homes in theory could address that, but it does have those weaknesses in the current format." [GP, Practice 22, R5]

Benchmarking is an external incentive that can motivate organisations to implement and maintain an intervention. In the HCH trial, as a means of feeding back data received for the evaluation, the evaluators disseminated benchmark reports to practices and PHNs at six-monthly intervals. The reports were largely based on practice data extracts, with selected demographic and enrolment data from the HPOS extracts. One third of practices rated the reports as moderately useful. They commented qualitatively that they generally found the reports valuable, asking for them to be more frequent and automatically emailed to the practice for easier access (they were distributed to practices through the HCH evaluation online portal, which required a secure login for each practice). They expressed an interest in seeing more comparisons of patient outcomes, or proxies for patient outcomes like average HbA1c, and were also interested in seeing deeper comparisons with like practices through more detailed patient demographics:

"*...I think a key weakness of our system and I think it also relates to Health Care Home program is benchmarking...it's very difficult as the practice principal here to have much data about how do we compare to other practices with almost any metric, you might want to pick...if in theory being part of the Health Care Home program means that we're more proactive with helping people manage their chronic health issues and that maybe they end up with better targets for blood pressure or fewer relapses or whatever... And I think without that level of data tracking, it's hard for us to understand at an individual level, is this even beneficial in making a difference to anyone.*" [GP, Practice 22, R4]

The inner setting

The inner setting includes the structural, political and cultural features of organisations. The CFIR identifies five components of the inner setting: structural characteristics, networks and communications, culture, implementation climate and readiness for implementation. The boundary between the outer and inner settings isn't always clear, and the relationships between the two settings are dynamic. The breadth of the inner setting for any organisation will depend on how the implementation is approached. For example, for corporately-owned practices, depending on the extent to which the corporate head office is involved in the implementation, the inner setting may include implementation amongst multiple practices.

Structural characteristics include the social architecture, age, maturity and size of an organisation. Social architecture means how people are organised and differentiated within an organisation. It includes the number of units/departments and the number of occupational types. Implementation is more effective when there is a wide range of

occupational types (due to drawing on a wider knowledge base),[129] when more than one group participates in decision-making,[130] and when there is greater managerial/ administrative support.[131]

In the HCH trial, solo GP practices represented the smallest proportion of total practices participating at any time (12%). Sixty per cent withdrew over the course of the trial, the highest proportion amongst all other groups by size. While solo GP practices face greater challenges in becoming a medical home, the literature shows that it is possible with appropriate supports such as from nurses and medical practice assistance, and access to practice redesign expertise.[132]

As mentioned earlier, where the decision to join the trial was made by a corporate office or one or two people who hadn't consulted with others in the practice, practices withdrew.

Other structural characteristics for which data was available in the evaluation were size and ownership status.

While larger practices had more staff and infrastructure to implement the model, they also took more time for implementation due to the need to get a larger group of people engaged and a wider set of processes to change. Smaller practices had more flexibility to make and implement decisions, but they had less resources and were more greatly affected by turnover of key staff compared with larger practices. Regardless of practice size, PHNs and practices reinforced that strong leadership, staff buy-in and a larger scale of HCH patients were integral to program success:

> "*It's that critical mass to making a practice, it becomes their way of working rather than a model that's running on the side of the desk ultimately.*" [PHN 7, Interview, R5]

> "*Those practices that have bit piece number of patients, they can't change that model of care. They just don't have the volume to justify changing it…I knew, once you get to the tipping point, or mass of patients, you don't have to worry about the funding.*" [Practice Owner, Practice 9, R4]

Similar to practice size, there were advantages and disadvantages to operating HCH in corporate versus independently owned practices. In many instances corporate practices were also large practices and independently owned practices were usually medium-sized or small; therefore, there was some level of overlap when comparing practices' experiences based on practice size and ownership. Again, similar to practice size, barriers associated with

---

[129] Kimberly, J. R., & Evanisko, M. J. (1981). Organizational Innovation: The Influence of Individual, Organizational, and Contextual Factors on Hospital Adoption of Technological and Administrative Innovations. *The Academy of Management Journal, 24*(4), 689-713.
[130] Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank Q, 82*(4), 581-629.
[131] Damanpour, F. (1991). Organizational Innovation: A Meta-Analysis of Effects of Determinants and Moderators. *The Academy of Management Journal, 34*(3), 555-590.
[132] Fifield, J., Forrest, D. D., Martin-Peele, M., Burleson, J. A., Goyzueta, J., Fujimoto, M., & Gillespie, W. (2013). A randomized, controlled trial of implementing the patient-centered medical home model in solo and small practices. *J Gen Intern Med, 28*(6), 770-777.

ownership status should be identified and addressed, and enablers leveraged to facilitate change.

Teams enhance the *networks and communications* within an organisation and are an important ingredient for successfully implementing interventions. In the case of HCH, it was also one of the components of the intervention itself. Goldberg et al.,[133] in a study of primary care practice transformation, identified team-based care as the "most critical method used to successfully transform practices to provide patient-centred care." (p. 150)

In terms of a team-based approach to implementing the initiative within the practice, practices identified this themselves:

> "*You… have to have a group of people that want to make it happen. It's not a half-hearted exercise*." [*Practice* Manager, R4, Practice 4]

Having a team to drive change became more important as the trial progressed as progress stopped altogether in some practices when the person that left was the one key person driving the initiative.

In terms of teams to provide patient-centred care, practices identified barriers to developing teams and working as a team that included limited staff engagement in HCH within the practice, patients' expectations about seeing their GP instead of another member of the team, GPs' lack of willingness to delegate care responsibilities to other members of the team and time to meet regularly as a team. Effective leadership and behaviours that reinforce teams (such as regular meetings) have been suggested as ways to strengthen team members perceptions of their effectiveness of working as a team.[134]

Effective teams are cohesive, and one factor that threatens cohesion is staff turnover. The HCH trial suffered from staff turnover within practices. Staff turnover was a reason that some practices withdrew from the trial. Staff leaving also often delayed implementation, decreased motivation and enthusiasm for the initiative amongst other staff, and disrupted services for patients. While staff turnover was not necessarily a direct result of HCH implementation, recognition of the potential for job stress associated with change and opportunities to participate in decision making could be helpful in reducing staff turnover.[135]

---

[133] Goldberg, D. G., Beeson, T., Kuzel, A. J., Love, L. E., & Carver, M. C. (2013). Team-Based Care: A Critical Element of Primary Care Practice Transformation [Article]. *Population health management*, *16*(3), 150-156.

[134] Stout, S., Zallman, L., Arsenault, L., Sayah, A., & Hacker, K. (2017). Developing High-Functioning Teams: Factors Associated With Operating as a "Real Team" and Implications for Patient-Centered Medical Home Development. *Inquiry : a journal of medical care organization, provision and financing, 54*, 46958017707296.

[135] Meredith, L. S., Hackbarth, N. S., Darling, J., Rodriguez, H. P., Stockdale, S. E., Cordasco, K. M., Yano, E. M., & Rubenstein, L. V. (2015). Emotional Exhaustion in Primary Care During Early Implementation of the VA's Medical Home Transformation Patient-aligned Care Team (PACT) [Article]. *Medical care*, *53*(3), 253-260.

Future initiatives need to focus on making teams more resilient in the face of change, for example, through distributing leadership amongst the team and diversifying skills among team members, so others can take on aspects of a role if someone leaves.

Culture is both an input and an outcome to effective implementation of a change initiative. In the HCH trial, practices that joined were likely to have a culture of innovation. Indeed, many were involved in other quality improvement initiatives before and during the trial:

> "*We have been part of a journey towards developing patients in their medical home. Or achieving these attributes and principles for some time.* [The] *Health Care Home program just simply enabled us to do that. We have been preparing for a couple of years and been involved heavily with the Primary Health Network and on that journey. Health Care Home was simply something that we could pick up and run with.*" [GP, Practice 5, interview, R2]

Many practices were also motivated to join the trial because HCH aligned with their values of providing patient-centred care, and some claimed that they were already practising elements of the model, such as chronic disease management and team-based care. Nevertheless, for most practices, the PCMH requires an even further shift in culture. For example, Wagner et al.[136] identify four mental models of team-based care, ranging from "the doctor takes care of patients and hires some people to help him/her," to use of non-GP clinical staff in direct and circumscribed roles (for example, diabetes care nurses or registered dieticians), to teams delegating meaningful decision making to nurses and allied health in their areas of expertise ("the doctor takes care of patients but delegates significant work to team members"), to the fully team-based model ("*we* take care of patients").

In the HCH trial, very few practices' models could be described as fully team-based. Therefore, more work was needed for practices to become truly patient centred.

The *implementation climate* refers to how receptive an organisation is to change. Dimensions include the tension for change, compatibility of the intended change with existing workflows and systems and individuals' own norms, values, risks and needs, relative priority, organisational incentives and rewards, goals and feedback and a learning climate.

Tension for change can be perceived differently by different individuals within an organisation and is most effective when there is a perceived urgency for change.[137] For practices in the HCH trial, there was not an acute sense of needing to transform; the HCH initiative was seen as a means of enhancing patient-centred care rather than necessarily solving a problem.

In the HCH trial, while the concept of patient-centred care was compatible with individual staff's norms and values (as well as the mission of the practice), all practices had to

---

[136] Wagner, K. K., Austin, J., Toon, L., Barber, T., & Green, L. A. (2019). Differences in Team Mental Models Associated With Medical Home Transformation Success. *Annals of family medicine, 17*(Suppl 1), S50-S56.

[137] Lukas, C. V., Holmes, S. K., Cohen, A. B., Restuccia, J., Cramer, I. E., Shwartz, M., & Charns, M. P. (2007). Transformational change in health care systems: an organizational model. *Health Care Manage Rev, 32*(4), 309-320.

implement new systems and workflows. Administrative systems to enrol and register patients and receive the bundled payment, and the RST were new to all practices. In addition, some had to implement additional new systems and workflows, including those related to team care within the practice and shared care with external providers. As mentioned above, team care was incompatible with some GPs' norms and values:

> "*I guess many GPs particularly those … that have been around for a while struggled to delegate a little bit and feel that [they] have to be in control.*" [Nurse, R4, Practice 4]

The degree to which practices tackled this was the degree to which they were successful in implementing the model.

For many practices in the trial, HCH was perceived as additional work on top of their already busy workloads. They talked about fitting the implementation alongside their work rather than it taking centre priority:

> "*Probably being such a busy practice, trying to find the space to fit Health Care Homes, the learning, the implementation…*" [Practice manager, Practice 14, interview, R2]

Later in the trial it became an even lower priority alongside of managing the pandemic and due to the uncertainty about the trial's continuation.

Organisational incentives and rewards can enhance implementation.[138] In the HCH trial, practices generally didn't identify any explicit incentives or rewards within their practices in relation to HCH implementation. An often-quoted disincentive was the increased workload, particularly for nurses:

> "*I think it's been a challenge for our practice nurse because it's like a whole extra workload for her because she's not confident with the computer so everything takes longer than it would anyway and then she gets quite under pressure because the whole clinic is still running and she's expected to do these whole extra things. I think it's really impacted that role and it's impacted my role because I've had to teach and support and go down constantly…*" [Practice nurse, Practice 10, interview, R2]

In some instances the practice compensated for the work with additional pay:

> "*Well, I don't think [the nurse is] winning in terms of workload but she's aware of the aim and the benefit of the program and she's recognised, with the workload, we discussed with her, she agreed to take on the role. She's being financially reimbursed for her role as well.*" [Practice Manager, R4, Practice 3]

---

[138] Helfrich, C. D., Weiner, B. J., McKinney, M. M., & Minasian, L. (2007). Determinants of implementation effectiveness: adapting a framework for complex innovations. *Med Care Res Rev, 64*(3), 279-303.

Incentives and rewards need not be financial and can include empowerment, and increased stature and respect. This is likely to have been achieved in some practices with team-based care:

> "*My nursing staff love the autonomy and the extra responsibility, they absolutely thrive on it*." [GP, Practice 4, interview, R2]

> "*It's just fulfilling to be able to do things that we're so constrained from not being Health Care Homes nurses and we won't be able to do our things, but having a program that really empowered us, the nursing team.*" [Practice Manager, Practice 24, R5]

Also, in the practice survey staff reported that the most rewarding aspect of the model was working towards improved health outcomes for patients, along with the ability to build rapport and establish stronger relationships with patients.

Goal setting and providing feedback on progress are fundamental for effective implementation.[139] While the extent to which this occurred within individual practices was unclear, practices highlighted the importance and value of data in general practice, and many reported prioritising enhanced data collection and data quality since becoming a HCH. Some PHNs were working hard in this area and practices in their regions found this beneficial. Practices expressed the need for additional external emphasis and work on data quality and benchmarking for enhancing quality of care, establishing targets and more effectively measuring outcomes. The benchmark reports made available to practices as part of the trial included statistics on enrolments, patient characteristics and process measures (such as frequency of measurement of lipids). Reports of this nature can provide transparency and stimulate further motivation for improvement.[140] However, to be effective they need to be accurate, timely, agreed by team members and not overly burdensome to collect and compile. Also, different types of reports might be helpful at different stages of implementation. For example, in the short-term, reports of practices' progress on the various dimensions of the PCMH model and comparisons with other practices in the trial may be more useful.

The final dimension of the implementation climate is the learning climate. Climates conducive to successful implementation are ones where all members are involved, members feel safe to contribute, and members have time to reflect and evaluate.[141] Time was a general issue for the HCH practices, including for reflection and evaluation.

Practices in the HCH trial were at various stages of *readiness for implementation*. As mentioned earlier, a few practices had already participated in PCMH readiness programs

---

[139] Lukas, C. V., Holmes, S. K., Cohen, A. B., Restuccia, J., Cramer, I. E., Shwartz, M., & Charns, M. P. (2007). Transformational change in health care systems: an organizational model. *Health Care Manage Rev*, *32*(4), 309-320.

[140] Wagner, E. H., Gupta, R., & Coleman, K. (2014). Practice transformation in the safety net medical home initiative: A qualitative look. *Medical care*, *52*(Supplement 4), S18-S22.

[141] Klein, K. J., & Sorra, J. S. (1996). The Challenge of Innovation Implementation. *The Academy of Management Review*, *21*(4), 1055-1080.

before the HCH trial and were prepared for enrolling patients. However, most were not. Allowing time for practices to prepare for change before "going live" with an initiative would be helpful. This is especially important for general practices that usually have very little "absorptive capacity"[142] for innovation, mostly due to their small size.

PHNs usually had a good sense of a practice's readiness for implementation and advised the Department of Health about this in the second wave of recruiting practices for the trial. PHN practice facilitators also discussed providing different supports to practices for their implementation according to individual practice readiness and training needs:

> "*...Essentially we look at the practice's focus, we look at their current capacity and capability, we look at their workforce...So it's do they have the capacity and capability to take on the number of programs, initiatives we have, and then as they sort of move along that continuum, they then move into that real sort of business and clinical optimisation phase, and then we transition them through that business and clinical optimisation up to our transformational practices...*" [PHN 4, interview, R1]

For "transactional practices" they described providing training and setting up foundational processes such as billing, reminders, and recall, with "business optimisation" practices they described developing and working through quality improvement plans, and with "transformational" practices they described working on practice-wide initiatives with teams.

The CFIR identifies engaged leadership, having resources available and access to knowledge and information as markers of readiness for implementation.

Successful transformation to a PCMH requires engaged, visible leaders.[143] HCH practices and PHNs also identified leadership as a key enabler for transformation:

> "*...it's about leadership and distributing leadership within the practice. Now staff are more able to make decisions and get empowered to change something. It's not us changing something, it's them changing something.*" [GP, Practice 5, interview, R2]

Amongst the participating practices there were individuals who were strong believers in the model and drove change within their practice. They were often the individuals that applied for the practice to join the trial. Though some leaders were practice owners or senior GPs, practice managers and nurses often took on this role. HCH practices commented that it would have been helpful to have time before patient enrolment started to cultivate leadership within the practice, and PHNs commented that practices should have been assessed for engaged leadership before being accepted to join the trial.

---

[142] Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, *35*(1), 128-152.

[143] Wagner, E. H., Gupta, R., & Coleman, K. (2014). Practice transformation in the safety net medical home initiative: a qualitative look. *Medical care*, *52*(11 Suppl 4), S18-22.

The literature also discusses the need for different types of leadership at different stages of implementation. For example, McMullen et al.,[144] using ethnography to study leadership required for PCMH implementation, found that:

> "*Facilitative and modeling aspects of engaged leadership were most important for code signing a vision and plan for change. Adaptive leadership skills became more important during the implementation phase, when specific operational and management skills were needed to foster standardization and spread of the … initiative throughout participating clinics.*" (p. S34)

These different types of leadership were potentially needed in the HCH trial as despite initial enthusiasm, some practices withdrew when they couldn't get past operational hurdles.

Availability of resources is positively associated with successful implementation. For example, larger practices tend to be more successful at implementing complex interventions like HCH due to having additional resources.[145] However, small practices have used strategies such as resource sharing to overcome resourcing problems.[146]

In the HCH trial, practices were concerned about resources. They recognised that transformation would be resource intensive and were concerned about investing in it when they weren't certain that the model would continue beyond the trial:

> "*You'll get the cynic out of me, but generally, what happens in these situations is the program is started with fanfare and with plenty of funding and then once the hook is set and everybody is using it, it tends to get wound back… there'll be this expectation about what the care looks like in general practice and the funding will disappear for it.*" [GP, Practice 2, R4]

> "*And when you sit down and look at the amount of money that we were paid upfront, the $10,000 upfront, to be able to get the program running in the practice, we've spent that probably many times over. Each time we do a module… we were getting them done with two of our nurses that we were going to do the program with. There's $300 an hour in salaries…And they want us to do all the modules. The money just doesn't even pay for our staff time to be able to do the modules, let alone anything else we do within the practice.*" [GP, Practice 17, R2]

---

[144] McMullen, C. K., Schneider, J., Firemark, A., Davis, J., & Spofford, M. (2013). Cultivating engaged leadership through a learning collaborative: lessons from primary care renewal in Oregon safety net clinics. *Annals of family medicine, 11 Suppl 1*, S34-40.

[145] Kern, L. M., Edwards, A., & Kaushal, R. (2014). The Patient-Centered Medical Home, Electronic Health Records, and Quality of Care [Article]. *Annals of internal medicine, 160*(11), 741-+.

[146] Baxter, L., & Nash, D. B. (2013). Implementing the Patient-Centered Medical Home Model for Chronic Disease Care in Small Medical Practices: Practice Group Characteristics and Physician Understanding [Article]. *American Journal of Medical Quality, 28*(2), 113-119.

Access to information and knowledge is also associated with effective implementation.[147] For the HCH trial, the Department of Health commissioned modules for self-paced online training for practice staff. As mentioned earlier, the modules weren't widely accessed by practice staff. Key issues were that they weren't role-specific, they were too long and took too much time to complete, they were repetitive, not sufficiently practical, and pitched at "entry-level".

External facilitation can help with readiness. The Department of Health funded PHN practice facilitators to assist practices with their transformation. Practices were largely positive about the support they received from their PHN practice facilitators to implement HCH. Where they were critical, it was that they didn't get enough support, or they were frustrated with the turnover of practice facilitators. The high turnover in PHN practice facilitators suggests that more resilient approaches for delivering practice facilitation are needed. This could be achieved through facilitation provided to practices by a mix of staff within advanced facilitation skills – located in meso or national level organisations – and staff embedded within PHN-based teams responsible for supporting practices in quality improvement. This model would help integrate facilitation with PHN initiatives and continue to replenish skills among the local PHN workforce.

Characteristics of individuals

The knowledge and beliefs of individual staff members, their beliefs in their capabilities, the stages of change of individual staff members and individual identification with the organisation are all known to influence implementation.

In terms of knowledge and beliefs of individual staff members, GPs' attitudes towards the HCH concept, particularly the bundled payment, were discussed earlier. Broadly, there was negativity from many GPs, which resulted in practices withdrawing from the trial, involving only some GPs from the practice in the initiative and/or enrolling only a small number of patients. Addressing factors related to the intervention (the HCH concept) and reworking the bundled payment to reduce risks for general practices, are key to addressing GPs' attitudes.

In terms of staff members' beliefs about their capabilities (or self-efficacy), although there was a learning curve for some staff, they gained confidence as the trial progressed:

> "*I'm loving it. It's really good. I definitely feel more confident in it as well, since I've been doing it for longer. Because at the start, even myself, patients were hesitant seeing me, and I still was a bit worried about seeing them … So, I've changed. I think I'm more confident in it now, which is a great thing, and [the] patients can tell that I am as well.*" [MPA, R4, Practice 5]

Practices identified training as a key way to improve staff self-efficacy:

> "*… [the] reception staff have all undergone more training. They've all received helpful cheat sheets that will help them to manage the patients when they call, or when they come in.*" [Practice Manager, R4, Practice 14]

---

[147] Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank Q*, *82*(4), 581-629.

They suggested that training through other means than online would be useful:

> "*So for wave 2, I would say some sort of formal training program would be useful, which is what we didn't have.*" [GP, Practice 9, interview, R2]

Other characteristics of individuals that are important for implementation but not studied in the HCH trial are individual stages of change and individual identification within the organisation.

Process

The CFIR identifies four components of process that are important for implementation: planning, engaging, executing, and reflecting and evaluating. In the HCH trial, practices were encouraged to use the Plan-Do-Study-Act (PDSA) cycle for implementing their changes, which incorporates the CFIR components.

Practices often mentioned having one or two people in the practice who were the drivers of the change. These individuals often held dual roles of implementation leader and champion. However, as mentioned previously, having one or two people responsible for these aspects meant that the practice was vulnerable in sustaining the change if one or both of those individuals left the practice. Therefore, practices recognised that a team was more robust. Practice facilitators identified that those practices that stayed in the trial and were more successful with implementing change were ones where a team including a GP, a nurse and a practice manager, drove the implementation:

> "*You… have to have a group of people that want to make it happen. It's not a half-hearted exercise.*" [Practice Manager, R4, Practice 4]

Planning came out as a strong theme in the HCH trial. Specifically, practices and PHNs thought that practices should have had a longer lead time to plan and prepare for HCH before they enrolled patients. In the trial, patient enrolment started at the same time as the launch:

> "*…it's not a race, it is a marathon for us to start to realise true practice transformation…*" [PHN 4, Interview, R5]

In the HCH implementation, external change agents were provided in the form of practice facilitators from the PHNs supporting practices in their implementation, as described above. In addition, the Department of Health established a network of clinical champions in April 2018. Clinical champions came from various backgrounds, including GPs, nurses and practice managers. Their role was to keep practices in the trial, particularly those that were slow to make any changes and promote positive messaging about the model, including to patients. These roles often supported peer-to-peer learning mentioned earlier, particularly for GPs.

Practices mentioned lack of time for reflecting and evaluating. A preparatory period for practices to achieve transformation before enrolling patients would have helped with this.

25

Conclusion

The HCH trial achieved changes to chronic disease management within practices and improved access for enrolled patients. Improved chronic disease management resulted from improved care planning, which led to improved regularity of key chronic disease measures, including blood pressure, lipid tests, HbA1c and kidney function tests. Improved access was evidenced by increased encounters with practice GPs and nurses and with allied health outside of the practice following enrolment.

However, significant changes to patient activation were not detected, and compared with matched patients from other practices, there was no significant impact on other patient outcomes or the use of secondary or tertiary services.

The major issue for the HCH trial was in implementation, which was patchy, limited by scale, and not to the extent envisaged for the model. Implementation for practices was made more difficult by the lack of time for practices to set up as a HCH before enrolling patients, the inadequacy of some of the tools and resources available to them for operating the model, as well as negative sentiments towards the medical home concept and/or bundled payment that weren't adequately addressed before the start of the trial.

There are several methodological issues that may have impacted the capacity to detect changes in some of the outcomes expected from the HCH model. These include:

- Improvements in chronic disease management in a patient population such as the HCH cohort are expected to impact the course of chronic illnesses over the medium- to long-term. The follow-up periods for patients in the HCH trial were a mean of 20 months for hospitalisation outcomes and 32 months for other outcomes. It is likely that these follow-up periods were too short to realistically detect changes in the trajectories of chronic illness and their consequences.

- The comparative analysis was based on observational data, and selection biases may be present, both in the selection of practices to participate in the trial and in practices' selection of patients to enrol in the trial. The comparative analysis undertaken for the evaluation used methods (matching HCH patients with comparator patients based on a propensity score) to address observed factors that may bias the estimate of effects. However, there may be unobserved factors at play. For example, as suggested by qualitative data and as shown by the baseline patient activation measure (PAM) scores from the patient survey, GPs and practices may have selected patients who were more activated. This means that the opportunity for improvements in outcome measures were more constrained for the HCH participants, who may have already been receiving and participating in chronic disease management that was closer to "best practice". Additionally, HCH patients were generally patients who had a long association with their GP and practice, suggesting

that continuity of primary care for these patients was already higher than other patients. Therefore, HCH patients may have already been benefiting from the superior outcomes that result from continuity.[148,149]

- The comparator patients were selected to be as similar as possible to the HCH patients. The estimates of effects therefore do not necessarily reflect the potential for change in chronic disease management and outcomes in the broader primary care populations, which – compared with patients in the trial - include patients with more complex conditions and patients with less complex conditions.

- Achieving changes in some of the outcomes intended for the model requires the involvement of the broader healthcare neighbourhood, that is, health care providers external to the practice. Outcomes such as reduced emergency department attendances and hospital admissions may have needed engagement and incentives for other providers and stakeholders across the health system to work with general practice to achieve the desired changes. The trial included a bundled payment, which was essentially intended to stimulate changes to chronic disease management within practices, and a community pharmacy component, which was focussed on achieving engagement between practices and community pharmacies, but broader engagement of the health neighbourhood may be required.

Overall, the evaluation was not able to reach a conclusion about the value-for-money of the program. Nevertheless, the trial yielded important lessons about voluntary enrolment, risk stratification, bundled payment, processes to support practice transformation, shared care planning, integrating community pharmacists amongst general practice care teams and evaluation, which should be considered for future reform of primary care. These lessons are outlined in the next chapter.

---

[148] Pereira Gray, D. J., Sidaway-Lee, K., White, E., Thorne, A., & Evans, P. H. (2018). Continuity of care with doctors-a matter of life and death? A systematic review of continuity of care and mortality. *BMJ Open*, *8*(6), e021161.

[149] Barker, I., Steventon, A., & Deeny, S. R. (2017). Association between continuity of care in general practice and hospital admissions for ambulatory care sensitive conditions: cross sectional study of routinely collected, person level data. *BMJ*, *356*.

26

Key lessons

Important lessons for primary health care reform can be drawn from the HCH trial. These are described below, organised into the following topics:

- Laying the foundations
- Engaging patients, carers and families
- Change within practices
- Risk stratification
- Bundled payment
- Shared care planning
- Community pharmacy
- Evaluation

Laying the foundations

1. For complex programs or innovations such as HCH, **allow adequate time for implementation**, including time for practices to prepare for change before going live with the initiative. Appropriate resourcing and support should be available during this preparatory period. The following should be considered:

    a. Allow time for and invest in **developing and communicating information about the initiative to practices**. This should include providing information sessions about the initiative for interested practices. Leverage PHN knowledge of practices locally and relationships and use knowledge and relationships of national organisations and networks.

    b. For practices agreeing to participate in future large-scale initiatives, **expectations should be established early**, ideally through comprehensive guidance and information and a formal participation agreement. The agreement should describe the enhancements practices commit to, and expectations about GP and staff engagement in the change process. Depending on the nature of the reform, the agreement could include **targets for patient and GP participation, set to reflect the need to achieve an appropriate scale, and whole-of-practice involvement and commitment to change**. There should be confirmation that **GPs within the practice have been adequately informed** about the initiative and that they support its implementation.

    c. After agreeing to participate, practices will need **six to 12 months to prepare** for the types of changes that were envisaged for HCHs. This period should be used to address changes in administrative and clinical processes, engage GPs and practice staff, decide on changes to the model of care, decide how these will be implemented, and begin to inform and engage patients. Through this period, practices, GPs and other

practice staff, will benefit from support from external facilitators, training opportunities and peer-to-peer exchange at the regional and national levels.

d. **External facilitation is valuable for practices** in undergoing the level of transformation needed to achieve aspirations of the HCH model. Facilitation should be offered during the preparatory stage and in the following period, and **expectations about what it entails for practices and their staff be set out clearly in advance**. Rapport and trust between the practice facilitator and practice staff are foundations for success, and this requires building relationships over the medium to long term. External facilitation for practices for quality improvement initiatives should be **provided by a mix of staff with advanced facilitation skills** located in meso or national level organisations and staff embedded within PHN-based teams responsible for supporting practices.

e. Ensure that **training materials are succinct, practically oriented and tailored to reflect different roles with the primary care team. Online training should be supplemented with other modes of training** and initiatives that involve interactions particularly with peers, for example, communities of practice.

f. For future large-scale primary care initiatives, **use a national event at the start of implementation** to efficiently build knowledge about the initiative and its implementation, motivate participating practices, and build relationships between practices and PHNs. Similar forums should then be held at appropriate intervals.

g. Ensure **processes involving information collection, use and sharing** – for example for enrolment, changed billing procedures, risk stratification and shared care planning – **are seamlessly integrated with practice clinical management systems**. This is challenging given the diverse systems used by general practices and the need for these to be interoperable with other systems. But future initiatives should aim to avoid the practical roadblocks in installing and integrating IT many practices faced in the HCH trial, which sapped motivation and led some practices to withdraw. Early engagement of vendors of practice clinical management software is needed to ensure enhancements to functionality and integration with other critical software can be achieved.

h. Participating practices should be offered **financial support that realistically reflects the initial costs of preparing for implementation**. Set-up costs could be minimised by sorting out IT integration issues before practices install software so that practices don't have to do this themselves, and by streamlining software to minimise data input at a practice level.

i. Before enrolling patients or other initiatives involving direct patient engagement, **practices should have achieved a minimum set of requirements or standards for the operation of the initiative**. The presence of these requirements/ standards could be assessed through an ancillary accreditation process specific to the initiative.

j. Consider **staggering the time over which cohorts of practices start implementing a large-scale initiative**. Implementation for each cohort would start at reasonably spaced points in time, such as six months apart. The initial cohort would include a small number of practices, with increased numbers in subsequent cohorts. This will

allow processes and information systems to be refined, more efficient and better use of resources provided to support practices, and lessons gleaned from earlier cohorts could be applied to later cohorts. Additionally, this approach is more likely to facilitate application of stepped wedge evaluation design, which is potentially more appropriate for practice level interventions.

Engaging patients, carers and families

2. In the implementation of an initiative, **engaging patients, their carers and their families is critical**. This is so that they are aware of the initiative and what they can expect in how services are delivered to them, as well understand the potential benefits of the initiative for their health and quality of life. The following should be considered:

    a. Exploit **multiple avenues to build awareness** of an initiative and its benefits amongst communities.

    b. **Encourage and develop the capacity of practices to engage patients, families and carers** in designing and implementing changes they will make through the initiative.

    c. Provide **practical guidance to practices on how to succinctly communicate the benefits of an initiative to patients** and their carers/families and address their concerns.

    d. Develop **strategies to recruit patients to an initiative who are less motivated, activated and/or willing to try new things**, and for whom the initiative may be most beneficial.

    e. Recognise that **it will take time for patients, families and carers to build confidence in a wider primary care team**.

3. Additional strategies are required to **enhance the capacity of GPs and practice staff to engage with patients in ways that achieve higher levels of patient activation**. Better chronic disease management and outcomes rely crucially on patient health literacy, motivation, and willingness and capacity to make lifestyle changes and understand and comply with treatment regimes. The HCH trial aspired to prompt practices to make patient activation central to the way GPs and staff engaged with patients. However, the uptake of these components of HCH model were patchy. Additionally, practices tended to focus on enrolling patients who were already at a reasonably high level of activation. The following should be considered:

    a. Passive training on patient activation is insufficient and **needs to be supplemented with training involving role plays with others**, in which practitioner skills are developed and refined.

    b. **PHNs should consider ways in which they can support practices to obtain regular feedback on levels of patient activation** within practices.

    c. **Strategies to work with less activated and engaged patients**, including those from vulnerable groups, should be **developed, evaluated and shared between practices**.

Change within practices

4. The HCH trial highlighted there is appetite for changing the focus of primary care toward the principles articulated by the Primary Health Care Advisory Group (PHCAG), but that there are **variable capacities amongst practices to undertake and manage significant change**. This reflects that general practices are busy places with little "absorptive capacity" for innovation, mostly due to their small size, and also operate in a culture of fee-for-service as the main payment mechanism. Lessons for practices in managing change include:

    a. **Make the case for change**. The evidence for the PCMH concept needs to be compiled and lessons specifically for the Australian context drawn out and disseminated to primary care clinicians and practices through various channels. The evidence should also draw out the relative advantage of the model for practices and patients and clearly articulate the problems in primary care that the model can help to address, such as increasing rates of chronic disease amongst the Australian population.

    b. **Use implementation science to match strategies to implementation challenges**. Implementation science is the "*scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services and care*".[150] Implementation science can help to systematically identify and address barriers to implementation and leverage enablers, and consider system-wide and contextual factors in addition to organisational issues and attitudes and behaviours of individuals.

    c. **Get commitment across the practice**. Use multifaceted strategies to address the understanding, attitudes, skills and confidence of staff in an initiative.

    d. **Use teams to drive change**. A team comprising a GP, a nurse and a practice manager is potentially most effective. Members of this team should be trained and have protected time to plan and work on implementation.

    e. **Identify and implement strategies to prepare practices to quickly respond to and adapt to change and reduce dependency/risks associated with a key person**. Strategies might include:

        i. Documenting desired practices/systems for new employees to take up.
        ii. Making available regular training for new staff who join the practice. Make the training part of induction.
        iii. Diversifying skills among team members so others can take on aspects of a role if someone leaves.

[150] Eccles, M. P., & Mittman, B. S. (2006). Welcome to Implementation Science. *Implementation Science*, *1*(1), 1.

Risk stratification

5. The HCH trial demonstrated that it is feasible to implement a real-time risk stratification process within Australian primary care services using practice data. Implementing systematic approaches to risk stratification of practice population has uses beyond support of payment innovations such as the bundled payment, including practice population profiling, case finding, benchmarking, utilisation review and support of quality improvement and performance measurement. These are all important for supporting future primary care reforms. The following developments should be considered to support and implement **more robust approaches to risk stratification**:

   a. **More robust risk stratification systems will be feasible where practice data can be combined with other data sources in real time, including data on pharmaceutical utilisation, hospitalisations and emergency department attendances.** These data sources yield additional information on the conditions that patients have experienced, including newly emerging conditions, functional status and measures of health care utilisation. Ideally, risk stratification systems implemented in primary care practices should have automated interfaces with systems in which these data can be accessed and relevant algorithms applied, returning the results of the risk stratification algorithms to the practice and ideally incorporated into the clinical management system. Some states, together with PHNs, have progressed innovations which have achieved some of these elements.

   b. **Efforts are required to systematically improve the consistency in the recording of health conditions and measurements within practice clinical management systems. This will ensure that information about health conditions and measurements is of sufficient detail and quality to support a range of purposes, including risk stratification, quality improvement, and quality and performance indicators**. There are currently about 10 clinical management systems used by Australian primary care practices. Most include functionality through which GPs and practice staff can flag that a particular health condition is present for an individual patient and record clinical measurement values. Additionally, presence of conditions and the results of clinical measures can be recorded in clinical notes. The classification schemes and terms used to identify conditions vary between these systems. Ancillary applications that interface with these systems – such as those developed by NPS MedicineWise for the MedicineInsight initiative, PEN CS for the CAT 4 and PAT tools and Outcome Health for the POLAR system – use various means to harmonise data from extracts, although these systems in turn use slightly different approaches and final classifications of conditions. Ideally a set of standards should be developed for how conditions and clinical measures are recorded and classified within the source practice clinical management systems. Vendors of practice clinical management systems should be encouraged to enhance their systems over time to meet these standards.

   c. **Where risk stratification relies on additional clinical assessment processes – such as use of the HARP – provide training for clinicians** on the application of the tools that targets improving clinician understanding of how the tool works and how assessment questions should be interpreted for consistent application. This should include greater clarity on how extreme social disadvantage should be reflected and assessed.

d. **For risk stratification in primary care, consider a broader range of outcomes than hospitalisation**. For the HCH trial, the predictive risk model (PRM) was developed to reflect the risk of hospitalisation. The HARP was originally developed to reflect the risk of a hospital readmission. Internationally, similar tools applied to general practice settings have been developed to predict a range of other outcomes or service utilisation, including the risk of emergency hospital admission, the risk of attendance to an emergency department, the risk of progressing to a greater level of use of primary care services, and the use of health care resources more generally.[151, 152, 153] These risks are typically correlated, but not perfectly. Focussing on the risk of hospitalisation exclusively misses opportunities to use valuable information that can be generated from a risk stratification process. In particular, risk of hospitalisation may not be the best basis for setting resource requirements in primary care.

e. **Make the best use of existing research on RSTs and evaluating how these existing tools perform in Australian primary care, before seeking to further enhance the tools used for the trial or developing other Australian-specific tools.** For the HCH trial, the Department commissioned a review of possible risk stratification systems.[154] Subsequently, the development of the PRM was commissioned and this occurred within a short period of time, using a limited set of data.[155] The HARP tool had only limited use in primary care settings before HCH, and limited empirical testing of how it would operate as a basis for a payment model. While both the PRM and the HARP operated moderately well during the trial, it is not clear that they represent optimal approaches in the primary care setting. Additionally, their use in the trial was limited, and the potential for broader utility – case finding, benchmarking, utilisation review and support of quality improvement and performance measurement – has not been explored. There is a long history of development and application of RSTs internationally, including tools focussed specifically on primary care. The literature emphasises that the technical attributes of these systems, specifically predictive performance, is only one factor in their successful use. Amongst other factors, the systems, particular the classes or tiers – need to make sense to clinicians. These systems – like the Australian Refined Diagnosis Groups system used for funding hospitals – need ongoing refinement and calibration. Assessment of costs of options

---

[151] Starfield, B., Weiner, J., Mumford, L., & Steinwachs, D. (1991). Ambulatory care groups: a categorization of diagnoses for research and management. *Health Serv Res*, *26*(1), 53-74.

[152] Johns Hopkins ACG® System. (2021). *The Johns Hopkins ACG System*. Retrieved October from https://www.hopkinsacg.org/resource-center/#documentation

[153] Canadian Institute for Health Information (CIHI). (2022). *Population Grouping Methodology*. CIHI. Retrieved 16/5/2022 from https://www.cihi.ca/sites/default/files/document/infosheet_popgroupmethod_en_web_0.pdf

[154] Oliver-Baxter, J., Bywood, P., & Erny-Albrecht, K. (2015). *Predictive risk models to identify people with chronic conditions at risk of hospitalisation* (PHCRIS Policy Issue Review, Issue. https://dspace.flinders.edu.au/xmlui/bitstream/handle/2328/36226/PIR_Predictive%20risk%20model.pdf?sequence=1&isAllowed=y

[155] Khanna, S., Rolls, D. A., Boyle, J., Xie, Y., Jayasena, R., Hibbert, M., & Georgeff, M. (2019a). A risk stratification tool for hospitalisation in Australia using primary care data. *Sci Rep*, *9*(1), 5011.

should balance factors such as licence fees for existing risk stratification products and the costs of developing, enhancing and maintaining new tools.

Bundled payment

6. The HCH trial demonstrated that it is feasible to implement a bundled payment approach for Australian primary care services but was unable to reach clear conclusions about the long-term value of this payment reform. Various potential improvements to the approach were identified, and the circumstances in which the approach may be more appropriate, as follows:

   a. **Finer-grained tiers for bundled payment are required** that better reflect the complexity of patients assigned to each tier. In particular, consideration should be given to an additional tier that reflects very complex patients.

   b. Consideration be given to re-framing the basis for determining tiers and setting payment rates. As discussed above, risk stratification schemes developed internationally have included **tiers/classes that reflect the expected use of or need for primary care resources**. This approach would be a more appropriate for tiers and payment levels compared with the risk of hospitalisation.

   c. **Future initiatives involving bundled payments should be clearer about what is included in or is outside of the bundle** rather than GPs and practices trying to interpret this, such as determining what is related to a patient's chronic conditions versus what is acute. These distinctions may also not be required, and instead handled through **payment design. For example, a blended payment may be used in which a modified fee-for-service payment rate is used alongside a bundled payment that covers planning, coordination and other chronic disease management activities**.

   d. **Develop guidance and tools for practice to help with practical implementation of payment reform,** for example reflecting how to address the impact on different revenue sharing schemes for their GPs.

   e. **Feedback from ACCHS suggested that the bundled payment – with refinements – may a viable and appropriate approach in these settings**. This partly reflects that ACCHS are typically offering a team-based approach in which there is much greater reliance on nurses, Aboriginal health practitioners and workers, and allied health professionals, and that these service providers are only partially and inadequately supported through MBS fee-for-service revenue. Additionally, the bundled payment offered greater predictability in revenue and opportunities to use funds more flexibly in addressing priority needs within the practice population.

Shared care planning

7. The HCH trial highlighted many of the challenges in providing effective platforms for undertaking shared care planning. The following lessons can be drawn:

    a. **My Health Record should be considered as the key repository for care plans**, as it is the most widely used, accessible and secure system available to patients, GPs and primary care clinicians and other health service providers.

    b. The major limitation of the current version of My Health Record is that documents that are uploaded are static. There is limited capacity to facilitate communication between diverse service providers and limited functionality to allow patients, GPs and others to track progress against patient goals set in the plans. **Ideally, future enhancements to My Health Record will provide additional functionality that better matches what is required for shared care planning**.

    c. In the meantime, **better systems for facilitating shared care planning need to be supported, which integrate with My Health Record**.

    d. Shared care plans **should be easily visible to clinicians through the clinical management systems that they commonly use in their clinical practice**, together with relevant information that shows progress against the goals included in the plan.

    e. The **uptake of shared care planning will accelerate when most health care providers have access to and actively use shared care plans**. This is more likely to occur where a common platform for shared care planning is available – such as an enhanced version of My Health Record – or when shared care planning software meets interoperability standards that allow relevant data on plans to be communicated between platforms.

    f. In future initiatives designed to improve shared care planning, **strategies are required to raise awareness about the initiative among health care providers that general practice works closely with** (for example, allied health providers, hospitals, community pharmacists).

Community pharmacy

8. For any initiatives involving collaboration between community pharmacists and primary care practice teams, **ensure that roles and responsibilities are clear and agreed by both parties**. Collaboration can then be further enhanced through maximising opportunities for **interactions that build trust between the teams**.

Evaluation

9. The HCH trial highlighted the challenges of conducting methodologically sound evaluation of national primary health care programs and initiatives in Australia. The evaluation benefited from existing efforts to bring together data from various sources, specifically data provisions in the Commonwealth and state and territory government Bilateral Agreements on Coordinated Care. However, data sources covered by these Bilateral Agreements were not able to be joined with data from practice extracts. Practice data extracts had to be sourced from multiple existing arrangements, and new arrangements set up specifically for the evaluation which were independent of the Bilateral Agreements. As discussed in point 5b above, patients' health conditions are recorded in and extracted from practice clinical management systems in different ways. Significant efforts were required to harmonise data across data extraction tools. Another challenge for the evaluation was incomplete information about the characteristics of primary care practices across Australia. The following actions could provide a sounder basis for future evaluation, quality improvement activities and research:

   a. Work towards creating **an ongoing and enduring research data collection that brings together practice data extracts from a sample of Australian practices, joined with Commonwealth and state-based data, including but not limited to MBS, PBS, hospitalisation data, emergency department data, aged care data and mortality data**. Various initiatives across Australia are progressing towards this goal, but these tend to be jurisdiction-specific, limited to practices using specific software systems for patient clinical management, or limited to practices using or participating in a specific data extraction and/or benchmarking system. These initiatives use different methods for harmonising source data. Each has its own governance and research ethics infrastructure and process and not necessarily established to allow wider use for evaluation and research. Availability of an ongoing, enduring linked data resource with streamlined ethics and governance arrangements would allow evaluations to be conducted more rapidly and at lower cost. Furthermore, regular updates to the linked data resource would maximise the follow-up period post program implementation, which was a significant limitation of the HCH evaluation.

   b. As described in point 5b above, **efforts are required to systematically improve the consistency in the recording of health conditions and measurements within practice clinical management systems and to standardise data extraction processes. This will ensure that information about health conditions and measurements is of sufficient detail and quality to support a range of purposes, including risk stratification, quality improvement, and quality and performance indicators.**

   c. Work towards enhancing existing surveys focussed on patient experience of primary care services, with **additional measures related to patient activation and patient-reported outcomes related to primary care**. Consider developing guidance on preferred instruments for these areas that could be more commonly used in Australia in evaluations of primary health care and used for the development of quality indicators and quality improvement activities within the sector. This includes guidance on preferred instruments for Aboriginal and Torres Strait Islander people.

d. Work towards creating and maintaining a data collection that pulls together **data about the structure and characteristics of all general practices and services managed by ACCHS across Australia, supplemented with additional information collected through regular surveys of practices**. While there is comprehensive data on GPs available, data on the practices within which they work is deficient. Currently there are various sources of data about practices, such as the National Health Services Directory managed by HealthDirect, information held by the Department of Health and Services Australia, the AIHW, PHNs and accreditation organisations. The most recent estimate of the number of practices across Australia was published in the *Report on Government Services 2020*.[156] This included data on location of services[157] but not on ownership, size, staffing structure, other structural attributes and practice populations. General practices are changing over time and the absence of data that tracks these changes and provides a more complete picture of practice constrains evaluation efforts.

e. As discussed in lesson 1j above, **consider staggering the time over which cohorts of practices start implementation of large-scale initiatives, and use this approach to implement a stepped wedge evaluation design.**[158] In a stepped wedge design, the unit randomised is a cluster (for example, general practice). Eligibility for participation is determined first and then the clusters (practices) are randomised to separate cohorts that start implementation at different points in time. Comparisons of outcomes are then made between each of the cohorts of practices and/or patients within these practices. This design has several advantages – most importantly the use of random allocation to reduce bias – and is practical for system-wide implementation of programs or initiatives.

---

[156] Steering Committee for the Report on Government Services, 2021 *Report on Government Services 2020*. Productivity Commission. Table 10A.53. This was based on data supplied by Department of Health using linked data elements from MBS, Practice Incentive Payments and the National Health Services Directory.

[157] See also NPS MedicineWise. (2021). *General Practice Insights Report July 2019–June 2020 including analyses related to the impact of COVID-19*. https://www.nps.org.au/assets/NPS/pdf/GPIR-Report-2019-20.pdf, Table 2.2.

[158] Hemming, K., Haines, T. P., Chilton, P. J., Girling, A. J., & Lilford, R. J. (2015). The stepped wedge cluster randomised trial: rationale, design, analysis, and reporting. *BMJ, 350*, h391.

Attachment 1: Responses to evaluation questions

Key evaluation question 1: How was the HCH model implemented and what were the barriers and enablers?

1.01 What program level activities were undertaken to assist implementation?

The Department developed and commissioned infrastructure and supports for the trial, which included:

- an incentive grant for practices
- a system for registering enrolled patients within the Department of Human Services Health Professional Online Services (HPOS) system
- guidelines for practices and patients
- software for risk stratification to identify eligible patients for HCH and assign them to payment tiers reflecting the complexity and severity of their disease and associated health care needs
- practice facilitation and support provided through PHNs
- training for practices and practice facilitators based in the PHNs
- changed payment arrangements for HCH patients (the bundled payment) and facilities to support the changed payment mechanisms
- an audit and compliance system
- evaluation.

Nationally, the trial was overseen by an Implementation Advisory Group (IAG). Five specialised working groups reporting to the IAG contributed to the development, design, modification and monitoring of the trial. The Department also met regularly with the 10 participating PHNs throughout the trial, and regional or state-based groups were established within the 10 PHN regions to oversee the trial within their regions.

In November 2019, the Department hosted a forum for practices participating in HCH and their PHNs. More than 200 people attended, including representatives from 91 HCH practices participating at the time. It was the first time that the HCH community was brought together. The forum involved presentations from HCH practices and experts on specific topics, sessions for discussing the features of the HCH model and approaches to implementation, and opportunities for networking.

Attendees felt the forum created an opportunity for information sharing on a national scale and found it kindled or reignited enthusiasm for HCH, increased knowledge and awareness of opportunities within HCH, allowed sharing of approaches to implementation, created networks between practices, and strengthened relationships between GPs, other practice staff and PHN facilitators.

Attendees believed a similar forum held soon following the start of the HCH trial would have mobilised additional enthusiasm, created stronger relationships between practices and facilitators and increased patient enrolments.

Implementation activities are described in more detail in chapters 4–8.

1.02 How were practices recruited to participate in the HCH program?

Ten PHN regions were selected from which practices would be drawn for the trial. The regions were chosen to maximise geographic and socio-economic diversity amongst the populations represented and leverage chronic disease programs operating in these regions.

Initially practices were recruited through an expression of interest (EOI), and subsequently suggested by the PHNs. Practice recruitment started in 2016 and continued after the launch of the trial in October 2017, through to June 2018. It was necessary to continue to recruit practices after the trial started as some that were selected through the EOI process didn't take up the offer, and some that were recruited withdrew once they got a better understanding of the requirements. This highlighted that practices needed more information before they applied, and potentially that PHNs could have been more closely involved in the initial recruitment to provide information to practices and advise on practices' readiness.

Processes for practice recruitment are described in more detail in Chapter 4 (p. 23).

1.03 How was HCH training strategy implemented?

The Department of Health commissioned online training modules to be developed for practices and PHNs. The modules were not widely accessed by practices, especially by GPs and nurses, where approximately 5% of the GPs and 9% of the nurses participating in the trial completed the foundational modules (1 to 5).

In keeping with the philosophy of the PCMH, all modules were deemed to be relevant to all roles within the practice (clinical and non-clinical). However, according to practices and PHNs, this was one of the shortcomings of the modules. Others were length and thus time to complete, repetition, not sufficiently practical, and pitched at "entry-level".

Nevertheless, individuals who completed the modules reported improved understanding or confidence in the topic area following completion and practices tended to rate the modules as "moderately effective" in preparing them for implementing HCH.

PHN practice facilitators initially participated in two train-the-trainer workshops in August and November 2017. They described difficulties providing support and training to practices at the same time as learning about HCH themselves. They felt they had little guidance or clear expectations of their role at the beginning of the rollout and limited time to develop and foster their understanding of the program before training practice staff. PHN practice facilitators felt it also would have been beneficial to give practice staff the opportunity to attend training workshops with other HCHs in their PHN region, so they could share information and learn together as a group.

Facilitator turnover was an ongoing issue that negatively impacted both PHNs and practices throughout the trial. The main enabler for PHN practice facilitators was collaboration and networking with other facilitators.

More detail on the training strategy is provided in Chapter 5 (p. 32).

1.04 What infrastructure and processes were commissioned to support processes for risk stratification and patient enrolment?

The Department commissioned a risk stratification tool (RST) for practices to identify patients with high coordination and care team needs. The process involved two steps: a predictive risk model (PRM) to identify patients at high risk of hospitalisation in the next 12 months; and an assessment of clinical factors and factors impinging on self-management using the HARP tool. The HARP score was used to determine the tier of the patient for the purposes of the bundled payment.

Most practices experienced challenges in installing the RST. Some of the practices that didn't take up the initial offer to participate in the trial and some that withdrew soon after they joined identified problems with the software (compatibility with their other software and/or hardware or installing it), as reasons for not continuing with HCH.

While most practices reported that the patients identified by the PRM were suitable for enrolment, there were other patients who were also suitable that the tool didn't identify. This raises whether risk of hospitalisation is the right measure for identifying patients for enhanced chronic disease management in primary care.

An issue reported with the HARP was that it scored all chronic diseases equally and didn't consider their severity. Also, some chronic diseases were missing altogether (for example, cancer). Some of the questions in the HARP were also described as "vague" or "subjective", and stakeholders thought that training and further guidance on interpreting the questions would be helpful.

Some practices completed a HARP for specific patients before they approached those patients to enrol. This was to determine whether the tier allocated would be financially viable for the practice. Almost one third of practices said that they didn't enrol some patients flagged as potentially eligible by the RST because the payment level would be insufficient to cover the costs of their care needs.

ACCHS felt that the RST was not suitable for their context as they perceived that it doesn't consider the cultural, social and geographic issues of their clients. They also faced many issues implementing the software, some of which were not able to be resolved before the end of the enrolment period.

Some practices reported not re-stratifying patients as regularly as required by the program rules. Reasons were lack of time, limited face-to-face interactions with patients during the COVD-19 pandemic, few perceived changes in their patients' conditions and a lack of motivation to do what they considered an administrative activity. When they re-stratified and patients went up a tier, this was usually attributed to a new diagnosis, the progression of a patient's existing conditions or the natural ageing process. A small number of practices reported slight improvements in some of their HCH patients and had a few move to a less

complex tier. However, the payment scheme did not provide an incentive for practices to move patients to a less complex tier and some described it as a disincentive because they would receive less funding for a patient that dropped a tier.

The Department of Health funded the 10 PHNs involved with the trial to support practices through the HCH implementation, including enrolling patients. One of three FTEs funded in each PHN was to help practices with enrolling patients. PHN practice facilitators offered practical support with this, such as such as using the RST and registering patients in HPOS. One PHN also organised an information seminar for patients for HCH practices within the region.

The implementation approach adopted for the RST is described in more detail in Chapter 6 (p. 39), and patient enrolment approach in Chapter 7 (p. 52).

1.05 How effective and efficient were the program's administrative processes, including for patient enrolment, claims management, monitoring program processes, and managing program compliance and integrity?

The Department of Health provided guidance to practices on the enrolment processes in the HCH handbook for practices and funded an FTE in each of the 10 participating PHNs to help practices with enrolment.

Practices reported that explaining the program, getting consent, assessing patients' eligibility, and registering patients on multiple platforms were time-consuming:

> *"There's a lot of things though, and you must know the extra amount of work that we've done. We had about seven tick boxes to just change one patient here in our system anyway because we had flagged them in Medical Director, PracSoft, HPA [evaluation activities], PRoDA, that spreadsheet, the top bar. You have to change everything and it's all time and then that takes away from the amount of care planning you do."* [Nurse, Practice 4, interview, R5]

Practices recommended that these processes be better streamlined for similar programs in the future, especially the IT components.

Many practices reported "teething issues" with IT, which were largely resolved as the trial progressed. However, IT issues persisted for many practices in rural and remote locations.

Implementing the bundled payment also took up a large amount of practices' time in the initial stages of the trial, working out how to distribute the payment amongst staff and what services were in the bundle versus what could be charged separately. Managing two systems of charging in the same practice was also an issue for many practices, especially where they had relatively few patients enrolled in HCH.

Individual staff members interviewed for the evaluation reported that their job satisfaction was initially negatively impacted by the administrative burden associated with setting up for the trial. While this resolved for most, some reported ongoing struggles with the workload created by the administrative aspects of the trial in addition to creating care plans and other ongoing clinical tasks.

Program administrative processes are described in various parts of the report, in particular chapters 4–8, and practice experience with these in Chapter 9.

1.06 What roles did PHNs play in the HCH implementation?

The Department managed the selection of practices as a grant program, with selection committees involving its national and state and territory offices. PHNs were not directly involved in selection but were asked to comment on practices the Department was considering selecting.

PHNs thought that they should have been more closely involved, as they have a better understanding of the readiness of their local practices to participate in initiatives such as HCH. They also thought that by being involved earlier, they could have more effectively engaged with their practices before the start of the trial and helped them to tailor the model to local needs.

Others thought that if PHNs were involved, they might have selected a less representative set of practices for the trial, most likely ones they thought were ready or capable of the changes required. Having practices at all capability levels meant that the trial would better resemble the experiences of practices in a wider rollout of the model. Also, through facilitating practices that weren't as mature, PHNs gained insights into their own capabilities of working with these practices.

PHNs felt there wasn't enough information given to practices about the trial before they applied. Some ran information sessions themselves for practices within their region. They suggested that they could have helped more with disseminating information about the trial and the model if involved earlier.

As implementation progressed, a key role for PHNs was supporting practices in their transformation and in enrolling patients through the practice facilitator role. At the beginning of the trial, PHN practice facilitators felt that they had little guidance or clear expectations of this role. They thought that the train-the-trainer workshop that was run before the program launch (August 2017) could have been used to better define the role. As time went on, they developed their own understanding of the role. By the second round of interviews (about a year after the first set of practices started enrolling patients), they thought that they were in a better position to support practices. One of the issues that hindered the advancement of the role was turnover of facilitators. New facilitators had to re-establish relationships with practices and rebuild trust, in addition to developing their knowledge of HCH and their skills in supporting practices.

A major challenge that practice facilitators faced in their role was getting access to key staff in practices, particularly GPs. Strategies that they used to get around this were being flexible with their time (for example, offering early morning or lunchtime sessions), and establishing expectations around the requirements and frequency of practice–PHN engagement. Facilitators felt that they had little time to engage effectively and establish strong relationships with practices from when they signed their agreements to when HCH was launched.

Practice facilitators reflected that their role as it was designed for the trial was intensive, and potentially not feasible for a nation-wide rollout of a similar program. They commented that in the future, the role should evolve to be more about coaching; the ultimate goal is for practices to drive change and facilitators to guide them through it.

PHN roles in the trial are described in various parts of the report, in particular chapters 4–8, and practice assessment of support provided in chapters 9 and 10.

Key evaluation question 2: How does the HCH model change the way practices approach chronic disease management?

2.01 What did practices do to implement HCH, including changes to policies, procedures, systems, administrative processes, changes to manage payment for HCH patients, processes for risk stratification, and patient enrolment?

Preparation for HCH was complex. It involved new technology, new administrative processes, and new ways of working with patients, as a team internally and with other health care providers outside the practice. Practices needed to develop strategies to explain the benefits of HCH to patients to recruit them to the trial. They also needed to transform their processes for chronic disease management, care planning and the sharing of plans, and define new roles for staff.

Practices had very little time to establish themselves as a HCH before patient enrolment opened. They reported that the focus on enrolment in the early phase of HCH competed with transformation. In most practices transformation did not begin in earnest until enrolments were completed.

Practices took time to convince their GPs that the bundled payment would be workable and had to work through revenue sharing arrangements. These issues had to be addressed before work started on changes to their model of care.

Practices were often unaware of or surprised about the level of training, set up, change management and staff engagement needed to implement HCH. Practices needed to better understand what it meant to be a HCH.

Another factor delaying progress was practices not knowing how to proceed. PHN practice facilitators felt that the HCH model of care had not been sufficiently defined. It was recognised that this may have been deliberate on the Department's part – to encourage local adaptation and innovation – however, some practices just didn't know what to do.

PHNs felt that sometimes practices didn't appreciate the extent of change that HCH required. They commented that some practices thought that the introduction of a bundled payment was the total sum of the change required or could not see how HCH was different from meeting quality standards for accreditation. Where practices claimed that they were already operating as a HCH when joining the trial, PHN practice facilitators observed that many of these practices had a limited understanding of the model and disagreed that their models aligned with the HCH principles.

PHN practice facilitators thought that practices should have been required to participate in a HCH readiness program before enrolling patients, or there should have been "ground rules" or "requirements" established directly with the PHNs to ensure that they understood the level of work and change required to become a HCH. Practice readiness programs had been in place in some PHNs before HCH, and other PHNs not involved in HCH had established similar initiatives. Facilitators thought that practices should achieve the first four building blocks of high performing primary care –engaged leadership, data driven improvement, empanelment

and team-based care – before enrolling patients. During this time they would also address practical issues associated with implementing IT, enrolment processes, and improving the completeness and quality of data.

The approaches practices took to implementation in the earlier stages of the trial, including risk stratification and enrolment processes, are described in more detail in Chapter 9 (p. 77) and Chapter 10 (p. 83).

2.02 How did practices approach provision of chronic disease care before the implementation of HCH? What chronic disease management and quality improvement initiatives were in place within the practice at the commencement of the HCH program? Which of these were used and/or enhanced for the HCH implementation?

Practices selected as HCHs needed to meet minimum criteria, including accreditation against standards set for general practice by the RACGP and participation in the PIP eHealth Incentive. Practices also commonly reported participating in the Diabetes and Asthma PIP components. Most practices also reported involvement in a quality improvement, collaborative, benchmarking, or chronic and complex disease management initiative in the last two years before joining the trial. Also, in their self-assessments using the HCH-A tool, practices' median and mean self-assessment scores were in the range of 6 to 9. These suggest that practices believed that they had many of the elements of a PCMH in place, but that there were opportunities for improvement.

Some practices thought their existing model was aligned with HCH and didn't do anything new during the trial. PHN practice facilitators thought that some of the practices making this claim had a limited understanding of HCH.

Most practices were actively aiming to implement initiatives to improve chronic disease management and patient-centred care as part of the trial. Initiatives that less than half of the HCH practices said they had in place before the trial included: regular meetings of the practice team to review HCH patients and their care needs; reassigning components of care from the GP or nurse to a medical assistant; introducing new roles within the practice; dedicated clinics for patients with specific chronic conditions; group consultations; secure communications/messaging between patients and GP or nurse; and a patient portal. Of these, during their time in the HCH trial, practices made the least progress with group consultations; reassigning components of care from the GP or nurse to a medical assistant; introducing new roles within the practice; dedicated clinics for patients with specific chronic conditions; introducing a patient portal; and joint consultations involving a GP, nurse and allied health.

The two Northern Territory ACCHS that implemented HCH found that although the HCH model was similar to the way they were already delivering care, implementing HCH meant more frequent reviews of patients' care plans and, overall, more comprehensive plans. They also found that team meetings were more effective and efficient, mostly due to improved care planning, which allowed all members of the team (including visiting allied health and other health professionals) to be across what was happening with individual patients.

Chapter 10 (p. 83) describes in more detail the changes practices made to chronic disease management for their HCH patients.

2.03 How did the mix, roles and activities of primary health care staff change following the HCH program implementation?

To keep up with enrolment and ongoing management of HCH patients, some practices hired new staff and/ or established new roles responsible for HCH patients/ activities. New staff included nurses, medical practice assistants, and administrative assistants. Though some practices with a larger proportion of HCH patients would have liked to hire additional staff for HCH they felt that it was still not financially viable to do so or had issues with staff recruitment or retention.

Several practices reported focusing on team-based care and delegation from the GP to other team members as part of their HCH transformation. For these practices this focus brought about positive results for both staff and patients and was considered a key change resulting from HCH. Team care was reinforced by routine team meetings or "huddles" and preparing patients for the team approach. GP lack of willingness to delegate care responsibilities (due to mindset or risk management) was a barrier for some practices in enhancing team-based care. Key enablers for team-based care, which were also barriers when not present, were staff engagement with the model, patients' willingness to be managed by other members of the team and awareness of the goals and mechanisms of the HCH model, and use of practices' shared care software by some internal practice staff and external providers.

Chapter 10 (p. 83) describes in more detail the changes practices made in their model of care, and Chapter 14 (p. 162) describes staff perceptions and experience of these changes.

2.04 How did the relationship between the practice and other health care and service providers change during the HCH implementation? Did the HCH program provide opportunities for better coordination of care, information sharing and communication with other health care and service providers?

The shared care planning software used by practices varied. Practices reported various problems, including the software being clunky or cumbersome to use, a lack of templates for some chronic diseases and poor integration with existing clinical management systems. In some instances these issues improved with software enhancements that occurred during the trial. However, the challenges faced by practices meant there was only a small movement towards electronic shared care during the trial.

PHN practice facilitators and practice staff reported limited awareness of HCH and the shared care planning software amongst external providers. Despite some facilitators employing various approaches to improve engagement of the wider healthcare neighbourhood through education, training and community allied health events later on in the trial, facilitators cited several obstacles in attempting to increase external provider involvement in HCH. One key issue was that for practices with a small number of HCH patients, learning to use the software was not a priority for them. Patient engagement with electronic portals available through some of the software was extremely limited. This was due to technical capabilities, health literacy or interest. In addition, a lack of financial incentives

to devote extra administrative time to learn about and use the new shared care software was also an issue for internal and external allied health working with HCH practices.

Changes related to shared care planning that occurred during the trial are described in more detail in Chapter 11 (p. 128). Issues related to shared care planning and communication through the Community Pharmacy in HCH Trial are described in Chapter 23 (p. 305).

2.05 How did the additional flexibility associated with the bundled payment facilitate practice change? Was the value of the bundled payment sufficient to change the way practices provide chronic disease care?

The perceived benefits of the bundled payment for practices and GPs included certainty of funding, additional financial flexibility and potential time savings for GPs as they could delegate certain tasks to other team members. Perceived disadvantages included an increased workload and the amount of time it took to understand and implement the HCH model.

Many practices were interested in testing and/or comparing the bundled payment with the fee-for-service model and thus enrolled only a few patients. Practices with very low numbers of enrolees didn't have the flexibility from the bundled payments to introduce new or different supports for patients and had difficulties with maintaining the model given that it was such a small part of their practice.

Practices that enrolled a higher number of patients were more likely to report that the bundled payment was having a positive financial impact. Nevertheless, some felt that regardless of the number of patients, the financial model would not allow them to provide more services or hire additional staff.

The ACCHS participating in the trial reported that the bundled payment provided certainty of income and enabled staff to get paid for after-hours work that they believed was not supported under Medicare. ACCHS staff were concerned that at the end of the trial they would not be able to provide the level of care needed by their chronic disease patients without the bundled payment.

Practices offered a range of ways in which the bundled payment could be improved. Many recommended increasing the level of funding by tier or expanding the tiers to recognise more costly patients to further incentivising practices to focus on prevention and the achievement of positive health outcomes.

Chapter 8 (p. 62) provides more detail on the issues practices experienced with the bundled payment.

2.06 How did practices change from before the HCH program implementation to the end of the trial in implementing the dimensions of the patient centred medical home?

Practices used the HCH-A tool to assess themselves against dimensions of the PCMH. The tool has eight dimensions. Across 60 practices that reported their scores in round 1 and round 5, the mean scores increased on each item and for each dimension. However, the increase was mostly below a value 1, and the increase was statistically significant only for

selected items. We also estimated the number of practices reporting an increase in the assessed scores. Across all dimensions and most items, the proportion of practices reporting an increase in the score was greater than 50%.

The dimensions on which the data suggests the greatest level of improvement were "2 Patient enrolment", "3 Quality improvement strategy", and "6 Patient-centred interactions". A relatively high proportion of practices (60%) reported improvements in the dimension of "5 Organised, evidence-based care", although the differences in mean scores were generally not significant for this dimension. Other items in which there was a statistically significant improvement in mean scores included "31 Practice approach to linking patients to supportive community-based resources" and "34 Contacting the care team during regular business hours".

Following the end of the enrolment period, practices that aspired to make changes but didn't identified staff turnover (especially losing champions who drove the program within their practice), the high administrative burden of the program and COVID-19 as factors that reduced staff enthusiasm and engagement with the program and hindered their progress.

Most practices participating in the trial anecdotally reported improvements in coordination of care, quality of care and access for their patients.

Towards the end of the trial, most practices said that they would participate in a program like HCH in the future. Specific elements they identified that they would continue included telehealth, dedicated chronic disease management roles, team-based care and patient recalls. Elements that they would discontinue included use of shared care planning software and wide use of practice nurses due to lack of reimbursement under fee-for-service. While practices believed in the philosophy of HCH, many recommended further enhancements they thought would make it easier to operate the model within their practices or features they felt were necessary for successful implementation.

While COVID-19 slowed some initiatives, it accelerated others such as HCH patients being able to call or email/text the practice about their health concerns or refill scripts without a GP consultation. Practices also reported that some of the initiatives that they had implemented as a HCH helped them better manage patients with chronic conditions during the pandemic. These included alternative communication mechanisms for patients (telephone, email, secure messaging), proactive contact to check on patients' health and regular meetings of the HCH practice team to review patients' care needs.

Some practices expressed that one of the effects of the pandemic was that it negated the need for a program like HCH with the increased use (and acceptance by patients) of telehealth, eScripts and eReferrals. However, this illustrates a narrow interpretation of the HCH model; that it is predominantly about offering patients alternatives to face-to-face contacts.

ACCHS clinics also increased their use of telehealth during the pandemic. This was for specialist consultations, whereby patients would have a videoconsult with a specialist in the clinic accompanied by a clinical nurse or a GP. ACCHS staff thought that telehealth could not entirely replace specialists physically visiting the communities. The reasons are that for many

patients, English is their second, third or fourth language, and they prefer personal (face-to-face) relationships.

All practices reported issues with keeping up with chronic disease management during the pandemic, due to the inability to see patients face-to-face and pressures associated with the pandemic that made it difficult to provide proactive, planned care. Overall, the pandemic stifled HCH activities/progress for many practices.

Chapter 10 (p. 83) describes in more detail the changes practices made during the trial, including their assessment of change related to the dimensions of the PCMH.

2.07 Which practice level approaches to implementation worked well, and in what contexts?

Key enablers for implementing HCH that practices mentioned were leadership and staff participation, adequate enrolments, adequate resources and a focus on team-based and patient-centred care. Staff turnover and workforce shortages, administrative burden, patients' understanding and expectations of HCH and scale of enrolments were key challenges for practices throughout the trial.

In ACCHS clinics, the key enablers for implementing programs like HCH were the ACCHS structure (once agreement to participate was achieved, which could sometimes be tricky), the community and relationships of clinical staff with their patients. The key challenges were the transient nature of ACCHS populations, making it difficult for a single clinic to operate as their medical home; suboptimal and inconsistent communications with external health care providers (specialists and hospitals) about their patients; and availability of staff and services to follow through with care plans.

These issues are addressed in various parts of the report, including chapters 9–13.

2.08 How did the impact of HCH vary across practices with different characteristics (for example, across different remoteness areas and ownership arrangements)? How did these characteristics affect the success of the model? What does this tell us about the potential of the HCH program to improve access to primary health care, particularly for vulnerable and disadvantaged populations, and improve equity in health outcomes?

Different barriers and enablers presented for practices in their implementation and operation of HCH based on their location, size and ownership model.

Compared with practices in metropolitan and regional areas, rural and remote practices described additional challenges with participating in the trial. These were especially apparent during the implementation phase and included difficulties with IT set-up and internet connections, recruiting and retaining staff, and availability of supports and medical resources within the community resulting in reduced access to services. Collaboration with the PHN and other practices within the region was also more challenging due to the wide geographic distribution. Widespread use and acceptance of telehealth and videoconferencing, which accelerated during COVID-19, helped to improve collaboration.

On the other hand, due to the lack of services outside of primary care, rural practices tend to have a wider scope of practice and be more holistic and team-oriented in their approach, and the bundled payment supported them in this, providing certainty of funding and backing for clinical staff to work at the top of their scope.

While larger practices had more staff and infrastructure to implement the model, they also took more time for implementation due to the need to get a larger group of people engaged and a wider set of processes to change. Smaller practices had more flexibility to make and implement decisions, but they had less resources and were more greatly affected by turnover of key staff compared with larger practices. Regardless of practice size, PHNs and practices reinforced that strong leadership, staff buy-in and a larger scale of HCH patients were integral to program success.

Similar to practice size, there were advantages and disadvantages to operating HCH in corporate versus independently owned practices. In many instances corporate practices were also large practices and independently owned practices were usually medium-sized or small; therefore, there was some level of overlap when comparing practices' experiences based on practice size and ownership.

Practices reported improvements in access to care regardless of location, practice size and ownership model. Practices reported that they had improved access for HCH patients through offering telephone (and to a much lesser extent) video consultations with the nurse or GP, email correspondence, a direct telephone line for HCH patients to call, streamlined referral processes, and increased nurse involvement in patient care. This was enabled by the bundled payment. The practices reported that these alternative access points and delivery modes reassured patients that their practices are there for them beyond their scheduled appointments, facilitated practices to provide more personalised care and helped both practices and patients more effectively manage their care. Many practices also judged that they had enhanced patient monitoring, care management, and follow-up under the HCH model. Improvements often came in the form of improved monitoring, more frequent care plan reviews, pastoral care, and an overall increase in communication between the practice and their patients. This made practices feel their HCH patients were more closely monitored and would not, "*slip through the cracks*". In addition, some practices implemented new services to help enhance their chronic disease management, including home visits, group sessions, remote monitoring and point-of-care testing.

These issues are described in more detail in Chapter 12 (p. 137, which addresses the experience of ACCHS) and Chapter 13 (p. 155, which describes how challenges varied across practices with different ownership arrangements, size and different geographic locations).

2.09 How did the HCH implementation change provider experiences of delivering primary care services?

The impact of HCH on staff experience differed substantially across practices. Only about one third of staff who had been employed at their practice before the introduction of HCH reported their role had changed due to the practice's participation in the program. Among those who reported a change in role, the majority reported that they delegated more responsibility to others, but this was more common among GPs. Most staff also reported they were delegated more responsibility, and consistent with above, this was less common among

GPs. Administrative staff and practice managers mainly reported changes in administrative tasks, with some administrative staff had a role in educating people about HCH. Some nurses reported an increase in their scope of practice, particularly in relation to chronic disease management and stronger relationships with patients.

Approximately half of the staff who completed the staff survey reported the practice was "busy but reasonable", and over 30% reported it was "busier than reasonable", but this was not significantly different between survey rounds.

In the round 5 survey, staff reported positively on seven statements related to their work environment, with approximately 90% indicating they agreed with each of the positive statements. This was only slightly higher than in round 1 (baseline). Responses to the practice survey in round 5 indicated there was either no (24.7%), small (26.0%) or moderate (24.7%) improvement in job satisfaction due to HCH being implemented in the practice. The most rewarding aspect of the model for staff was working towards improved health outcomes for patients, along with the ability to build rapport and establish stronger relationships with patients under the model.

Chapter 14 (p. 162) describes staff perceptions and experience with changes made during the HCH trial.

Key evaluation question 3: Do patients enrolled in HCH experience better quality care?

3.01 What changes occurred in the quality of chronic illness care provided for patients enrolled in the HCH program, and how did these compare with patients receiving care from practices not enrolled in HCH?

Overall, most HCH patients had frequent encounters with a practice GP in the 12 months before enrolment (mean 13.4 encounters, std 9.9, median 11). In the year following enrolment, HCH patients had a similarly large number of GP encounters as in the pre-enrolment period (mean=13.7, std=10.3). Comparator patients were matched to HCH patients on pre-enrolment numbers of GP encounters and had a mean of 13.3 (std 9.7, median 11) encounters in the 12 months before enrolment. However, they tended to have fewer GP encounters than HCH patients in the following year (mean=12.0, std=10.2).

In the six months before enrolment, 18.4% of HCH patients had at least one recorded encounter with a practice nurse with a mean number of encounters of 0.8 per patient (std=3.5, median: zero encounters). A small proportion (4.4%) having five or more encounters. At six months following enrolment, the proportion of patients having an encounter with a practice nurse increased to 22.6% and remained stable thereafter. It should be noted that capture of encounters with a practice nurse in practice clinical management systems is variable, and this measure was not compared with comparator patients, due to inconsistences in data sources.

A small proportion of HCH patients had encounters with podiatrists, dieticians and psychologists recorded within the HCH practice. This proportion changed very little following enrolment. (This information was not available for comparator patients.) However, HCH patients had increased access to allied health outside the practice. In the year before enrolment, slightly less than half of HCH patients (46.7%) received one or more allied health services for chronic disease management (mean 1.7, std 2.3). In the year following enrolment, this increased to 52.5% (mean 2.0, std 2.4) and remained at 46.3% (mean 1.7, std 2.2) at year two and 48.3% (mean 1.8, std 2.3) at year three of follow-up. The proportion of comparator patients with one visit or more was 41.9% in the pre-enrolment period (mean 1.5, std 2.2), and this declined to 38.7% at year one (mean 1.5, std 2.2), 37.0% at year two (mean 1.4, std 2.1), and 38.4% at year three (mean 1.4, std 2.1).

Greater proportions of HCH than comparator patients had clinical measurements, including blood pressure, lipid tests, HbA1c and kidney function tests, recorded in the two years following enrolment. This was corroborated by other analysis that showed that in the period following enrolment, HCH patients had a significantly higher number of claims for HbA1c tests than comparator patients.

A larger proportion of HCH patients than comparator patients received an annual influenza vaccination.

Through the practice survey, practices judged that the HCH model resulted in improved coordination of care for patients, quality of care, access to care, patient engagement/ activation and outcomes.

Coordination of patients' care within practices was improved through regular team meetings or huddles and case conferencing, and nurses' access to comprehensive, up-to-date information from patients' care plans. Teamwork also meant that nurses could take more time with care plans and ask for input from patients, resulting in the care plans better reflecting patients' goals. Respondents had mixed views about whether coordination of care with patients' external providers was improved. While some indicated improvement, many reported problems with software integration to share information with external providers, and specialists' and allied health providers' resistance to or inability to use shared care platforms.

Practices identified that quality of care was improved for patients through improved practice processes. A commonly mentioned example was scheduling regular reviews/recalls where patients would get the necessary tests and preventative care such as immunisations. Another example was communication between practice clinicians, and between practice clinicians and patients, both in-person and through care plans. Some practices attributed the ability to improve these processes to the flexibility provided by the bundled payment.

In addition, some practices implemented new services to help enhance their chronic disease management, including home visits, group sessions, remote monitoring and point-of-care testing.

These analyses are described in more detail in Chapter 15 (p. 173).

3.02 Did patients enrolled in the HCH program have improved access to primary care services, including through alternate ways of accessing the service? How did the use of primary care services change for HCH patients compared with similar patients receiving care from practices not enrolled in HCH? How did use of services from within the HCH practice change? Did the HCH model result in increased continuity in the provision of primary care?

Increases in access to GPs, practice nurses and allied health staff were presented under question 3.01.

Practices mentioned that patients were able to have more timely access to clinicians at the practice overall, and specifically to GPs, nurses and allied health, and better access to scripts and referrals. They attributed this to teamwork (especially GPs being able to delegate to other team members, thus being free to see patients when needed), dedicated roles (for example, HCH nurse) and the ability to offer alternative modes of delivery under the bundled payment. Some practice also offered priority access to HCH patients, either when arriving in person or over the telephone.

Changes in care most noticed by patients included increased access to a practice via telephone or email. This included requesting routine prescriptions or referrals over the phone without an appointment with their GP, and a capacity to telephone a practice nurse, HCH coordinator or doctor to discuss health-related questions or concerns, which put them at ease and helped them manage their condition(s) more effectively.

Some patients found that turnover in staff at the practice – mainly in practice nurses or HCH coordinators – affected the level of contact they had with the practice. The impact of staff

turnover was more evident to patients in the later phases of the trial, especially during the pandemic when some practices reduced the level of support they provided to their HCH patients.

While some practices maintained the same level of service offerings and support to their HCH patients throughout the trial, other practices stated that HCH became less of a priority during the pandemic. This was due to a variety of reasons, including staff turnover and diverting resources and staff to other focus on other areas of practice operations, such as establishing systems to support the provision of telehealth services.

These analyses are described in more detail in Chapter 15 (p. 173) and Chapter 16 (p. 193).

3.03 How did the use of secondary care and other community-based services change for HCH patients compared with similar patients in practices not enrolled in HCH? Was there improved coordination of services between primary care and other service providers?

Following enrolment, HCH patients had fewer claims for unreferred GP consultations than comparator patients.

In the pre-enrolment period, greater proportions of HCH patients had a claim for the development of GP Management Plan, development of Team Care Arrangement and review of these care plans than comparators. Following enrolment, claims for these items by HCH patients significantly decreased, reflecting guidance given to practices that GP Management Plans were included in the bundled payment for HCH patients and should not charged separately. Claims for Indigenous Health Assessments (MBS item 715) could continue to be made for HCH patients.

HCH patients had similar numbers of claims for specialist consultations and imaging services to comparator patients in both pre- and post-enrolment, but greater numbers of claims for allied health services for chronic conditions in the first year following enrolment.

In the period following enrolment, HCH patients had slightly greater numbers of claims for any pathology test and significantly higher number of claims for HbA1c tests than comparator patients.

The trial involved implementation of software to facilitate shared care planning between the HCH practices and external health providers. Although different software was used by different practices, practices reported a myriad of problems, including the software being clunky or cumbersome to use, a lack of templates for some chronic diseases and poor integration with existing clinical management systems. As a result of these problems, there was only a small movement towards electronic shared care.

PHN practice facilitators and practice staff reported limited awareness of HCH and the shared care planning software amongst external providers. Despite some facilitators employing various approaches to improve engagement of the wider healthcare neighbourhood through education, training and community allied health events later in the trial, facilitators cited several obstacles in attempting to increase external provider involvement in HCH. One key issue was that for practices with a small number of HCH

patients, learning to use the software was not a priority for them. Patient engagement with electronic portals available through some of the software was extremely limited. This was due to technical capabilities, health literacy or interest. In addition, a lack of financial incentives to devote extra administrative time to learn about and use the new shared care software was also an issue for internal and external allied health working with HCH practices.

These issues are consistent with the finding from the literature that electronic information exchange is a necessary precondition, although not sufficient, for successful implementation of care collaboration though a medical or healthcare neighbourhood. Software that integrates well with existing systems, is easy to use as a by-product of existing care and provides the foundation for information exchange arrangements with external services is a requirement for any formal arrangement of collaborative care between providers.

These analyses are described in more detail in Chapter 18 (p. 220).

3.04 Were the patients enrolled in the HCH program and their families/ carers more engaged in managing patients' health needs? What strategies resulted in the greatest impact on patient activation?

There were no changes to patient activation over the course of the trial. However, HCH patients already started with a high level of activation compared with a sample of patients with chronic disease drawn from the general Australian population.

Practices acknowledged that often patients were selected to be enrolled in HCH because they were more activated. Nevertheless, some reported improvements in engagement, health literacy and self-management amongst their HCH patients. They attributed these to patient education sessions and team care, where patients had better access to nurses who could take time to talk to them about their conditions through multiple channels of communication.

Practices also thought that patient activation was enabled by the practice being more proactive in looking after their patients, thereby encouraging patients to take more responsibility for their health and be more involved in their care.

Analyses related to patient activation and strategies adopted by practices are described in more detail in Chapter 10 (p. 97).

3.05 Did patients enrolled in the HCH program report an improved experience of primary care, including coordination of their care and communication with their primary care providers? What were the experiences of patients, carers and families in care planning?

HCH patients often had long-standing relationships with their practices. The wave 1 patient survey revealed that 65% of HCH patients had been attending their practice for five or more years and a further 16% had attended for three to five years.

Some patients appeared unaware of what enrolment in HCH entailed and reported that little had changed with their care. Practices attributed patients' observations of no difference to the fact that they were already operating like a HCH before the trial. Patients generally reported getting good care, but increased awareness may allow them to take full advantage

of what HCH can offer. This is especially important for HCH with its emphasis on involving patients in their care and patient self-management.

Most patients reported that they had strong, long-standing relationships with their GPs and were satisfied with the care received from their practices. Some patients observed that a practice nurse had more active involvement in their care following enrolling in HCH. They welcomed this change, as they were able to ask more questions about their health and how to manage their conditions.

Most patients were aware of the care plan that had been developed at enrolment and received a paper copy of the plan. However, patients had limited awareness of electronic sharing of information from their shared care plan among their providers.

Some patients reported positive experiences from involvement in patient groups established by the practice, which contributed to improvements in knowledge and sometimes their physical and psychological health. However, most HCHs did not establish groups, and practices that did introduce groups had to suspend or stop their group sessions altogether during the pandemic.

Carers interviewed reflected that the HCH model was a great support to them and the person they care for. Carers mentioned that the ability to request prescriptions and referrals over the phone and having the nurse or coordinator as a clinical resource to call upon were very beneficial.

Many practices reported that patients who enrolled in HCH were already motivated to manage their health. GPs also tended to approach patients to enrol whom they thought were activated or were willing to try new things. Some practices observed that through HCH, patients became more aware of their role in managing their health, and this engendered enthusiasm about what patients can achieve for themselves.

In the broader rollout of programs like HCH, strategies to engage patients who are less motivated, activated and/or willing to try new things will be important. These patients are more likely have poorly controlled chronic conditions and may benefit significantly from programs like HCH.

Patients of the ACCHS clinics were largely not aware of what the HCH model entailed and did not notice any changes to their care. Most were aware of their care plan and that the doctors monitored their health through regular follow-ups. They understood the association between lifestyle factors and their medical conditions, and the need to modify their lifestyle to improve their health. Some also mentioned working towards specific health goals (for example, quitting smoking).

Relationships with clinic staff and continuity of care were important to patients of ACCHS clinics.

The lack of awareness of ACCHS patients of being enrolled in HCH could be due to the similarity of the HCH model to the ACCHS model, but, as with mainstream practices, raising awareness of initiatives is important so that patients know what to expect.

Analyses of patient experience are described in more detail in Chapter 17 (p. 216).

3.06 How did the utilisation of hospital services (including emergency care), and entry into aged care change for HCH patients compared with similar patients receiving care in practices not enrolled in HCH?

More than half of HCH patients used five or more unique medicines before enrolment. This remained consistent, and similar to comparator patients, following enrolment.

Meanwhile, very small proportions of both HCH and comparator patients had a claim for Home Medicines Review, both pre- and post-enrolment.

Similar patterns of hospital and ED use were seen in HCH and comparator patients in both pre- and post-enrolment periods, in terms of proportions presenting to emergency departments, admitted to hospital (all-cause, emergency admission, potentially preventable hospitalisations), total number of bed-days, and weighted intensity of admission episodes (that is, National Weighted Activity Units).

Among patients who had not used residential aged care services before enrolment, small and similar proportions of both HCH and comparator patients had an entry to an aged care facility in the follow-up period.

Patterns of serious cardiovascular events or mortality in both HCH and comparator patients were comparable, in both the proportions and length of time from enrolment to the event.

These analyses are described in more detail in Chapter 18 (p. 220).

3.07 Which patients benefited from the HCH program? Are the benefits of the HCH program similar for patients across categories of disadvantage? Was patient participation in the program maintained through the trial? Were movements of patients between risk tiers appropriate? What does this tell us about the potential of the HCH program to improve access to primary health care, particularly for vulnerable and disadvantaged populations, and improved equity in health outcomes?

Demographic and socio-economic characteristics of participants in the trial are presented in various parts of this report.

- Table 6 (p. 16) provides overall general demographic characteristics on HCH enrolees (age group and sex).
- Table 13 in Volume 3 shows demographic characteristics of HCH patients and comparator patients based on practices extracts, and Table 15 in Volume 3 shows a similar comparison for the linked data.
- Table 78 in Appendix 7 of Volume 3 provides demographic and other socio-economic characteristics of trial participants who responded to the patient surveys, including age group, sex, Indigenous status, country of birth, highest level of education and household composition. It should be noted that the patient survey was not conducted for patients of the participating Northern Territory ACCHS, a decision made following consultation with these services.

The characteristics of participants was influenced by the characteristics of practices selected to participate in the trial, which was in turn shaped by the sampling frame developed for the evaluation.

Analysis of outcomes by subgroups was not undertaken for the evaluation. Consequently, conclusions about the groups for which HCH would be of most benefit is largely based on qualitative analysis of perspectives expressed during the trial.

Practices highlighted difficulties in enrolling patients from different cultures, non-English speaking backgrounds, recent migrants, and homeless people, due to cultural expectations, language barriers and lack of permanent accommodation. However, sometimes these barriers arose from what practices were planning to offer as part of HCH (such as telephone consults, which would not work for people with limited English without an interpreter) rather than the model not being suitable for these individuals. However, there was a high level of enrolment of Aboriginal and Torres Strait Islander people, largely due to the participation of ACCHS.

Participating practices also tended to enrol patients who were more likely to have a higher level of self-efficacy or patient activation.

As discussed elsewhere in this report, it is possible components of the HCH model of care may be appropriate for various vulnerable groups. Feedback from ACCHS suggested that the bundled payment better aligned with the approach they typically adopted for care – involving team care with greater involvement of staff other than GPs, and that it provided greater certainty in funding, allowing practices to better plan services delivery. It was also suggested by some people interviewed that less activated patients are more likely to benefit from an approach that emphasises more meaningful engagement with their health care providers, with a focus on help them to take a more active role in managing their chronic illnesses.

At the trial end on 30 June 2021, 7,742 (68%) patients remained. More than one third of patients who withdrew did so because their practice withdrew. Among all patients who enrolled, 7.3% opted out of the trial. In interviews with practices, staff commented that patients who opted out did not understand the HCH model or wanted more one-on-one time with their GP. Other reasons for withdrawing included: the patient was no longer with the practice, the patient died, or the patient moved from the area.

Among the patients who were still in the trial until 30 June 2021, 1,053 (13.6%) were re-allocated to a different tier at least once before 30 June 2021. Of the 1,427 patients allocated to tier 1, 381 (26.7%) moved to a more complex tier. Of patients initially allocated to tier 2, 443 (11.3%) moved to tier 3 and 97 (2.5%) to tier 1. Of patients initially allocated to tier 3, 128 (5.3%) moved to tier 2 and a further 4 (0.2%) to tier 1.

3.08 What preliminary evidence is there of the impact of the HCH program on health outcomes?

Among HCH patients with type 2 diabetes who had records of blood pressure and HbA1c tests, the proportion of patients achieving targeted blood pressure (<130/80mmHg) and targeted glycaemic control (HbA1c ≤7%) within the two years following enrolment did not change.

Practices reported that the main way in which patient outcomes were improved was through chronic disease management, which included patient outreach and recall systems. These systems played a significant part in improving patient compliance with medications and disease-specific cycles of care documented in their care plans. Practices reported that patients had improved blood pressure and HbA1c, and in some instances this improvement was evidenced by the patient being re-stratified to a lower risk tier. There were also mentions that HCH patients had avoided hospitalisation by having a model of care that allowed them to call and discuss issues with the HCH nurse, although there was no detectable effect of HCH compared with comparator patients using the linked data.

While practices reported a perceived improvement in patient outcomes overall, there were concerns that aspects of the model may have led to poorer outcomes for some patients. Practices identified enrolling patients with a specific GP limited options for patients in certain circumstances. For example, limited availability of a GP due to planned leave or other reasons meant that patients had to wait longer to see the GP rather than booking in with another GP at the practice. Practices also raised negative impacts of telehealth as a form of care delivery. While respondents commented on the patient and practice convenience of telehealth, some had concerns about the potential for missed diagnoses resulting from increased use of telehealth. Lastly, practices also suggested that the increase in administrative work associated with HCH, including the shared care platforms, may have drawn time away from patient care and improved patient outcomes.

Many of the practices interviewed felt it was still too early to tell whether patients' health had improved as a result of the changes they made as a HCH, and a few felt it had made little to no difference.

These analyses are described in more detail in Chapter 15 (p. 173), Chapter 17 (p. 216) and Chapter 18 (p. 220).

Key evaluation question 4: What are the financial effects of the HCH model on governments, providers and individuals?

4.01 What is the cost to governments of care for HCH enrolled patients?

From the perspective of government expenditures, the impact of the HCH program was to increase overall expenditures on Medicare services, despite substantial falls in fee-for-service payments. This was due to outlays related to the bundled payment. Although the impact was higher overall, Medicare expenditures gradually fell over time on a per-patient basis. There were no impacts on government expenditures on PBS medicines or hospital admissions.

For further analysis see Chapter 19 (p. 248).

4.02 What is the cost to governments of care for HCH enrolled patients taking into consideration the net of savings due to reduced hospitalisation and other health services? 4.03 Is the current HCH model financially sustainable? 4.06 Does the HCH program deliver value for money?

Overall, the government spent $84.7 million on the HCH program. The evaluation was not able to reach a conclusion about the value-for-money of the program.

For further analysis see Chapter 19 (p. 248).

4.04 What resources are required to make HCH succeed, and how can these be efficiently used?

Not investigated.

4.05 What will be the financial impact of extending the model to practices across Australia?

Not investigated.

4.07 What are the costs to practices of delivering HCH programs? Is this matched by HCH payments? Is the current HCH model financially sustainable for practices?

For practices, we first measured changes in income derived from fee-for-service delivery of Medicare services. The results showed that as expected, this declined substantially on a per-patient basis, and continued to fall over the follow-up period. This income was more than replaced by the bundled payment, suggesting that while practices had administrative problems with the payment, on average it supported practices' financial sustainability.

For further analysis see Chapter 19 (p. 248).

4.08 What is the impact of HCH enrolment on patient, carer and family out-of-pocket costs?

For patients, the HCH program had little impact on out-of-pocket costs for Medicare services, and no impact on patient costs for PBS medicines.

For further analysis see Chapter 19 (p. 248).

Key evaluation questions 5–8: Community pharmacy trial

Key question 5: Is community pharmacy a beneficial component of the broader HCH coordinated care model and should it be included as part of any future roll out?

Similar to HCHs, some pharmacies participated the community pharmacy trial in HCH because they were already providing similar services to those expected as part of the initiative, and they thought that the model is the future of pharmacy. Another reason for participating was the benefits of the initiative for patients. For example, pharmacists felt that they have more time to devote to patients than do GPs and are more accessible. Therefore, they felt that they could fill gaps in care that may be overlooked by GPs and reduce the burden on GPs. They were also motivated to participate to strengthen their relationships with HCH practices.

All pharmacies had to prepare for the trial in some way, at minimum, establish software and processes to register patients, record key information and receive payments. Some had to make more extensive changes that included hiring additional staff or making changes to the role of staff and creating a private physical space to consult with patients.

While 689 pharmacies registered to participate in the trial, only 95 had undertaken a consultation with at least one patient. These pharmacies each consulted with 16 patients on average (although more than half of the pharmacies had consulted with less than 5 patients). Patients had been referred from 40 of the 165 HCH practices that enrolled more than one patient.

The number of patients receiving an initial review was 1,531. Of these, 845 had one follow-up, 588 had two, 402 had three and 150 had four. With some initial consultations not occurring until 2021, there were limited opportunities for follow-up reviews for some patients as part of the trial.

The main service provided by pharmacists to HCH patients were medication reviews and support services such as dose administration aids, blood pressure monitoring, medical device education and training, and blood glucose monitoring.

Pharmacists completing follow-ups with patients reported they would check in with the patient, reinforce what was discussed in the initial consultation and discuss medication changes, what has been beneficial for the patient, treatment goals, patient compliance and patient outcomes related to receiving education.

Pharmacists reported that COVID-19 affected both their capacity to provide services to HCH patients due to competing demands as well as not having access to patients due to lockdowns.

Pharmacists largely reported positive experiences with the community pharmacy trial. Benefits included practising what they are professionally trained to do and making a positive difference to patients' health.

The literature points to the importance of creating opportunities to build relationships and trust between GPs/practices and pharmacists. Much of this literature relates to models in which the pharmacist is embedded in the practice and practice staff have an opportunity to observe the type of input that the pharmacist could have for patients. Models are required that are reflective of the structure of general practice and community pharmacy in Australia, and that promote better communication, building of trust and optimal use of resources.

Chapter 23 (p. 305) provides further discussion of these issues.

Key question 6: Do patients who received medication management services as part of the HCH trial experience better health outcomes than patients who did not?

The number of patients receiving an initial review was 1,531. Of these, 845 had one follow-up, 588 had two, 402 had three and 150 had four. With some initial consultations not occurring until 2021, there were limited opportunities for follow-up reviews for some patients.

Most patients interviewed had limited to no awareness of the community pharmacy trial and had not had their medications reviewed by a pharmacist.

Some patients stated that they have had medication reviews at home or at their local pharmacy. However, these may have been independent of the community pharmacy in HCH trial. Nevertheless, patients reported that having their medication reviewed by their pharmacist was largely a positive experience and that their pharmacist was able to adjust their medications or provide education.

Pharmacists involved in the trial indicated that most patients were receptive to services from them as part of the trial. In some instances, there were HCH patients who felt that the service wasn't necessary.

According to patients' self-report, they had fewer hospitalisations in the six-month period before the later assessments compared with the initial assessments, but this was not statistically significant. There were however statistically significant improvements in the average patients' medication adherence score and in the pharmacists' belief of patients' adherence to medication regime for tablets or capsules.

The most common goals agreed to in the patients' medication management plan (MMP) were "improved patient knowledge about their medicines leading to improved medication use and disease self-management" (45%) and "improved medication adherence" (43%), but these varied substantially between tiers.

For most patients' goals relating to their medication management, at least two people were identified as being responsible for helping the patient achieve their goal, most commonly the carer/patient and pharmacist. Carers/patients were considered mainly responsible where the goal was to improve technique of medication devices. Pharmacists were considered responsible for goals relating to improved medication adherence and improved knowledge. Although GPs were less likely to be considered responsible for a goal, they were considered responsible for goals relating to optimising dose and reducing side effects.

The most common outcomes for the first review included reconciliation of the medication list, medicine education, and the pharmacist providing the patient with disease state information. The same outcomes were also commonly reported for all the subsequent reviews.

The community pharmacists interviewed generally considered that the trial was well received by patients, and in their view, patients' compliance with and general knowledge of their medications improved. Some pharmacists reported improved communications with GPs and other, which benefitted their patients.

While the literature shows a potential for improved patient outcomes with pharmacist involvement in PCMHs, the studies vary widely in terms of the nature of pharmacists' involvement. For example, many of the studies involved locating the pharmacist onsite, embedded into the practice team, which is a different set-up to the HCH model.

Chapter 22 (p. 290) provides further description of these issues.

Key question 7: What was the level of engagement between HCH practices and community pharmacy (care coordination)?

The literature emphasises trust between GPs/practices and pharmacists for successful referral of patients and shared care. The HCH model didn't involve embedding pharmacists in practices nor promoted a relationship between a single pharmacy and a HCH practice. While it is important for patients to have choice, the model also meant that practices had to maintain relationships with multiple pharmacies, diluting opportunities for establishing trust. The evaluation found that where pharmacies that had long-standing relationships with HCHs, they tended to have a higher number of referrals. This was particularly the case where the pharmacy was within the same building or next door to a practice. However, there were instances where practices referred to a pharmacy that they didn't have a previous relationship with, and this was made possible by pharmacists proactively contacting practices in their area to let them know about their services and the benefits for patients.

Many practices reported barriers with referring patients to community pharmacies. These related to the time investment to educate and engage community pharmacies, problems with shared care planning software, needing to be convinced about the benefits of what pharmacists had to offer their patients, limited patient understanding of the model and the small number of HCH patients in their practice. Also, some practices already had access to a pharmacist through other arrangements or had arrangements with community pharmacists pre-dating of the trial.

Other reasons that practices didn't refer patients was that they were unaware of the community pharmacy trial, they were concerned about community pharmacists working outside of their scope or providing unnecessary services to patients or perceived the level of remuneration for pharmacies to be too high for trial services. In relation to the latter, they perceived that although paid on a per-session basis, and follow-up sessions were only scheduled where they deemed to be of benefit to the patient, that the overall amount for pharmacies for four sessions was almost as high as the bundled payment for practices but involved much less work.

Where pharmacies had a pre-existing relationship with a practice, when an issue arose, they could directly contact the GP. In a few instances pharmacists reported that the trial enhanced their communications with the practice. Others struggled with communicating with GPs and sharing care. They felt that there wasn't enough trust established through the process to effectively collaborate with GPs.

Where pharmacies had strong relationships with HCH practices, they reported receiving acknowledgment from the GP/practice about their medication recommendations for a patient. Otherwise, they received no feedback and didn't know whether their recommendations had even been read.

While some practices felt that pharmacists had a vital role in patient care and chronic disease management and saw value in the community pharmacy trial, many were unaware of the trial.

Given the issues observed in the trial, it could be expected that practices would feel most comfortable initially with pharmacies focusing on broad education-based interventions and moving to clinical interventions only after a closer relationship has been established. A greater focus on establishing clear roles and responsibilities and having these agreed between the practice and pharmacist is also suggested by the literature.

Chapter 23 (p. 305) provides further discussion of these issues.

Key question 8: Is the inclusion of a pharmacy component in HCH financially viable?

Although pharmacists were satisfied with the fees paid to them for their services to HCH patients, due to the very low number of referrals, only a small amount of the funds allocated to the trial were used. The impact of community pharmacy on quality use of medicines and cost savings arising from this could not be determined due to low participation in the trial.

References

Albanese, N. P., Pignato, A. M., & Monte, S. V. (2017). Provider Perception of Pharmacy Services in the Patient-Centered Medical Home. *Journal of pharmacy practice, 30*(6), 612-620.

Arenz, B. J., Diez, H. L., Bostwick, J. R., Kales, H. C., Zivin, K., Dalack, G. W., Fluent, T. E., Standiford, C. J., Stano, C., & Mi Choe, H. (2016). Effectively implementing FDA medication alerts utilizing patient centered medical home clinical pharmacists. *Healthcare (Amsterdam, Netherlands), 4*(1), 69-73.

Augustine, M. R., Nelson, K. M., Fihn, S. D., & Wong, E. S. (2019). Patient-Reported Access in the Patient-Centered Medical Home and Avoidable Hospitalizations: an Observational Analysis of the Veterans Health Administration [Observational Study]. *Journal of general internal medicine, 34*(8), 1546-1553.

Australian Association of Practice Management. (2017a). *Health Care Home Activity Monitoring Guide October 2017*. https://www.aapm.org.au/Portals/1/documents/Health-Care-Homes/HCH_Activity_Monitoring_Guide_Oct_2017.pdf

Australian Association of Practice Management. (2017b). *Webinar: AAPM Health Care Homes Activity Monitoring Guide*. Melbourne. Retrieved 13 September from https://www.aapm.org.au/Knowledge-Hub/Healthcare-Homes

Australian Bureau of Statistics. (2022). Provisional Mortality Statistics methodology.

Australian Government Department of Health. (2016a). *Factsheet: Patient eligibility* http://www.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes

Australian Government Department of Health. (2016b). *Factsheet: Stage one modelling* http://www.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes

Australian Government Department of Health. (2016c). *Health Care Homes announcement media release* http://pandora.nla.gov.au/pan/154649/20160508-0839/www.pm.gov.au/media/2016-03-31/healthier-medicare-chronically-ill-patients.html

Australian Government Department of Health. (2016d). *Health Care Homes Grant Guidelines 4 November 2016*

Australian Government Department of Health. (2017a). *Health Care Homes Patient Information Statement* https://www1.health.gov.au/internet/main/publishing.nsf/Content/C6EB6F07C8F62954CA2581A90009CA75/$File/HCH%20Patient%20Consent%20Form%20-%20October%202018.pdf

Australian Government Department of Health. (2017b). *Minimum requirements of shared care plans* http://www.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-cp/$File/Minimum%20requirements%20shared%20care%20plans_December.pdf

Australian Government Department of Health. (2017c). *Patient Handbook* https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-more-information

Australian Government Department of Health. (2018a). *Community Pharmacy in Health Care Homes Trial Program*. Retrieved October 2019 from https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-care-

homes-cp/$File/Community-Pharmacy-in-Health-Care-Homes-Trial-Program-factsheet-Dec-2018.pdf

Australian Government Department of Health. (2018b). *Health Care Home Funding Assurance Toolkit March 2018*. https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-assurance-compliance

Australian Government Department of Health. (2018c). *Health Care Homes Clinical Reference Group Q&As*.

Australian Government Department of Health. (2018d). *Health Care Homes Handbook for general practices and Aboriginal Community Controlled Health Services Version 1.4 August 2018*

Australian Government Department of Health. (2019a). *Health Care Homes—Health professionals*. Retrieved 7/10/2019 from https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-professional

Australian Government Department of Health. (2019b). *Health Care Homes Handbook for general practices and Aboriginal Community Controlled Health Services Version 1.7 February 2019*. https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-cp/$File/HCH-Handbook-Feb-2019.pdf

Australian Institute of Health and Welfare. (2019). *National Healthcare Agreement: PI 18–Selected potentially preventable hospitalisations, 2019 [METeOR 698954]*. https://meteor.aihw.gov.au/content/index.phtml/itemId/698954

Aysola, J., Rhodes, K. V., & Polsky, D. (2015). Patient-centered medical homes and access to services for new primary care patients. *Medical care*, *53*(10), 857-862.

Barker, I., Steventon, A., & Deeny, S. R. (2017). Association between continuity of care in general practice and hospital admissions for ambulatory care sensitive conditions: cross sectional study of routinely collected, person level data. *BMJ*, *356*.

Baxter, L., & Nash, D. B. (2013). Implementing the Patient-Centered Medical Home Model for Chronic Disease Care in Small Medical Practices: Practice Group Characteristics and Physician Understanding [Article]. *American Journal of Medical Quality*, *28*(2), 113-119.

Beal, A., Hernandez, S., & Doty, M. (2009). Latino access to the patient-centered medical home. *Journal of general internal medicine*, *24 Suppl 3*, 514-520.

Bergman, A. A., Jaynes, H. A., Gonzalvo, J. D., Hudmon, K. S., Frankel, R. M., Kobylinski, A. L., & Zillich, A. J. (2016). Pharmaceutical Role Expansion and Developments in Pharmacist-Physician Communication. *Health communication*, *31*(2), 161-170.

Berwick, D. M., Nolan, T. W., & Whittington, J. (2008). The triple aim: care, health, and cost. *Health Aff (Millwood)*, *27*(3), 759-769.

Bodenheimer, T., Ghorob, A., Willard-Grace, R., & Grumbach, K. (2014). The 10 Building Blocks of High-Performing Primary Care. *Annals of family medicine*, *12*(2), 166-171.

Bodenheimer, T., & Sinsky, C. (2014). From triple to quadruple aim: care of the patient requires care of the provider. *Ann Fam Med*, *12*(6), 573-576.

Boivin, A., Lehoux, P., Lacombe, R., Burgers, J., & Grol, R. (2014). Involving patients in setting priorities for healthcare improvement: a cluster randomized trial. *Implementation science : IS*, *9*, 24.

Brunisholz, K. D., Olson, J., Anderson, J. W., Hays, E., Tilbury, P. M., Winter, B., Rickard, J., Hamilton, S., & Parkin, G. (2018). "Pharming out" support: a promising approach to integrating clinical pharmacists into established primary care medical home practices. *The Journal of international medical research, 46*(1), 234-248.

Canadian Institute for Health Information (CIHI). (2022). *Population Grouping Methodology*. CIHI. Retrieved 16/5/2022 from https://www.cihi.ca/sites/default/files/document/infosheet_popgroupmethod_en_web_0.pdf

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly, 35*(1), 128-152.

Consumers Health Forum of Australia. (2019). *Patient Activation in Australians with Chronic Illness – Survey Results*. https://chf.org.au/sites/default/files/20191030_rpt_patient_activation_survey_report_final.pdf

Damanpour, F. (1991). Organizational Innovation: A Meta-Analysis of Effects of Determinants and Moderators. *The Academy of Management Journal, 34*(3), 555-590.

Damschroder, L. J., Aron, D. C., Keith, R. E., Kirsh, S. R., Alexander, J. A., & Lowery, J. C. (2009). Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implementation Science, 4*(1), 50.

Devlin, N. J., & Krabbe, P. F. (2013). The development of new research methods for the valuation of EQ-5D-5L. *Eur J Health Econ, 14 Suppl 1*, S1-3.

Dopson, S., FitzGerald, L., Ferlie, E., Gabbay, J., & Locock, L. (2010). No magic targets! Changing clinical practice to become more evidence based. *Health Care Manage Rev, 35*(1), 2-12.

Eccles, M. P., & Mittman, B. S. (2006). Welcome to Implementation Science. *Implementation Science, 1*(1), 1.

Edwards, H. D., Webb, R. D., Scheid, D. C., Britton, M. L., & Armor, B. L. (2012). A Pharmacist Visit Improves Diabetes Standards in a Patient-Centered Medical Home (PCMH) [Article]. *American Journal of Medical Quality, 27*(6), 529-534.

Farrell, B., Ward, N., Dore, N., Russell, G., Geneau, R., & Evans, S. (2013). Working in interprofessional primary health care teams: What do pharmacists do? [Article]. *Research in Social & Administrative Pharmacy, 9*(3), 288-301.

Fifield, J., Forrest, D. D., Martin-Peele, M., Burleson, J. A., Goyzueta, J., Fujimoto, M., & Gillespie, W. (2013). A randomized, controlled trial of implementing the patient-centered medical home model in solo and small practices. *J Gen Intern Med, 28*(6), 770-777.

Fitzgerald, L., & Dopson, S. (2006). Knowledge, credible evidence, and utilization. In S. Dopson & L. FitzGerald (Eds.), *Knowledge to action? Evidence-based health care in context*. Oxford University Press.

Gibbons, C. J., Small, N., Rick, J., Burt, J., Hann, M., & Bower, P. (2017). The Patient Assessment of Chronic Illness Care produces measurements along a single dimension: results from a Mokken analysis. *Health Qual Life Outcomes, 15*(1), 61.

Glasgow, R. E., Wagner, E. H., Schaefer, J., Mahoney, L. D., Reid, R. J., & Greene, S. M. (2005). Development and Validation of the Patient Assessment of Chronic Illness Care (PACIC) [Journal]. *Medical Care, 43*, 436-444.

Goldberg, D. G., Beeson, T., Kuzel, A. J., Love, L. E., & Carver, M. C. (2013). Team-Based Care: A Critical Element of Primary Care Practice Transformation [Article]. *Population health management*, *16*(3), 150-156.

Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank Q, 82*(4), 581-629.

Grol, R. P., Bosch, M. C., Hulscher, M. E., Eccles, M. P., & Wensing, M. (2007). Planning and studying improvement in patient care: the use of theoretical perspectives. *Milbank Q, 85*(1), 93-138.

Gustafson, D. H., Sainfort, F., Eichler, M., Adams, L., Bisognano, M., & Steudel, H. (2003). Developing and testing a model to predict outcomes of organizational change. *Health Serv Res, 38*(2), 751-776.

Gustafson, D. H., Sainfort, F., Eichler, M., Adams, L., Bisognano, M., & Steudel, H. (2003). Developing and Testing a Model to Predict Outcomes of Organizational Change [https://doi.org/10.1111/1475-6773.00143]. *Health Services Research*, *38*(2), 751-776.

Hawes, E. M., Pinelli, N. R., Sanders, K. A., Lipshutz, A. M., Tong, G., Sievers, L. S., Chao, S., & Gwynne, M. (2018). Post-Hospital Discharge Care: A Retrospective Cohort Study Exploring the Value of Pharmacist-Enhanced Care and Describing Medication-Related Problems. *North Carolina medical journal, 79*(1), 4-13.

Health Policy Analysis. (2019a). *Evaluation of the Health Care Homes program – Evaluation plan (Updated 2019)*. https://www1.health.gov.au/internet/main/publishing.nsf/Content/Evaluation-of-the-Health-Care-Homes-Program

Health Policy Analysis. (2019b). *Evaluation of the Health Care Homes program – Interim evaluation report 2019*. https://www1.health.gov.au/internet/main/publishing.nsf/Content/Evaluation-of-the-Health-Care-Homes-Program

Health Policy Analysis. (2020). *Evaluation of the Health Care Homes program – Interim evaluation report 2020*. https://www1.health.gov.au/internet/main/publishing.nsf/Content/Evaluation-of-the-Health-Care-Homes-Program

Helfrich, C. D., Weiner, B. J., McKinney, M. M., & Minasian, L. (2007). Determinants of implementation effectiveness: adapting a framework for complex innovations. *Med Care Res Rev, 64*(3), 279-303.

Hemming, K., Haines, T. P., Chilton, P. J., Girling, A. J., & Lilford, R. J. (2015). The stepped wedge cluster randomised trial: rationale, design, analysis, and reporting. *BMJ, 350*, h391.

Herdman, M., Gudex, C., Lloyd, A., Janssen, M., Kind, P., Parkin, D., Bonsel, G., & Badia, X. (2011). Development and preliminary testing of the new five-level version of EQ-5D (EQ-5D-5L). *Qual Life Res, 20*(10), 1727-1736.

Hibbard, J. H., Mahoney, E. R., Stockard, J., & Tusler, M. (2005). Development and testing of a short form of the patient activation measure. *Health Serv Res, 40*(6 Pt 1), 1918-1930.

Hwang, A. Y., Gums, T. H., & Gums, J. G. (2017). The benefits of physician-pharmacist collaboration. *Journal of Family Practice, 66*(12), E1-E8.

Independent Hospital Pricing Authority. (2019). *National Weighted Activity Unit (NWAU) calculators*. Retrieved June from https://www.ihpa.gov.au/what-we-do/national-weighted-activity-unit-nwau-calculators

Jackson, G. L., Powers, B. J., Chatterjee, R., Bettger, J. P., Kemper, A. R., Hasselblad, V., Dolor, R. J., Julian Irvine, R., Heidenfelder, B. L., Kendrick, A. S., Gray, R., & Williams Jr, J. W. (2013). The patient-centered medical home: A systematic review. *Annals of internal medicine, 158*(3), 169-178.

John, J. R., Jani, H., Peters, K., Agho, K., & Tannous, W. K. (2020). The Effectiveness of Patient-Centred Medical Home-Based Models of Care versus Standard Primary Care in Chronic Disease Management: A Systematic Review and Meta-Analysis of Randomised and Non-Randomised Controlled Trials [Review]. *International journal of environmental research and public health, 17*(18), 42, Article 6886.

Johns Hopkins ACG® System. (2021). *The Johns Hopkins ACG System*. Retrieved October from https://www.hopkinsacg.org/resource-center/#documentation

Joshy, G., Korda, R., Abhayaratna, W., Soga, K., & Banks, E. (2015). Categorising major cardiovascular disease hospitalisations from routinely collected data. *Public Health Research & Practice*.

Kennelty, K. A., Polgreen, L. A., & Carter, B. L. (2018). Team-Based Care with Pharmacists to Improve Blood Pressure: a Review of Recent Literature. *Current Hypertension Reports, 20*(1), Article 1.

Kern, L. M., Edwards, A., & Kaushal, R. (2014). The Patient-Centered Medical Home, Electronic Health Records, and Quality of Care [Article]. *Annals of internal medicine, 160*(11), 741-+.

Khan, S. (2021). Measuring context: balancing implementation research and practice. *Implementation in Action Bulletin*.

Khanna, S., Rolls, D. A., Boyle, J., Xie, Y., Jayasena, R., Hibbert, M., & Georgeff, M. (2019a). A risk stratification tool for hospitalisation in Australia using primary care data. *Sci Rep, 9*(1), 5011.

Khanna, S., Rolls, D. A., Boyle, J., Xie, Y., Jayasena, R., Hibbert, M., & Georgeff, M. (2019b). A risk stratification tool for hospitalisation in Australia using primary care data [Research Support, Non-U.S. Gov't]. *Scientific Reports, 9*(1), 5011.

Kimberly, J. R., & Evanisko, M. J. (1981). Organizational Innovation: The Influence of Individual, Organizational, and Contextual Factors on Hospital Adoption of Technological and Administrative Innovations. *The Academy of Management Journal, 24*(4), 689-713.

Kitson, A., Harvey, G., & McCormack, B. (1998). Enabling the implementation of evidence based practice: a conceptual framework. *Qual Health Care, 7*(3), 149-158.

Klein, K. J., & Sorra, J. S. (1996). The Challenge of Innovation Implementation. *The Academy of Management Review, 21*(4), 1055-1080.

Kocarnik, B. M., Liu, C.-F., Wong, E. S., Perkins, M., Maciejewski, M. L., Yano, E. M., Au, D. H., Piette, J. D., & Bryson, C. L. (2012). Does the presence of a pharmacist in primary care clinics improve diabetes medication adherence? *BMC health services research, 12*, 391.

Lukas, C. V., Holmes, S. K., Cohen, A. B., Restuccia, J., Cramer, I. E., Shwartz, M., & Charns, M. P. (2007). Transformational change in health care systems: an organizational model. *Health Care Manage Rev, 32*(4), 309-320.

MacColl Center for Health Care Innovation at Group Health Research Institute, & Qualis Health. (2014). *The Patient-Centred Medical Home Assessment Version 4.0.*

MacColl Center for Health Care Innovation at Group Health Research Institute, Qualis Health, WentWest, & AGPAL. (2017). *Health Care Home Assessment*.

Matzke, G. R., Moczygemba, L. R., Williams, K. J., Czar, M. J., & Lee, W. T. (2018). Impact of a pharmacist-physician collaborative care model on patient outcomes and health services utilization. *American journal of health-system pharmacy : AJHP : official journal of the American Society of Health-System Pharmacists, 75*(14), 1039-1047.

McGough, P. M., Norris, T. E., Scott, J. D., & Burner, T. G. (2017). Meeting the Demands of the Affordable Care Act: Improving Access to Primary Care. *Population health management, 20*(2), 87-89.

McManus, L. S., Dominguez-Cancino, K. A., Stanek, M. K., Leyva-Moral, J. M., Bravo-Tare, C. E., Rivera-Lozada, O., & Palmieri, P. A. (2021). The Patient-centered Medical Home as an Intervention Strategy for Diabetes Mellitus: A Systematic Review of the Literature. *Curr Diabetes Rev, 17*(3), 317-331.

McMullen, C. K., Schneider, J., Firemark, A., Davis, J., & Spofford, M. (2013). Cultivating engaged leadership through a learning collaborative: lessons from primary care renewal in Oregon safety net clinics. *Annals of family medicine, 11 Suppl 1*, S34-40.

Meredith, L. S., Hackbarth, N. S., Darling, J., Rodriguez, H. P., Stockdale, S. E., Cordasco, K. M., Yano, E. M., & Rubenstein, L. V. (2015). Emotional Exhaustion in Primary Care During Early Implementation of the VA's Medical Home Transformation Patient-aligned Care Team (PACT) [Article]. *Medical care, 53*(3), 253-260.

Min, L., Cigolle, C. T., Bernstein, S. J., Ward, K., Moore, T. L., Jinkyung, H., & Blaum, C. S. (2017). Diabetes Care Improvement in Pharmacist-Versus Nurse-Supported Patient-Centered Medical Homes. *American Journal of Managed Care, 23*(11), e374-e381.

Murray, C. J. L., & Evans, D. B. (2003). Health systems performance assessment: Goals, framework and overview. In C. J. L. Murray & D. B. Evans (Eds.), *Health systems performance assessment: Debates, methids and empiricism* (pp. 3-18). WHO.

NPS MedicineWise. (2021). *General Practice Insights Report July 2019–June 2020 including analyses related to the impact of COVID-19*. https://www.nps.org.au/assets/NPS/pdf/GPIR-Report-2019-20.pdf

O'Neill, J. L., Cunningham, T. L., Wiitala, W. L., & Bartley, E. P. (2014). Collaborative hypertension case management by registered nurses and clinical pharmacy specialists within the Patient Aligned Care Teams (PACT) model. *Journal of general internal medicine, 29 Suppl 2*, S675-681.

Oliver-Baxter, J., Bywood, P., & Erny-Albrecht, K. (2015). *Predictive risk models to identify people with chronic conditions at risk of hospitalisation* (PHCRIS Policy Issue Review, Issue. https://dspace.flinders.edu.au/xmlui/bitstream/handle/2328/36226/PIR_Predictive%20risk%20model.pdf?sequence=1&isAllowed=y

Page, A. T., Falster, M. O., Litchfield, M., Pearson, S. A., & Etherton-Beer, C. (2019). Polypharmacy among older Australians, 2006–2017: a population-based study. *Med J Aust 211*(2), 71-75.

Peikes, D., Zutshi, A., Genevro, J. L., Parchman, M. L., & Meyers, D. S. (2012). Early evaluations of the medical home: building on a promising start. *The American journal of managed care, 18*(2), 105-116.

Pereira Gray, D. J., Sidaway-Lee, K., White, E., Thorne, A., & Evans, P. H. (2018). Continuity of care with doctors-a matter of life and death? A systematic review of continuity of care and mortality. *BMJ Open, 8*(6), e021161.

Peterson, J., Hinds, A., Garza, A., Barner, J., Hill, L., Nguyen, M., Lai, P., & Gums, T. (2020). Impact of Physician-Pharmacists Covisits at a Primary Care Clinic in Patients With Uncontrolled Diabetes. *Journal of pharmacy practice, 33*(3), 321-325.

Pharmaceutical Society of Australia. (2018a). *Community Pharmacy in Health Care Homes Trial Program training modules now available*. Retrieved June 2021 from https://www.psa.org.au/community-pharmacy-in-health-care-homes-trial-program-training-modules-now-available/

Pharmaceutical Society of Australia. (2018b). *Guidelines for pharmacists participating in the Community Pharmacy in Health Care Homes Trial Program*. https://my.psa.org.au/servlet/fileField?entityId=ka10o000000U2NvAAK&field=PDF_File_Member_Content__Body__s

Primary Health Care Advisory Group. (2015). *Better Outcomes for People with Chronic and Complex Health Conditions: Final Report*. http://www.health.gov.au/internet/main/publishing.nsf/Content/primary-phcag-report

Romanelli, R. J., Leahy, A., Jukes, T., & Ishisaka, D. Y. (2015). Pharmacist-led medication management program within a patient-centered medical home. *American journal of health-system pharmacy : AJHP : official journal of the American Society of Health-System Pharmacists, 72*(6), 453-459.

Rycroft-Malone, J., Kitson, A., Harvey, G., McCormack, B., Seers, K., Titchen, A., & Estabrooks, C. (2002). Ingredients for change: revisiting a conceptual framework. *Qual Saf Health Care, 11*(2), 174-180.

Schmittdiel, J., Mosen, D. M., Glasgow, R. E., Hibbard, J., Remmers, C., & Bellows, J. (2008). Patient Assessment of Chronic Illness Care (PACIC) and improved patient-centered outcomes for chronic conditions. *J Gen Intern Med, 23*, 77-80.

Schuttner, L., Gunnink, E., Sylling, P., Taylor, L., Fihn, S. D., & Nelson, K. (2020). Components of the Patient-Centered Medical Home Associated with Perceived Access to Primary Care. *Journal of general internal medicine, 35*(6), 1736-1742.

Singh, J., Dahrouge, S., & Green, M. E. (2019). The impact of the adoption of a patient rostering model on primary care access and continuity of care in urban family practices in Ontario, Canada. *BMC family practice, 20*(1), 52.

Stafford, R. A., Garrett, L. N., Bates, K. A., Diemer, T. B., Thomas, J. L., Smith, M. G., Teeter, B. S., & Curran, G. M. (2020). Development and implementation of a collaboration between a patient-centered medical home and community pharmacy. *Journal of the American Pharmacists Association, 60*(1), 122-129.

Starfield, B., Weiner, J., Mumford, L., & Steinwachs, D. (1991). Ambulatory care groups: a categorization of diagnoses for research and management. *Health Serv Res, 26*(1), 53-74.

Stiefel, M., & Nolan, K. (2012). *A Guide to Measuring the Triple Aim: Population Health, Experience of Care, and Per Capita Cost. IHI Innovation Series white paper*. https://www.jvei.nl/wp-content/uploads/A-Guide-to-Measuring-the-Triple-Aim.pdf

Stout, S., Zallman, L., Arsenault, L., Sayah, A., & Hacker, K. (2017). Developing High-Functioning Teams: Factors Associated With Operating as a "Real Team" and Implications for Patient-Centered Medical Home Development. *Inquiry : a journal of medical care organization, provision and financing, 54*, 46958017707296.

The Pharmacy Guild of Australia. (2020a). *Brief for HCH PHN Facilitators: Overview of medicine review services*.

The Pharmacy Guild of Australia. (2020b). *Community Pharmacy in Health Care Homes Trial Program Trial Program Rules*. http://6cpa.com.au/wp-content/uploads/6CPA_CommunityPharmacyinHeathCareHomes-Program-Rules_Jan2020.pdf

van den Berk-Clark, C., Doucette, E., Rottnek, F., Manard, W., Prada, M. A., Hughes, R., Lawrence, T., & Schneider, F. D. (2018). Do Patient-Centered Medical Homes Improve Health Behaviors, Outcomes, and Experiences of Low-Income Patients? A Systematic Review and Meta-Analysis. *Health Services Research*, *53*(3), 1777-1798.

Veet, C. A., Radomski, T. R., D'Avella, C., Hernandez, I., Wessel, C., Swart, E. C. S., Shrank, W. H., & Parekh, N. (2020). Impact of Healthcare Delivery System Type on Clinical, Utilization, and Cost Outcomes of Patient-Centered Medical Homes: a Systematic Review. *Journal of general internal medicine*, *35*(4), 1276-1284.

Wagner, E. H., Gupta, R., & Coleman, K. (2014). Practice transformation in the safety net medical home initiative: A qualitative look. *Medical care*, *52*(Supplement 4), S18-S22.

Wagner, E. H., Gupta, R., & Coleman, K. (2014). Practice transformation in the safety net medical home initiative: a qualitative look. *Medical care*, *52*(11 Suppl 4), S18-22.

Wagner, K. K., Austin, J., Toon, L., Barber, T., & Green, L. A. (2019). Differences in Team Mental Models Associated With Medical Home Transformation Success. *Annals of family medicine*, *17*(Suppl 1), S50-S56.

Walston, S. L., Kimberly, J. R., & Burns, L. R. (2001). Institutional and economic influences on the adoption and extensiveness of managerial innovation in hospitals: The case of reengineering. *Med Care Res Rev*, *58*(2), 194-228; discussion 229-133.

Western HARP. (2009). *Summary: HARP risk calculator*. Retrieved 10 September from https://adma.org.au/download/western-harp-risk-calculator/

Williams, J. W., Jackson, G. L., Powers, B. J., Chatterjee, R., Bettger, J. P., Kemper, A. R., Hasselblad, V., Dolor, R. J., Irvine, R. J., Heidenfelder, B. L., Kendrick, A. S., & Gray, R. (2012). Closing the quality gap: revisiting the state of the science (vol. 2: the patient-centered medical home). *Evid Rep Technol Assess (Full Rep)*(208.2), 1-210.

World Health Organization. (2000). *The World Health Report 2000. Health Systems: Improving Performance*.

World Health Organization. (2015). *WHO global strategy on people-centred and integrated health services: interim report*. https://apps.who.int/iris/handle/10665/155002