

Australian Government Department of Health

Evaluation of the Health Care Homes program

Interim evaluation report 2019

Volume 1: Summary report

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Acronyms and initialisms

ACCHS	Aboriginal Community Controlled Health Service	
AIHW	Australian Institute of Health and Welfare	
EOI	Expression of interest	
EWG	Evaluation Working Group	
FTE	Full time equivalent	
GP	General practitioner	
HARP	Hospital Admissions Risk Program (tool)	
HCH	Health Care Homes	
HCH-A	Health Care Homes Assessment (tool)	
HPOS	Health Professionals Online Services	
IAG	Implementation Advisory Group	
IT	Information technology	
LHN	Local Hospital Network	
MBS	Medical Benefits Schedule	
ммм	Modified Monash Model (remoteness categorisation)	
PHCAG	Primary Health Care Advisory Group	
PBS	Pharmaceutical Benefits Schedule	
PHN	Primary Health Network	
РСМН	Patient centred medical home	
PRM	Predictive risk model	

RST Risk stratification tool

Introduction

The Health Care Homes (HCH) program was established by the Australian Government in response to the Primary Health Care Advisory Group's (PHCAG's) recommendations for better outcomes for people with chronic and complex health conditions (2015). HCH is a variant of the patient centred medical home (PCMH), focusing on coordinated and comprehensive care that is responsive to patients' needs and preferences. As per PHCAG's principles for HCH and key recommendations, the program has the following features:

- Voluntary enrolment of patients to a practice their health care home nominating a GP as their preferred clinician (HCH principles 1 and 4).
- Tools to identify patients at risk of hospitalisation and stratify them to a complexity tier (key recommendation 1).
- A bundled payment for every enrolled patient based on their tier (for services relating to the patient's chronic conditions), departing from the traditional Medicare fee-forservice model (key recommendation 9).
- Training resources to support transformation of practices towards an HCH model (key recommendations 2 and 8).
- Support for practices to undertake transformation, provided by Primary Health Network (PHN) practice facilitators (a component of the change management required to implement key recommendation 2).
- A system of shared care planning that gives authorised health professionals access to an up-to-date electronic medical record for each enrolled patient (key recommendation 4).
- Data sharing arrangements (HCH principle 7 and key recommendation 13) and an evaluation of the program (key recommendation 15).

These features align with the 10 building blocks of high-performing primary care (Bodenheimer, Ghorob, Willard-Grace, & Grumbach, 2014), which underpin the PCMH model. HCH is also consistent with the quadruple aims: improving patient health, enhancing patient experience, reducing health care costs and improving the work life of providers and staff (Berwick, Nolan and Whittington, 2008; Bodenheimer and Sinsky, 2014).

Practices implementing HCH aim to:

- 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, 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.
- Have a commitment to care which is **high quality and safe**. Care planning and clinical decisions are guided by evidence-based patient health care pathways, appropriate to the patient's needs.

(Primary Health Care Advisory Group, 2015, p. 4).

A trial of the HCH program started amongst Australian primary care practices in late 2017 and will continue through to mid-2021. The Australian Government Department of Health ('the Department') recruited practices to the trial through an expression of interest (EOI). Practices located in 10 PHNs (out of 31 Australia-wide) were invited to apply. The PHNs were selected to maximise geographic and socio-economic diversity amongst the populations represented and leverage chronic disease programs operating in these regions.

The Department established or commissioned infrastructure for the program, including:

- A two-tiered governance structure to provide advice on the implementation consisting of an overarching Implementation Advisory Group (IAG) and working groups.
- A system for registering enrolled patients within the Department of Human Services Health Professional Online Services (HPOS) system.
- A two-step risk stratification tool (RST) to identify patients eligible for HCH and to assign them to payment tiers reflecting their disease complexity and health care needs.
- Operational guidelines for HCHs.
- Training resources.
- Facilitation for practices provided through PHNs.
- Evaluation of the program.

The participating PHNs also created infrastructure to support the program, including regional governance groups.

In August 2018, under the Sixth Community Pharmacy Agreement, the Government dedicated funds for HCH patients to receive additional medication management services from community pharmacists, including:

- Medication reconciliation and assessing the patient's medicines regimen.
- Identifying any potential medication-related issues and agreeing on medication management goals.
- Developing a medication management plan (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.

HCH enrolees access the program through being referred by their HCH to a community pharmacy of their choice.

The HCH evaluation

The Department engaged Health Policy Analysis as the lead for a consortium to evaluate the HCH trial. The consortium includes the Centre for Big Data Research in Health (University of New South Wales), the Centre for Health Economics Research and Evaluation (University of Technology Sydney) and other Australian and international experts. An Evaluation plan (Health Policy Analysis, 2019) was developed as one of the first steps in the evaluation.

The evaluation is seeking to answer the following key questions:

- 1. How was the HCH model implemented and what were the barriers and enablers?
- 2. How does the HCH model change the way practices approach chronic disease management?
- 3. Do patients enrolled in HCH experience better quality care?
- 4. What are the financial effects of the HCH model on governments, providers and individuals?

Additional key questions relating to the community pharmacy component are:

- 5. Is the community pharmacy component beneficial to the broader HCH coordinated care model and should it be included as part of any future roll out?
- 6. Do patients who received medication management services as part of the HCH trial experience better health outcomes than patients who did not?
- 7. What was the level of engagement between HCH practices and community pharmacy (care coordination)?
- 8. Is the inclusion of a pharmacy component in HCH financially viable?

These questions have many dimensions. Therefore, more detailed questions have been developed for each key question and are documented in the Evaluation plan (Health Policy Analysis, 2019).

Mixed methods are being used to evaluate the HCH trial. Qualitative data are being gathered through interviews and focus groups with patients and patients' carers/ families, GPs, other primary care staff, pharmacists and other providers. The interviews and focus groups are being undertaken in 20 locations across Australia. Quantitative data are also being gathered or sourced from existing collections to analyse how things have changed for patients enrolled in the HCH trial and to compare their outcomes with similar patients receiving care from non-HCH practices.

This report

This document is the **Interim evaluation report 2019**, **Volume 1: Summary report**. It is one of four volumes featuring the findings of the evaluation of the HCH trial up to 31 August 2019¹. The volumes are described in Table 1.

Volume	Description	
Volume 1: Summary report	Summarises the findings of the interim evaluation.	
Volume 2: Main report	Presents the findings from the interim evaluation.	
Volume 3: Evaluation progress	Describes progress for the evaluation to September 2019, including progress with acquiring evaluation data and approaches for analysing qualitative and quantitative data.	
Volume 4: Evaluation data supplement	Includes supplementary data to support the findings reported in Volume 2.	

Table 1 – Interim evaluation report 2019: Description of volumes

This interim evaluation report reflects findings on **the establishment phase** of the program and the **early experiences** of practices and their staff, patients and PHNs. It profiles the participating practices and enrolled patients, but these largely reflect their characteristics at the start of the program. Also, the experiences of practices and patients in Aboriginal Community Controlled Health Services (ACCHS) have not been documented as yet. Case studies of two ACCHS in the NT were being undertaken at the time that this report was being drafted, and will be documented in the next evaluation report. This interim report will be followed by a second interim report in late 2020, and a final evaluation report in late 2021. These next reports, in particular the final report, will provide further insights into changes that have happened within practices and patients' experiences and outcomes.

The quantitative and qualitative data used to prepare this report and subsequent evaluation reports are listed below.

Evaluation reports

Interim evaluation report 2019 (this report):

- Patient surveys at entry of HCH (from December 2017 to March 2019): Patient activation, experiences of primary care and coordination of care, health conditions, health status.
- Practice surveys Round 1 (March to June 2018) and Round 2 (November 2018 to March 2019): Characteristics of HCH practices and early experience of HCH implementation.
- Case studies (late 2018): Patient, family, carer and practice experiences in the initial period following commencement of HCH.
- Practice data extracts (up to June 2019): Profile of enrolled patients from practice data, baseline for key measures.
- Selected program data, including practice participation and patient enrolment (up to 31 August 2019).
- Key themes: Practices and GP perspectives on implementation in early stages of HCH. Description and analysis of HCH patient population. Baseline estimates for evaluation measures.

Interim evaluation report 2020 (late 2020):

• Patient surveys Round 4 (late 2019 to early 2020): Changes in patient activation, experiences of primary care and coordination of care, health conditions, health status.

¹ This is the latest date for which findings are reported. Some data end earlier.

- Practice surveys Round 4 (late 2019): Experience of HCH after 1-2 years.
- Case studies (late 2019 to early 2020): Patient family, carer and practice experience of HCH after 1-2 years. Will include case studies of two ACCHS in the NT.
- Practice data extracts (up to June 2020): Changes in key measures after 1-2 years.
- Initial Medical Benefits Schedule (MBS), Pharmaceutical Benefits Scheme (PBS) (up to June 2020) and hospital data (up to June 2018): Patients profiles for HCH and comparator groups, trends in MBS billing prior to and after implementation of HCH.
- Key themes: Practice and GP perspectives on implementation. Patient experience of HCH.

Final evaluation report (late 2021):

- Patient surveys Round 5 (late 2020 to early 2021): Changes in patient activation, experiences of primary care and coordination of care, health conditions, health status.
- Practice and practice staff surveys (late 2020): Experience of HCH implementation, nature of changes introduced and practice/staff assessment of their effect, changes in staff satisfaction.
- Case studies (late 2020 to early 2021): Patient family, carer and practice experiences after 2-3 years of HCH.
- Practice data extracts (up to June 2020): Changes in evaluation measures, including clinical processes and selected clinical outcomes.
- MBS, PBS (up to June 2021) and hospital data (up to June 2020): Comparison of trends for HCH patients and comparator patients for key evaluation measures. Impact of HCH on practice revenues. Early indicators of change in hospitalisation/emergency department attendance.
- Key themes: Practice and GP perspectives on implementation. Viability of approach for practices. Changes in the HCH patient population. Changes in specified measures for HCH and comparator practices and patients.

Key findings

As at 31 August 2019, 131 practices were participating in HCH. This is less than the original target for the HCH program – 200 practices. Another 96 practices had participated in the program at some time but had withdrawn. Most practices that withdrew did not get to the point of enrolling patients. The reasons practices withdrew were mostly to do with staff turnover; lack of commitment to the initiative by a sufficient number of GPs within the practice; and difficulties with the practical aspects of implementing HCH encountered or perceived. In most instances, practices that withdrew supported the HCH principles.

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 program. They also needed to transform their processes for chronic disease management, care planning and the sharing of plans and define new roles for staff.

The time allocated for setting up for HCH was less than five months (in the latter half of 2017). Most practices did not start enrolling patients until 2018. Even at that stage many 'tested the waters' by enrolling a small number of patients before making more concerted efforts. Enrolment was slow in the first half of 2018, then increased through to the end of 2018. The rate slowed again in early 2019, with relatively steady increases through to 30 June 2019, the end of the enrolment period. Some practices were delayed in starting to enrol patients due

to technological challenges. For example, a satisfactory solution for risk stratification was not achieved for ACCHS in the NT until the second half of 2018.

At 31 August 2019, there were 10,161 patients enrolled in HCH. This fell well short of the original estimate of 65,000 enrolees. The original estimates were based on assumptions that were not borne out. The number of patients enrolled per full time equivalent (FTE) GP was 22 rather than the original assumption of 65, and this accounts for half of the shortfall. The number of participating practices (131 vs. 200) and the number of GPs within practices participating (3.5 vs. 5) each accounted for around a quarter of the shortfall.

Practices and PHNs reported that the focus on enrolment in the early phase of HCH competed with transformation; transformation could not begin in earnest until enrolments had been completed. Practices are busy environments in which there is a limit to the level of change they can introduce at any one time.

A key challenge for the program has been for a sufficient number of GPs to be committed to the initiative within practices. But GPs were sometimes unconvinced or cautious. Commitment by practice nurses and practice managers was also vital. Practices that made progress are those that have a core team of GPs, practice nurses and the practice manager steering the implementation.

Staff turnover and organisational change were also challenges for the implementation. As discussed, these were the reasons many practices withdrew. Looking to the future, models such as HCH need to achieve a sufficient scale in terms of staff participation and patients enrolled to have traction and avoid reliance on individuals to drive change.

A practical issue that arose for practices in this program (and continues for some) was how to manage the bundled payment. The available guidance on this issue from groups commissioned by the Department of Health was useful, but for most practices, the systems to support its implementation were insufficient.

The views about the bundled payment remain mixed, with some reporting it has created opportunities for flexibility and change, and others that it is insufficient for managing patients' chronic illnesses. The data to assess the economic viability of the bundled payment are not yet available, but this is one of the questions that the evaluation will address down the track.

Most patients who agreed to enrol in HCH had long-standing relationships with their practice. HCH patients generally rated their primary care practice highly, although there are opportunities for improvement.

HCH patients are generally older than practices' overall patient population, but around 50% are less than 65 years old. Most report multiple chronic conditions, with close to 50% reporting four or more conditions. Across several measures, HCH patients experience health challenges that increase by the risk tier to which they have been assigned.

Interviews with HCH patients revealed a high level of trust in their GP, and the GP's recommendation featured in their decision to enrol. But patients often struggled to understand what HCH would mean for them. They were also concerned that access to their GP would be compromised and need time to develop trust in the broader primary care team. Early indications are that patients appreciate changes that are occurring, for example, participating in lifestyle/ educational groups, greater contact with the practice (usually through a nurse), and being able to get a repeat prescription or annual re-referral to

see a specialist without seeing the GP. Practice staff reported that HCH has helped them to know their patients at a deeper level than previously possible. Carers interviewed were positive about HCH, highlighting that it has improved their experience with the practice and has been beneficial for the person they cared for.

A large body of literature highlights the challenges for health services adopting innovations (Greenhalgh, 2018; Greenhalgh, Robert, Bate et al., 2006; Robert, Greenhalgh, MacFarlane et al., 2010). The challenges derive from the interaction of the nature of the innovation, the characteristics of the adopters, the organisational context and the outer context. HCH is a multi-dimensional innovation involving changes to the way primary care teams work together and with their patients and other providers. It involves implementing new technology, including risk stratification and shared care planning. And it has introduced a new concept to the Australian health care system – patients enrolling with a practice.

Given this complexity it is not surprising that the early experience of implementing HCH aligns with previous experiences of implementing major health programs in Australia and the experiences of other countries implementing HCH-like models (Janamian, Jackson, Glasson et al., 2014; Pearse and Mazevska, 2018). Transformation to an HCH requires changes to many processes. For example, enrolment alone involved: installing software; cleaning up data; identifying patients suitable for HCH; explaining what enrolment means; and registering patients. But even greater challenges exist in changing culture, mindsets, roles and how practice staff work together. While additional resources and support may compress the time needed for the former, the latter need time. Implementation takes time.

The Australian Government recognised this, and in December 2018, extended the time frame for both enrolling patients and for the program overall.

Lessons – Overall implementation

1. For complex programs such as HCH, allow sufficient time for implementation.

Characteristics of HCH practices

Twenty-two practices formally started implementing HCH in October 2017, and a further 151 in December 2017. Other practices subsequently signed up to the program, and some withdrew.

At 31 August 2019, there were 131 practices participating. A further 96 practices had participated in the program at some stage but withdrew (42.3%). Throughout the program most practices that withdrew had not enrolled patients, although since the end of the enrolment period a small number of practices with enrolees withdrew.

The practices remaining in HCH are spread across practices of different sizes (based on the number of FTE GPs), practice ownership (independent, corporate and ACCHS) and location (reflecting both the remoteness and socio-economic circumstances in which the practice is located). Lowest rates of withdrawal were observed for practices that are independently owned (31.4%); have 5-8 FTE GPs (37.2%); are in major cities (37.7%); and in locations that

have average levels of disadvantage (37.1%). However, practices across all these dimensions remain active in the HCH program. Therefore, HCH seems feasible for different types practices operating in different circumstances, but these factors influence the nature and intensity of the implementation challenges that the practices face.

The practices remaining in the program have an average 3.6 FTE GPs participating in HCH, which represents around 64% of the total FTE GPs that were estimated to be working in the participating practices at the beginning of the trial.²

Based on data reported by practices, GPs make up around 33.6% of the practice FTE staff. Others include other medical staff such a GP registrars/advanced trainees (0.8%); nurses (18.6%); allied health (13.6%); and practice managers, receptionists and other administrative staff (33.5%). Forty-seven per cent of practices reported having allied health staff.³

The average number of HCH patients per practice was relatively stable in the first half of 2018 – around 20 patients per practice – but increased to around 78 patients per practice by August 2019. Enrolments varied greatly per practice, from 1 to 469 patients.

Practices cited the following as the main motivations for joining the program: attraction to the HCH principles or the perception that they were already operating according to these principles; seeing HCH as the future of primary care; limitations of fee-for-service funding. Those that withdrew cited the following reasons for withdrawing: staff turnover; lack of commitment or support for the model from GPs within the practice; insufficient information about the program prior to implementation resulting in a lack of clarity over expectations; issues with the risk stratification tool (RST); the administrative workload associated with enrolling patients and implementing the program more generally; concern that they would be worse off financially under the bundled payment; that the model was incompatible with their clientele; lack of clarity around responsibility for patients under the model.

Characteristics of HCH patients

As at 31 August 2019, there were 10,161 patients enrolled in the HCH program amongst the 131 participating practices. Enrolment was slow during the first half of 2018, then increased through to the end of 2018. The enrolment rates slowed again, with relatively steady increases through to the end of the enrolment period (30 June 2019). Most patients enrolled have been assigned to Tier 2 (50%), followed by Tier 3 (most complex – 33%) and Tier 1 (least complex – 17%).

² This figure may overestimate the number of GPs actively participating within practices. It was drawn from data collected early in the trial, but through interviews we heard that some GPs who originally intended to participate changed their minds.

³ We suspect that some practices have reported allied health staff that provide services at the practice but who may not be formally employed or contracted by the practice.

Patients joining HCH cited various reasons for doing so: curiosity about the program; trust in their doctor who recommended it; easier access⁴; more personalised care and greater involvement in their own care and self-management.

As at 31 August 2019, 1,217 patients had withdrawn from the program (11% of the total enrolments). The main reasons were that the patient had opted out (32%) or the practice had withdrawn from the program (31%).

Both the patient survey and interviews with patients revealed long-standing relationships between patients and their GP and practice. The patient survey found that two-thirds had attended the practice for more than five years, and in interviews, patients reported relationships that spanned up to 30 years. Patients initially attended their practice due to convenience or on the recommendation of someone that they knew. They stayed due to friendly staff; services offered; proximity to specialists or pharmacists; bulk billing; office set-up; multiple GPs with a wide range of skills; openness to trying new treatment ideas; and access to nurses via the phone. In their GP they valued communication; empathy; non-judgment; generosity of time; thoroughness; continuity; and expertise.

HCH patients are older than the overall patient population, but around 50% are aged less than 65 years. Most patients reported multiple chronic conditions, with close to 50% reporting four or more chronic conditions. Across several measures HCH patients experience various health challenges which increase with the tier that they are assigned to.

Practice extracts revealed that patients had seven consultations with their GP on average over the most recent six months and 13 over the most recent 12 months. This aligned reasonably with what patients reported when surveyed.

Patients reported that for urgent care, they generally got an appointment when they needed it (84% got an appointment 'most of the time' or 'always'). This was also the case with appointment for routine care (85% reported being able to get an appointment when they needed it 'most of the time' or 'always'). Most got an appointment with their personal GP (84% reported being able to get an appointment with their GP 'most of the time' or 'always').

Patients reported that features of care that occurred 'always' or 'most of the time' at the practice where they were enrolled included: that their values, beliefs and traditions were thought about when their doctor or nurse recommended treatments; that they were shown how what they did to care for themselves influenced their condition; and that their care was well-organised. Features they reported were less common were being given a written list of things that they should do to improve their health; being contacted after a visit to see how things were going; being encouraged to attend programs in the community that could help them; or being asked how their visits with other doctors were going.

Levels of patient activation were assessed using a standard instrument. Across the HCH patient population, 34% of patients were allocated to the highest level of activation ('Maintaining behaviours and pushing further'); 41% to the next highest level ('Taking action'); 19% to the third level ('Becoming aware but still struggling'); and 6% to the lowest level ('Disengaged and overwhelmed'). Higher proportions of Tier 3 patients were in the 'Disengaged and overwhelmed' category. The responses suggest relatively high levels of

⁴ Including to other team members beyond the GP to receive information, guidance, and education about their condition, priority access and the ability to get routine prescriptions and referrals without visiting the practice.

activation amongst the HCH population, although there are opportunities for increased levels to be achieved for some patients.

Practice experience of implementation

Setting up for HCH

Practices and PHN practice facilitators felt the length initially set out for the trial (two years) was not long enough given the level of change required. This was subsequently addressed, with both the time frame for the enrolment as well as the overall program extended by the Australian government (seven and 19 months respectively).

PHN practice facilitators distinguished between infrastructure changes and conceptual changes in the way practices operate and deliver care. The former requires training and setup of key processes (such as installing software and cleaning up data) and the latter includes changes to culture, mindset and buy-in from key staff. While additional resources may have helped with changes to infrastructure, the conceptual changes could not be achieved any faster. Certainly, the magnitude of change required for practices to transform to HCH was large. PHN practice facilitators thought that in the early stages of HCH implementation, practices did not appreciate this, with some thinking that the only change with HCH would be that they would be paid differently.

Some practices stated that they found it difficult to run a busy practice while simultaneously integrating the HCH model. The pressure to adhere to the program timeframes was difficult for practices, especially for enrolling patients. Because of the additional time it took practices to establish their processes, many reported that they had little time left before the enrolment deadline.

Some practices reported high costs associated with setting up for HCH; much higher than the value of the incentive grant. The costs were associated with time for practice staff to train, cleaning data and upgrading IT. Some didn't think that the investment was worthwhile given that it only covered a small component of the practice's work, due to the small number of patients enrolled and/ or that only a fraction of the practice's GPs were participating. For many practices, the program involved running dual systems – one for HCH patients and one for other patients – which created tensions with the practice.

Lessons – Practice set-up

2. For programs such as HCH, allow time for practices to prepare for practice change prior to enrolling patients.

Enrolling patients

Some practices opportunistically enrolled patients as they attended the practice for their appointments. Others were more strategic, for example, holding a forum to explain the program to patients.

Practices tended to approach patients based on who clinicians thought would benefit from the model. They tended to approach patients whom they perceived were motivated to improve their health; whose goals aligned with the HCH model; who had a strong relationship with the GP; whom they did not expect to attend more than the tier payment allowed for; and who had chronic conditions being targeted by the practice in its HCH model. In some instances the patient had approached the practice to enrol.

Practices did not enrol some patients identified by the RST as being potentially eligible mainly due to financial reasons (i.e. frequent attenders) and the perception that the model would not suit the patient.

Practices 'sold' the HCH model to patients as something that would improve their access to services; shorten waiting times; improve monitoring of their chronic disease(s) (e.g. including through shared care plans, routine recalls); improve coordination between the practice and external providers; allow the patient to take control of their health; be more convenient for getting scripts and referrals; give them access to a nurse for routine management and health measures; provide them with more personalised care; and give them access to more services (e.g. education, nurse home visits).

A challenge for practices in enrolling patients was articulating the value proposition to patients, specifically for their practice. This was sometimes because the practice already thought that they were providing good quality care and/ or their approach was consistent with the HCH model, and it was hard to identify what additional benefits patients would receive under the new model. Practices also reported issues around the confidence of the nurses to explain the model and generally creating a clear and consistent message that outlined the goals of the program. (Indeed, patients reported being confused by practice staff's explanation of the program; they did not understand program aims or how it would work.) Practices reported that distilling the goals of the program were effective in recruiting patients.

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. Some practices found innovative ways to streamline these processes.

Both practices and PHNs identified synchronising the various enrolment systems and simplifying the process as key improvements that could be made to enrolling patients for future rollouts of HCH.

Patients' concerns 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 for agreeing to enrol. Those patients that enrolled either did not have a problem with My Health Record or were sceptical about the security of their information but enrolled

anyway. Seventy-two per cent of patients responding to the patient survey said that they had a My Health Record. Some patients were unaware of it and/ or tended not to go online.

Another deterrent for patients in enrolling in the program was the perceived threat to their relationship with their GP. 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. However, sometimes these barriers were due to what practices were planning to offer as part of HCH (e.g. telephone consults, which would not work for people with limited English without an interpreter) rather than the model not being suited to these individuals.

The methods used to recruit patients into HCH varied across practices. Many patients and carers reported that their doctor mentioned the program at one their routine visits. Nurses often explained the details.

To recruit multiple individuals to HCH and utilise time effectively, as mentioned previously, some practices organised an information forum. Patients had mixed experiences of these forums: some enjoyed it and others reported difficulties in understanding the program or hearing the speakers.

Lessons – Patient enrolment

- 3. Exploit multiple avenues to build patient awareness of programs such as HCH, including the benefits.
- 4. Provide additional practical guidance to practices on how to communicate the benefits of programs such as HCH succinctly to patients and their carers/ families.
- 5. In future, for programs such as HCH, allow sufficient time to implement processes for enrolling patients.
- 6. Streamline enrolment processes, whereby relevant information is recorded once and used for multiple purposes. In the HCH program this included registration with the Department of Human Services, flagging enrolled patients within the clinical management software, risk stratification, shared care planning and evaluation.

Implementing the HCH model

PHN practice facilitators felt that an HCH model of care had not been sufficiently defined as part of the HCH program. It was recognised this was deliberate on the Department of Health's behalf (to allow practices to respond to local needs and stimulate innovation). However, it meant practices didn't always know what to do, and this was one of the factors that slowed patient enrolment in the first year of the program. Nevertheless, both practices and PHNs also thought that flexibility in the model was important. Some suggested pursuing a middle ground where PHNs and governing bodies would provide high-level parameters and practices would have the flexibility to implement a model that works for their patients.

In interviews, practices reported varying interpretations of the objectives of HCH, including: encouraging patient activation and education; individualising patient care/ more patientcentred model of care; improving continuity of care; reducing hospital admissions; improving the quality of chronic disease management and patient care through better planning and monitoring; offering better access to patients beyond traditional face-to-face consultations; advancing team-based care; preventative care; and taking the pressure off GPs. Practices were surveyed about the changes that they intended to make as an HCH in the earlier stages of implementation. The most common were: reassigning components of care usually undertaken by a GP to a nurse; proactively contacting patients to monitor their health; HCH patients able to telephone the practice and talk to a nurse or GP about their health concerns; HCH patients able to refill scripts without a GP consultation; improved systems for follow-up and re-call of HCH patients for preventative checks/ screens; and enhanced team care. Practices that were interviewed also identified similar changes.

Where practices had made changes, they reported that the program was already impacting positively on their internal processes, team arrangements, and the quality of patient care. However, there were practices that were yet to make changes. One reason for this was that they were still planning what they were going to do. Low enrolments also affected practices' ability to make any significant changes, as did other barriers such as lack of GP-engagement and physical space.

There were also practices that thought that they were already operating as an HCH. These practices identified that they had measures 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 make any changes. PHN practice facilitators in some cases agreed that these practices had indeed implemented key features of the model, but in others they felt that the practice had a limited understanding of HCH. An example that they gave was that some practices thought that meeting accreditation standards meant that they were already operating as an HCH.

Team care and delegation

Several practices highlighted team-based care as the major change implemented in their practice as part of HCH. For many, it was bringing about positive results. Other practices stated that they were still setting up processes to promote team-based care.

The HCH model specifically focuses on broadening the roles of the primary care team, and provides the opportunity to delegate responsibilities traditionally managed by GPs to other team members. Many practice staff interviewed felt that their GPs were already comfortable with delegating to other team members. This had come about due to GPs' exposure to team-based care in other countries, or GPs recognising that they could "take the pressure off" themselves by delegating.

However, despite the recognition that delegation is important, several practices reported that shifting to a more team-based approach had been difficult. Delegation has been a major change for GPs and a barrier for some practices in implementing aspects of the HCH model. Many staff suggested that the key to successful change in this area is allowing time to foster staff relationships and develop trust.

Sometimes team-based care was difficult due to patients' expectations about seeing their doctor at each appointment.

New roles established

Some practices hired new staff and/ or established new roles responsible for HCH patients/ activities. New staff included nurses and medical practice assistants, and new roles were HCH coordinator/ nurse. These positions had responsibilities for: enrolling patients; recalling and monitoring HCH patients via phone and email; tracking and handling finances; chronic disease management; running patient groups; entering data; preparing patient care plans; liaising with outside specialists and allied health professionals.

Though some practices with a larger proportion of HCH patients would have liked to hire additional staff for HCH, they felt that they were restricted either financially or due to the ability to recruit staff or turnover of staff. Some practices focused on having dedicated staff for HCH to ensure that they could keep up with the workload.

Managing change

PHN practice facilitators and practices identified key factors that helped practices transition to an HCH: change leaders, peer-to-peer engagement and sequencing change.

Practice facilitators felt that practices should identify key people within the practice to facilitate the change to an HCH. More than one person was required – typically a GP, a nurse and a practice manager. Facilitators thought this team should be adequately prepared, for example, through training taken together prior to the start of the implementation and having protected time to plan as a team.

A struggle in PHN practice facilitators' role was engaging GPs in the practices. Many recognised early that peer-to-peer engagement was the most effective approach for this. A strategy PHNs used was to use a GP with experience of implementing PCMH to talk to the local GPs about the model. Another strategy was GP-to-GP forums, which were often a subset of a wider community of practice established by the PHN.

Practice facilitators talked about the need to break up tasks to make change more manageable. They also talked about tailoring their work with practices according to the stage that the practice was at, including managing how much information that they gave the practice at certain points.

Both PHN practice facilitators and practices also discussed other aspects of practices that enhanced or thwarted their ability to effectively transition to an HCH. Some practices felt that their involvement in past initiatives made it easier for them to adopt HCH. These included team-based care, quality improvement, and patient-centred care. They reported that these initiatives helped them slowly engage their staff and create a culture that embraced the HCH model. Engagement in these types of activities often meant that they had worked with their PHNs in the past. It also gave them additional time to prepare for this type of large-scale change.

Practices in rural and remote areas identified obstacles related to their location. These included difficulty recruiting staff; problems with IT connectivity and general set-up; fewer supports and medical resources for individuals; and limited access resulting in high waiting times for patients.

There were conflicting views on whether practice size or ownership type made it easier to implement HCH.

Lessons – Changes within practices

- 7. Use peer-to-peer approaches to raise awareness of initiatives such as HCH amongst GPs.
- 8. Practices to identify key people to facilitate the change process. 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 as a team.
- 9. Create more opportunities for peer-to-peer engagement of clinicians involved in implementation.

Staff experience

Individual staff members interviewed for the evaluation discussed varying degrees of change in their own roles since the inception of the program. Some staff members reported that, despite an increase in administrative and clinical tasks, their role was largely the same.

In some instances staff members reported that their job satisfaction was initially negatively impacted due to the additional tasks and administrative burden, but this has since been resolved. A few practices reported that their HCH-associated workload has not decreased, and their staff members are still struggling to integrate some aspects of the model within their scope of responsibilities.

Despite these difficulties, practices reported largely positive changes in their roles and experience with implementing HCH. These include increased autonomy and responsibilities for nurses, less pressure on GPs, more team coordination and staff involvement, and stronger staff-patient relationships.

Patient experiences

Patient interviews were conducted between September and October 2018, and provide early insights into patients' experiences of HCH. At that time many practices were only just starting to implement HCH and were focussing on patient enrolment. Consequently, interviewees' reflections about the differences in their care under the HCH model were limited. However, some practices were further along in implementing the program and changes were apparent to patients. These included: alternative means of accessing services (e.g. telephone); better access more generally (e.g. priority appointments); more proactive management of chronic conditions; better coordination; greater involvement of patient in their own care/ emphasis on patient activation; more holistic approach to care and more administratively organised with care and follow up.

Where patients reported improved access since joining HCH, this was mainly through being able to contact a nurse via phone or email with any questions or to get a repeat prescription. Patients also reported follow up by the practice by phone or email to check in or remind them about upcoming appointments.

Some practices gave HCH patients priority access so that they wouldn't have to wait when they turn up at the practice or they would get a priority appointment if something urgent came up. However, patients' experience of this varied. Some noticed a difference (e.g. the receptionist would send them straight through to see a nurse when they attended the practice), while others didn't notice a different or expected that there would be a difference but reported still having to wait.

Another feature of HCH that many practices instigated was greater involvement of nurses in patients' care. While many patients liked this as they felt that the nurse provided them with the additional support and motivation that they needed, others were not comfortable with it, as they did not think that the nurses were qualified to attend to their medical needs.

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

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

Some practices focussed on encouraging patients to take control of their health as part of the changes they made as an HCH. This was one of the attractions of the program for some patients, and they reported positive experiences with this. Establishing groups on specific health issues was a strategy that some practices used to both help with activating patients as well as addressing specific health issues. Patients not only reported positive experiences with these groups health-wise, they also noticed improvements in their emotional state due to the social aspect of the groups and in their quality of life.

When asked about additional services or benefits that patients would like under HCH, most were largely content with the care that they were receiving. Where patients gave suggestions, they were around additional support that the practice could provide, overall integration of services and more information about what services they could access.

An objective of the HCH program is to promote and improved coordination between practices and other health care providers. Most patients interviewed felt there was communication between their primary care practice and other providers.

Some patients reported having medication reviews involving a community pharmacist outside of the HCH practice. Some of these reviews took place prior to the introduction of HCH. A few patients reported that their practices had a part-time pharmacist. This was beneficial as those individuals were more likely to have received a medication review since joining the program. Some patients were not sure if their GP had any contact with their pharmacists, and they had not had a medication review in the past.

In interviews, carers of HCH patients shared the struggles that they have faced in this role and lack of services and support available. Some carers discussed the benefits of HCH, including feeling that they're been listened to, and better coordination of care and advocacy for the person that they're caring for.

Most patients interviewed recommended that other individuals join HCH due to better information about their condition and more seamless care within the practice amongst other reasons. The lack of awareness of the program was raised and some patients and carers were concerned about its continuity.

Lessons – Patient experience

- 10. Develop succinct messages that communicate the benefits of the initiative to the patient and address their concerns.
- 11. Use multiple avenues to communicate these messages to patients, their families and careers, and the broader community.
- 12. Develop the capacity of practices to engage with patients, families and carers in designing and implementing change.
- 13. Patients, families and carers need time to build confidence in a wider primary care team.

Support and training

PHN practice facilitators

The Department of Health funded the 10 PHNs involved with the trial to support practices through the HCH implementation. The initial funding was for three FTE staff per PHN: two FTEs to support practices in transforming to HCHs and one to help with enrolling patients. The PHNs recruited individuals to these roles from a diverse range of professional backgrounds (nursing, allied health, practice management, practice development, community development, event management, marketing, IT, government) and organised the roles in different ways (teams with members specialising in support components such as IT, enrolment vs. a single contact per practice coordinating assistance from others).

PHN practice facilitators prepared for the role through train-the trainer workshops held at the end of 2017. Beyond the workshops, facilitators also had access to ongoing coaching webinars and a national facilitator who could answer their questions. Facilitators identified networking and sharing of information between PHNs and interactive-style learning as key enablers for their learning.

Practice facilitators saw the role as practical help for practices to prepare for HCH. In the early stages of the program implementation they focussed on relationships with practices to build trust and improve staff engagement with the model. They also focussed on helping practices with enrolling patients, which continued through to June 2019.

At the beginning of the program, PHN practice facilitators felt that they had little guidance or clear expectations of the role. They thought that the train-the-trainer workshop that was run prior to 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 impacted 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 the practice, particularly GPs. Strategies that they used to get around this were being flexible with their time (e.g. offering early morning or lunchtime sessions), and establishing expectations around the requirements and frequency of practice-PHN engagement. Practice facilitators reflected that the role as it was designed for the trial was intensive, and potentially not feasible for a nation-wide rollout. They commented that in the future, the role should evolve to be more about coaching; the ultimate goal is that practices will drive the change and facilitators will be able to guide them through it. This can potentially be achieved with an increased awareness of HCH across Australia.

Practices felt that their PHN practice facilitators were effective in helping them prepare for HCH and/ or during the early stages of implementation. Some practices would have liked more support, particularly with patient enrolments and sitting with them to show them how to do things, such as using the RST. Other challenges in PHN support for practices were facilitator knowledge of program requirements (this was mainly in the early phases of implementation), facilitator turnover, and the different styles of the facilitators.

Lessons – Practice facilitation

- 14. External practice facilitation is valuable for practices to achieve the level of transformation needed to operate as an HCH.
- 15. Rapport and trust between the practice facilitator and practice staff are foundations for practice facilitation.
- 16. A key to facilitation is assessing each practice's readiness, culture and environment, and tailoring changes to the unique needs of the practice.

Training

The Department of Health commissioned a package of online modules that practices could access. PHNs used these for their training and also developed their own training.

PHN training

PHNs offered workshops on specific issues and on-site one-on-one or group training for practices. Practices felt that this training was more useful than the online modules because it was often more interactive; they could ask questions, voice ideas, and discuss any implementation barriers that they were facing. However, they often struggled with time to attend these.

Online modules

The Australian General Practice Accreditation Limited (AGPAL) led a consortium to develop the training materials, basing its approach on the '10 building blocks of high performing primary care', the co-creating health philosophy, and the Safety Net Medical Home Initiative. Individuals completing the modules could claim continuing professional development points from Australian Association of Practice Management (AAPM), the Australian College of Rural and Remote Medicine (ACRRM), the Australian Practice Nurse Association (APNA) and the Royal Australian College of General Practitioners (RACGP).

The online training modules did not target specific clinical groups such as GPs, nurses or allied health staff, as the developers believed that the material should be suitable for all practice staff, including non-clinical staff. However, PHN practice facilitators identified this as one of the shortcomings of the modules. Having time to complete and digest the materials due to their volume was also identified as a barrier.

Data from AGPAL showed that by September 2018, 1,822 people had received a login for the online training modules. Of these, 955 had started module 1 and 748 completed it. The number that started and completed subsequent modules steadily decreased, with 101 people starting the last module (11) and 78 completing it.

Very few GPs and nurses completed the modules: 27 GPs and 57 nurses completed the foundation modules (1 to 4), and 10 GPs and 11 nurses completed the implementation modules (5-11). Using data from the initial round of practice surveys (late 2017/ early 2018), this translated to 5% of the GPs participating in the HCH program at the time having completed the foundation modules and 9% of nurses.

According to the data from AGPAL, individuals who completed the modules reported improved understanding or confidence in the topic area following the completion of the module.

Through the practice survey, practices suggested ways to improve the modules. The top suggestions were to shorten the modules, remove repetition, simplify the material and include more practical examples.

AGPAL's strategy in developing the material was for PHN practice facilitators to assess where practices were at and use segments of the online modules based on their needs. PHN practice facilitators reported that this was not easily achieved with the technology used for the online modules, as individual users couldn't move to a new module until a previous one had been completed. It was also not possible for PHNs to 'cut up' the modules to present segments to practices. Nevertheless, both PHNs and practices found ways to summarise the material and identified other strategies to lessen the time for practice staff to get across the key concepts.

Suggestions for training

Practice facilitators thought practice staff should have had the opportunity to attend training workshops with other HCHs. They commented that it would have benefitted key people in practices in the trial to have been brought together as a group. This peer-to-peer learning approach also surfaced in other aspects of implementing HCH, for example, GPs learning from each other about the model.

Lessons – Training

17. Shorten and sharpen training materials: identify opportunities to reduce their length, reduce repetition, make them more practical, and subset them further so that staff can focus on segments based on their level of knowledge and their role.

Community Pharmacy in HCH trial

Community pharmacy was added to the HCH trial in August 2018. As part of the initiative, community pharmacists to whom patients are referred are collecting demographic data about the patients, current medications, the pharmacist's assessments (e.g. adherence to medication), goals of the review and details of supporting services provided.

At 30 June 2019, 468 HCH enrolees had been referred to a community pharmacist. The patients were referred from a small number of practices, with 399 (85%) referred from seven practices. Most of the patients had only had an initial review, and 141 (30%) had had a second review.

Of the patients who had an initial review, 9% were in Tier 1, 50% in Tier 2, and 40% in Tier 3. The characteristics of patients were similar across tiers: 58% were female, 90% were English speaking at home, and patients generally scored high on the measure of adherence to medication (MedsIndex score; 74% scored above 80). Patients in Tier 3 were slightly younger, with 53% of patients being less than 65 years old compared with 41% in Tier 1 and 35% in Tier 2. Patients in Tier 3 were more likely to have attended hospital in the past 6 months (26% compared with 11% in Tier 1 and 9% in Tier 2).

Patients were taking medicines for a wide range of conditions. The most commonly prescribed medicines were antihypertensives (72% of patients) and lipid lowering drugs (54%). Medicines prescribed for these conditions were similar across tiers. Medicines were also commonly prescribed for: diabetes (44%); heart disease (41%); arthritis (32%); respiratory conditions (32%); depression or anxiety (27%); pain (26%); and digestive disorders (25%). Prescriptions of medicines for depression and anxiety increased with tier, as did prescriptions for diabetes, kidney disease, respiratory disease, and the category of 'other conditions'.

The most common goals agreed to in the patients' medication management plan were 'Improved medication adherence' (42%) and 'Improved patient knowledge about their medicines leading to improved medication use and disease self-management' (51%), but these varied substantially between tiers. Patients in tiers 1 and 2 were much more likely to have the goal of 'improved patient knowledge' than patients in Tier 3 (73% in Tier 1, 63% in Tier 2 and 30% in Tier 3), but patients in Tier 3 were far more likely to have the goal of 'Improved medication adherence' (68% in Tier 1, 32% in Tier 2 and 61% in Tier 3s). The goals of 'Improved technique/usage of medication devices' (15%), 'Optimise the medication dose' (18%), and 'Reduced medication side effects' (8%) were less common.

For most conditions, at least two people were identified as being responsible for the patient achieving their goals. Although GPs were less likely to be considered responsible for a goal, they were considered responsible for goals relating to optimising dose (57%) and reducing side effects (61%).

The most common outcomes (i.e. what the pharmacist did) for the first review included: the pharmacist updating or reconciling the medication list (98%), the pharmacist providing the patient with medicine education (89%), and the pharmacist providing the patient with

disease state information (75%). The same goals were also commonly reported at the second review.

Patients were offered services to assist them in achieving the goals they agreed to in the medication management plan. The most common service offered was blood pressure monitoring (31% of patients), followed by dose administration aid (25%).

Recent interviews with PHNs indicate that in some PHNs relationships been GP practices and community pharmacies are being fostered through initiatives sponsored by the PHN. The next round of case studies will aim to obtain perspectives from community pharmacists and practices on the Community Pharmacy in HCH trial.

Other implementation issues

Risk stratification

The PHCAG recommended risk stratification to identify patients with high coordination and care team needs, to tailor services to meet their needs. The Department commissioned Precedence Health Care to develop a tool that would be used by practices in this process. The risk stratification 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 Hospital Admissions Risk Program (HARP) tool, to assign patients to a complexity tier.

Precedence developed and validated the PRM using hospital data from a Victorian source, linked with practice clinical data. It has been recognised that further validation will be needed following the trial. Both the PRM and HARP have been developed as tools to predict hospitalisation. Different views were expressed about the tools and their application in practice.

There were challenges with installing the RST in practices, either due to incompatibility with clinical management systems or practices' IT environments. These were resolved quickly for most systems and practices but persisted in some cases. For ACCHS in the NT, it continued to be a problem into late 2018. Some of the practices that did not take up the initial offer for HCH from the Department and some of the practices that withdrew subsequently, identified problems with the compatibility of the RST, or installing it, as reasons for not continuing with HCH.

Training in the use of the software for practices and PHN practice facilitators, and in the meaning of the tiers, and application of the HARP tool for clinicians, were identified as priorities for future rollout of the program.

De-identified data were provided to the evaluation team in early September 2019 for analysis. The data supplied relate to items and risk scores for the two stages of the risk stratification process.

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 in the higher tiers were more likely to have a higher risk.

GPs could override the score returned by the PRM and invite patients to undertake the next stage of the assessment – the HARP. Of the 12,448 patients for which data were available, 30% (3,674) had a HARP completed because the GP overrode their PRM score. For those patients whose score was overridden, 25.4% were then allocated to Tier 1, 52.6% allocated to Tier 2, and 22.0% allocated to Tier 3.

Patients had 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; cardiac conditions (congestive heart failure or angina); and chronic respiratory conditions. The steepest gradient in the prevalence across tiers was for diagnosis of complex care needs in frail aged such as dementia, falls, incontinence.

Within the service access profile category, patients in Tier 3 were far more likely to have been in hospital more than once in the last 12 months, and more likely to have a reduced ability to self-care.

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 and polypharmacy.

Of the complication categories listed in the HARP tool, each was more common among patients in Tier 3.

Shared care planning

The Department gave practices until 30 November 2018 to implement an electronic shared care planning tool that met with the minimum requirements stipulated for HCH. While some practices already had technology and processes in place to share patients' care plans with providers outside of the practice, for many, selecting and implementing a system was a focus in the early stages of implementing HCH. Some PHNs purchased licences for a tool for their practices, while others provided guidance on tools that met the Department's requirements (building on the list compiled by the Medical Software Industry Association).

Practices that implemented new shared care planning tools reported initial 'teething issues'. While technical issues were resolved, some practices had ongoing issues with the usability of the tools, describing them as "clunky" and "cumbersome." Key issues were the inability to personalise templates to make them more "user friendly" and autopopulate patient information from their clinical management system. Practices stated that it took a lot of time to create a care plan using the shared care tools compared with creating it in their clinical management systems.

Some practices reported that, though the new tools had templates for common chronic diseases, such as diabetes and chronic obstructive pulmonary disease, the software did not have templates for other illnesses or comorbidities. This made it more difficult to individualise plans and ensure that they included all relevant medical history and information.

Due to these problems, some staff members argued that they should not have to incorporate another IT tool at their practice that still has many flaws. They felt that the deadline to select a shared care provider should have been extended. There were also concerns about the future costs of maintaining a shared care planning tool.

Both PHNs and practices were also concerned about how regions would achieve interoperability of the different shared care planning tools used by providers in the health care neighbourhood. During the time of the case study interviews (late 2018), practices reported varying levels of coordination with external providers via shared care platforms. Some practices had trouble with outside health professionals accessing the platform or were generally unsure whether they were using the software. These problems have led some practices to continue to communicate with providers by phone, mail, or fax. However, some practices reported that after an initial adjustment period, external providers were starting to communicate with them through the shared care software.

Despite some movement towards electronic communication between providers, many practices stated that the process of creating care plans for their HCH patients is largely the same as before. This includes how they create the care plan with the patient, the information that they input, and the way patients access the plan. Multiple practices reported providing patients with a paper-based copy of their care plan. Often this was due to consumer preference and ease.

The patient survey asked about patients' awareness of a treatment or shared care plan prior to enrolling in HCH, whether they had received a copy of the plan in the last six months and whether a copy of the plan was available on My Health Record. Around 57% of patients reported being aware of a treatment or shared care plan. 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. Interviews with patients also revealed mixed awareness of a treatment or shared care plan. In the interviews, patients that were aware that they had a care plan mentioned discussing issues such as their medical history, functional status at home, diet, activity, emotional support, hobbies and personal health goals when the plan was developed. The frequency of care plan reviews reported by patients ranged from yearly to every time the patient visited the practice.

Lessons – Risk stratification and shared cared planning

- 18. Allow time for developing and implementing new information technology.
- 19. Explore opportunities for better integration of functionality (e.g. risk stratification and shared care planning) within practice management software.
- 20. Invest in understanding how new technology will integrate into clinical processes and use these lessons to enhance tools.
- 21. Develop further training for clinicians in risk stratification tools, including improving their understanding of how the tools work and how they should be interpreted for consistent application.
- 22. Use quantitative and qualitative findings from the HCH evaluation to improve the current RST.
- 23. In promoting shared care planning, consider how solutions will be taken up by health care providers across a region.

The bundled payment

The bundled payment represents a new way of thinking and working for practices and clinicians. It aims to reduce the emphasis on GP-patient interactions as a basis for payment to a system that allows flexibility in how resources are used, consequently providing an opportunity to focus on outcomes – what's achieved for the patient.

However, practices cannot altogether abandon recording service transactions, as this information is necessary for them to assess the adequacy of the bundled payment across their HCH patients, and to share revenue from the bundle internally (based on who delivered what).

The Department commissioned the Australian Association of Practice Management to provide guidance on how to best capture services provided to patients without submitting claims, within the more common practice clinical management systems. Some clinicians were concerned that this type of recording would threaten the new way of thinking the model was trying to instil. Therefore, one of the clinicians worked with the vendor of the clinical management system that the practice was using to generate reports relevant for revenue sharing as a by-product of clinicians' recording of patient encounters rather than clinicians having to separately record this activity.

Both practices and PHNs reported that issues associated with the bundled payment took a long time to resolve within practices. These issues were in relation to tax, distributing the payment amongst HCH care providers, being clear on the rules for what the payment covers, and convincing doctors about the advantages of bundled payment versus fee-for-service.

How the bundled payment compared with fee-for-service financially for the practice was a concern for practices more generally. Many reported comparing the two. Some practices deliberately only enrolled a small number of patients to do this test. Nevertheless, practices were still unable to determine the financial impact given the short time period of the trial so far. They felt that they would have a better understanding of how the funding model is impacting their practices as the program continues to progress.

Lessons – The bundled payment

- 24. Guidance and tools to help with practical implementation of payment reform amongst practices with different revenue sharing schemes for their GPs are necessary.
- 25. The information required to manage a bundled payment within a practice should be captured in the practice management software.

Other program implementation issues

The Department issued an expression of interest (EOI) for practices to participate in the HCH trial in November 2016 and announced the 200 practices that were selected in May 2017. Negotiations were then held with practices leading to a signed agreement. The Department offered a \$10,000 grant to practices as an incentive to participate and help them get ready for the program.

The Department managed the selection of practices as a grant program. PHNs were not directly involved in selection but were asked to comment on practices to which the Department was considering giving an offer. Some PHNs see their lack of closer involvement as a lost opportunity to provide information about practices' readiness, to more effectively engage with practices prior to commencement, and to tailor the program to local needs. Others thought that if PHNs were involved, they might have selected a less representative set of practices (most likely selecting practices that they thought were ready or capable of the changes required). Having practices at all capability levels meant that the program could be properly evaluated for wider rollout. Also, through facilitating practices that weren't quite so mature, PHNs gained insight into their own capabilities of working with these practices.

PHNs observed that many practices struggled to get HCH off the ground because in many 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 withdraw subsequently. It also meant delays to implementation due to the need for buy-in from key people in the practice.

PHNs felt that there wasn't enough information given to practices about the program when they applied, as they observed that some practices were surprised by the requirements. Others just hadn't read the agreement closely. PHNs suggested that clearer information was required about what being an HCH entailed and that information sessions could have been provided for practices that were thinking of applying. One PHN ran information sessions itself.

The launch date for HCH for some practices was October 2017, and for the remaining practices that were signed up to the program at the time, it was December 2017. There were a couple of issues with this. One was that there wasn't enough time from when practices were notified of being successful in their application to participate in the program (May 2017) to when they were to start enrolling patients (October or December 2017). A second one was that the end of year start meant that practically, practices did not start enrolling patients or working on new initiatives until a few months later due to the impact of the holiday period on practice staffing and following that, the increase in demand practices experience at the beginning of the school year.

Lessons – Practice recruitment

- 26. For programs such as HCH, allow time and invest in developing and communicating information about the program during the EOI process or equivalent. This should include providing information sessions about the program for interested practices.
- 27. Make greater use of PHNs in any assessment process involving primary care practices.
- 28. In assessing applications, ensure there is evidence that GPs within the practice have been adequately informed about the program and a sufficient number support its implementation.
- 29. In funding agreements, set out clear expectations for practices and their staff in working with external facilitators.
- 30. Ensure funding contributions meet the costs of participation.

Achievements so far

The HCH program has laid foundations for primary care reform in Australia to provide better care to people with chronic and complex conditions. These foundations include:

- Better **understanding of challenges and opportunities for reform** in primary health care.
- Policy innovation to facilitate voluntary enrolment by patients with a practice and a nominated GP.
- A **bundled payment** to facilitate flexible service delivery and innovation in the care of patients with chronic illness.
- **Recruitment of a wide variety of practices** to trial the model, allowing assumptions to be tested in different environments.
- Creation of resources including training to help practices with transformation.
- A new workforce of practice facilitators to support practice transformation.
- New software to identify high-needs patients that can benefit from the model, and installation of the software in a wide variety of computing environments.
- Increased uptake of IT for shared care planning, to improve care coordination across providers.
- Some vendors of software systems used in primary care have responded to the needs of the practices by building **additional functionality** to support the HCH model of care.
- Strengthening infrastructure/ supports provided to practices by PHNs and state and territory health authorities (e.g. PHN data sharing agreements with practices, PCMH-readiness programs, communities of practice, integrated care, and other initiatives that align with the principles and goals of HCH).
- Infrastructure for evaluating the current trial has been established and is yielding qualitative and quantitative data required to understand how HCH has been implement and its effects. The infrastructure included systems for obtaining extracts from practice management systems, data linkage, and survey tools. The data collected for the evaluation will inform work on developing an ongoing minimum data set for primary care in Australia.
- An **initial profile of HCH patients** has been developed that provides insight into their health and health conditions, what they value and where there may be room for improvement.

Conclusion

Overall, it has been important for Australia to trial HCH. The implementation of the program has identified many areas that need greater attention in a wider rollout. It has also shown that HCH could not have been mandated – not as a concept and definitely not as a formula for how practices should do it; practices have needed to experience it for themselves or learn from others. So far it is acceptable and resulting in positive experiences for practices that have persevered and for their patients.

References

- Berwick, D.M., Nolan, T.W., Whittington, J., 2008. The triple aim: care, health, and cost. Health Aff (Millwood) 27:759-69.
- Bodenheimer, T., Sinsky, C., 2014. From triple to quadruple aim: care of the patient requires care of the provider. Ann Fam Med 12:573-6.
- Greenhalgh, T., 2018. How to implement evidence-based healthcare. Wiley Blakwell, Chichester.
- Greenhalgh, T., Robert, G., Bate, P., Kyriakidou, O., Macfarlane, F., 2006. Diffussion of Innovations in Health Service Organisations: A systematic Literature Review. Blackwell, Oxford.
- Health Policy Analysis, 2019. Evaluation of the Health Care Homes program Evaluation plan (Updated 2019). Department of Health, Canberra.
- Janamian, T., Jackson, C.L., Glasson, N., Nicholson, C., 2014. A systematic review of the challenges to implementation of the patient-centred medical home: lessons for Australia. Med J Aust 201:S69-73.
- Pearse, J., Mazevska, D., 2018. The Patient Centered Medical Home: barriers and enablers: an Evidence Check rapid review brokered by the Sax Institute for COORDINARE. Sax Institute, Sydney.
- Primary Health Care Advisory Group, 2015. Better Outcomes for People with Chronic and Complex Health Conditions: Final Report. Department of Health.
- Robert, G., Greenhalgh, T., MacFarlane, F., Peacock, R., 2010. Adopting and assimilating new non-pharmaceutical technologies into health care: a systematic review. J Health Serv Res Policy 15:243-50.



Australian Government Department of Health

Evaluation of the Health Care Homes program

Interim evaluation report 2019

Volume 2: Main report

Revision history

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0.1	3 October 2019	Initial draft.
0.2	7 October 2019	HPA edits.
0.3	21 October 2019	Incorporate edits from the Department of Health.
0.4	13 December 2019	Incorporate edits from the Evaluation Working Group.
0.5	14 February 2020	Minor edits to resolve discrepancies in data reported for different time points.

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Acronyms and initialisms

AAPM	Australian Association of Practice Management
ABS	Australian Bureau of Statistics
ACCHS	Aboriginal Community Controlled Health Service
AGPAL	Australian General Practice Accreditation Limited
AIHW	Australian Institute of Health and Welfare
AMS	Aboriginal Medical Service
CATI	Computer assisted telephone interview
CBDRH	Centre for Big Data Research in Health (University of New South Wales)
CHERE	Centre for Health Economics Research and Evaluation (University of Technology Sydney)
CSIRO	Commonwealth Scientific and Industrial Research Organisation
EOI	Expression of interest
EWG	Evaluation Working Group
EQ-5D-5L	5-level EQ-5D version (quality of life instrument)
FTE	Full time equivalent
GP	General practitioner
HARP	Hospital Admissions Risk Program (tool)
HCH	Health Care Homes
HCH-A	Health Care Homes Assessment (tool)
HPA	Health Policy Analysis
HPOS	Health Professionals Online Services
HREC	Human Research Ethics Committee
IAG	Implementation Advisory Group
IT	Information technology
LHN	Local Hospital Network
MBS	Medical Benefits Schedule
MMM	Modified Monash Model (remoteness categorisation)
nKPIs	National Key Performance Indicators
NPS	National Prescribing Service
PACIC	Patient Assessment of Chronic Illness Care (tool)

PAM	Patient Activation Measure (tool)
РСМН	Patient centred medical home
PBS	Pharmaceutical Benefits Schedule
PHCAG	Primary Health Care Advisory Group
PHN	Primary Health Network
PIP	Practice Incentive Program
PIP QI	Practice Incentive Program Quality Indicators
POC	Point of Care
POLAR	Population Level Analysis and Reporting
PRM	Predictive risk model
R1	Round 1 of the evaluation. R2, R3, R4, R5 refer round 2-5 respectively.
RST	Risk stratification tool
SURE	Secure Unified Research Environment

Introduction

Overview of the evaluation

The Health Care Homes (HCH) trial started on 1 October 2017 and will end on 30 June 2021. The trial is being evaluated by a consortium led by Health Policy Analysis. The consortium includes the Centre for Big Data Research in Health (University of New South Wales), the Centre for Health Economics Research and Evaluation (University of Technology Sydney) and other Australian and international experts.

A detailed description of the evaluation methods is in the HCH Evaluation plan (Health Policy Analysis, 2019). Briefly, the evaluation is seeking to answer the following key questions:

- 1. How was the HCH model implemented and what were the barriers and enablers?
- 2. How does the HCH model change the way practices approach chronic disease management?
- 3. Do patients enrolled in HCH experience better quality care?
- 4. What are the financial effects of the HCH model on governments, providers and individuals?

Additional key questions relating to the community pharmacy component are:

- 5. Is the community pharmacy component beneficial to the broader HCH coordinated care model and should it be included as part of any future roll out?
- 6. Do patients who received medication management services as part of the HCH trial experience better health outcomes than patients who did not?
- 7. What was the level of engagement between HCH practices and community pharmacy (care coordination)?
- 8. Is the inclusion of a pharmacy component in HCH financially viable?

The evaluation is using mixed-methods to address these questions.

Purpose of this report

This document is the **Interim evaluation report 2019**, **Volume 2**: **Main report**. It is one of four volumes featuring the findings of the evaluation of the HCH trial up to 31 August 2019¹. The volumes are described in Table 1.

Volume	Description
Volume 1: Summary report	Summarises the findings of the interim evaluation.
Volume 2: Main report	Presents the findings from the interim evaluation.
Volume 3: Evaluation progress	Describes progress for the evaluation to September 2019, including progress with acquiring evaluation data and approaches for analysing qualitative and quantitative data.
Volume 4: Evaluation data supplement	Includes supplementary data to support the findings reported in Volume 2.

Table 1 – Interim evaluation report 2019: Description of volumes

¹ This is the latest date for which findings are reported. Some data end earlier.

As this is an interim report, it reflects findings that are focussed on **the establishment phase** of the program and the **early experiences** of practices and their staff, patients and PHNs. This report profiles the participating practices and enrolled patients, but these largely reflect their characteristics at the start of the program. Also, the experiences of practices and patients in Aboriginal Community Controlled Health Services (ACCHS) have not been documented as yet. Case studies of two ACCHS in the NT are currently being undertaken, and will be reported in the next evaluation report. This report will be followed by a second interim evaluation report in late 2020, and a final evaluation report in late 2021. These next reports, in particular the final report, will provide further insights into changes that have happened within practices and patients' experiences and outcomes.

The quantitative and qualitative data used to prepare this report and subsequent evaluation reports are listed below.

Another interim evaluation report will be prepared in the latter half of 2020, covering the period to 30 June 2020. The final evaluation report will cover until the end of the trial (30 June 2021). The quantitative and qualitative data used to prepare this report and subsequent evaluation reports are listed below.

Evaluation reports

Interim evaluation report 2019 (this report):

- Patient surveys at entry of HCH (from December 2017 to March 2019): Patient activation, experiences of primary care and coordination of care, health conditions, health status.
- Practice surveys Round 1 (March to June 2018) and Round 2 (November 2018 to March 2019): Characteristics of HCH practices and early experience of HCH implementation.
- Case studies (late 2018): Patient, family, carer and practice experiences in the initial period following commencement of HCH.
- Practice data extracts (up to June 2019): Profile of enrolled patients from practice data, baseline for key measures.
- Selected program data, including practice participation and patient enrolment (up to 31 August 2019).
- *Key themes*: Practices and GP perspectives on implementation in early stages of HCH. Description and analysis of HCH patient population. Baseline estimates for evaluation measures.

Interim evaluation report 2020 (late 2020):

- Patient surveys Round 4 (late 2019 to early 2020): Changes in patient activation, experiences of primary care and coordination of care, health conditions, health status.
- Practice surveys Round 4 (late 2019): Experience of HCH after 1-2 years.
- Case studies (late 2019 to early 2020): Patient family, carer and practice experience of HCH after 1-2 years. Will include case studies of two ACCHS in the NT.
- Practice data extracts (up to June 2020): Changes in key measures after 1-2 years.
- Initial Medical Benefits Schedule (MBS), Pharmaceutical Benefits Scheme (PBS) (up to June 2020) and hospital data (up to June 2018): Patients profiles for HCH and comparator groups, trends in MBS billing prior to and after implementation of HCH.
- Key themes: Practice and GP perspectives on implementation. Patient experience of HCH.

Final evaluation report (late 2021):

- Patient surveys Round 5 (late 2020 to early 2021): Changes in patient activation, experiences of primary care and coordination of care, health conditions, health status.
- Practice and practice staff surveys (late 2020): Experience of HCH implementation, nature of changes introduced and practice/staff assessment of their effect, changes in staff satisfaction.
- Case studies (late 2020 to early 2021): Patient family, carer and practice experiences after 2-3 years of HCH.
- Practice data extracts (up to June 2020): Changes in evaluation measures, including clinical processes and selected clinical outcomes.
- MBS, PBS (up to June 2021) and hospital data (up to June 2020): Comparison of trends for HCH patients and comparator patients for key evaluation measures. Impact of HCH on practice revenues. Early indicators of change in hospitalisation/emergency department attendance.
- *Key themes*: Practice and GP perspectives on implementation. Viability of approach for practices. Changes in the HCH patient population. Changes in specified measures for HCH and comparator practices and patients.

HCH program overview

Primary Health Care Advisory Group

In PHCAG, 2015, the Primary Health Care Advisory Group presented its recommendations to the Australian Government for the country's primary health system, within a focus on achieving "better outcomes for people with chronic and complex health conditions". A key recommendation of the Group was to establish a new model for primary health care called 'Health Care Homes', with the relationships to the broader health and social care system as shown in Figure 1.



Figure 1 – Health Care Homes as recommended by PHCAG, 2015

The HCH model was based on the following principles, some of which the PHCAG acknowledged currently feature in Australian primary care, and others which are embryonic:

- 1. Voluntary patient enrolment.
- 2. Patients, families and their carers as partners in their care.
- 3. Patients have enhanced access.
- 4. Patients nominate a preferred clinician.
- 5. Flexible service delivery and care teams are enabled through shared, integrated care planning.

- 6. The HCH is committed to care which is of high quality and is safe.
- 7. Data collection and sharing by patients and their health care teams to measure patient health outcomes and improve performance.

Primary Health Care Advisory GroupPHCAG, 2015, p. 5.

The PHCAG's HCH model drew on the principles of the **patient centred medical home** (PCMH), whose implementation has been widely written about in the United States, the United Kingdom and New Zealand. The model also aligns with the **10 building blocks of high-performing primary care** (Bodenheimer, Ghorob, Willard-Grace et al., 2014), and is consistent with the **quadruple aims** of health reform.

The patient centred medical home (PCMH)

There is no one PCMH model. The concept refers to models where care is delivered or coordinated through a single health care practice and/or practitioner – the medical or health care home. PCMHs are usually based in primary care. The medical home provides comprehensive care and coordination that is responsive to patients' preferences and actively engages patients and their carers and family in their care. Models usually have the following features:

- Continuity of care, achieved through linking each patient to a medical/health home a
 care team led by a primary care clinician and fostering long-term relationships between
 the patient and the care team.
- Team-based approach to care to address patients' comprehensive care needs, provide continuity of care and enhance capacity within the practice. The patient and their carer and family are members of the care team.
- Coordination of patients' care across other primary providers, pharmacists, specialists and hospitals.
- Comprehensive care encompassing preventive, acute, chronic, and end-of-life care addressing the patient's physical, mental, and social health needs.
- Enhanced access to care and health care information offering patients in-person, telephone, group, and telehealth options and electronic medical records.
- Focus on patients with chronic and complex care needs.
- Commitment to quality and safety using data to improve performance.

Health systems and practices have adopted the PCMH model to suit local contexts, including the policy and regulatory environment; goals and structural and operational features of practices; and the practices' patient population.

The 10 building blocks of high performing primary care

The 10 building blocks (Bodenheimer et al., 2014) are essential elements of high-performing primary care. The authors developed the list through their extensive experience in working in primary care as practice improvement facilitators. The building blocks are closely aligned with the PCMH model of care. They are 'building blocks' as they include foundational components that support other attributes, with the ultimate goal being flexibility in the way that the practice delivers care to patients (supported by funding reform). The 10 building blocks are:

- Foundational elements: (1) engaged leadership; (2) data-driven improvement; (3) empanelment; (4) team-based care.
- Second level elements: (5) patient-team partnership; (6) population management; (7) continuity of care.
- Third-level elements: (8) prompt access to care; (9) comprehensiveness and care coordination.
- 'Crowning glory': (10) template for the future.

The elements featured in the first three levels are mostly in control of the practice, while the last one requires system-wide funding reform.

The quadruple aim

The quadruple aim (Bodenheimer & Sinsky, 2014) adds improving the work life of providers and staff to the triple aim (Berwick, Nolan, & Whittington, 2008) of improving patient health, enhancing patient experience, and reducing health care costs.

HCH trial

Responding to the PHCAG report, the Australian Government announced the HCH trial in March 2016 (Australian Government Department of Health, 2016c). The trial was initially scheduled to begin in July 2017 and continue through to June 2019. Up to 200 practices from 10 Primary Health Network (PHN) regions (of 31 Australia-wide) were to participate in the trial. 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 (Australian Government Department of Health, 2016d). The 10 PHNs are:

- 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. The following elements were specified:

- Voluntarily enrolment with a practice and GP.
- Eligible patients include those identified as at higher risk of hospitalisation over the next 12 months.
- GPs receive a bundled payment for enrolled patients. The payment covers services related to their chronic conditions, departing from the traditional Medicare fee-for-service model. The level of the bundled payment is based on the tier that the patient is assigned to, which in turn reflect the GP's assessment of their risk of hospitalisation using a standardised tool (the Hospital Admissions Risk Program or HARP).
- A care plan is developed, and a system of shared care planning is implemented, giving patients and authorised health professionals access to the plan.

Criteria that patients need to meet to be eligible for the program are described below.

Patient eligibility for HCH

- 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.

Australian Government Department of Health, 2018c

Service delivery expected of HCHs

The Handbook for general practices and Aboriginal Community Controlled Health Services (Australian Government Department of Health, 2018c) outlines the following service delivery features expected of HCHs:

- Enhanced access to care. Aimed at supporting a patient's confidence in selfmanaging their condition through in-hours telephone support, email or videoconferencing, as well as access to after-hours care where a practice already provides this for their patients.
- **Data driven improvement**. HCHs are expected to collect and use data for internal quality improvement processes.
- **Electronic shared care plans**. HCHs must ensure that enrolled patients have a shared care plan and can access it. Practices that don't have electronic plans have until 30 November 2018 to implement compliant software.
- Access to My Health Record. HCHs must be registered with the My Health Record System and their patients must have a My Health Record within a month of enrolment. This requirement was lifted later in 2018.
- **Team-based care**. HCHs must provide care for enrolled patients using a team-based approach, where the patient is also part of the team. The bundled payment potentially allows 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 in HCH Trial program was added in the August 2018 version of the Handbook (see section below) and refers to an extension of HCH aimed at providing HCH patients with access to a community pharmacist to assist them with managing their medications.

Bilateral Agreements on Coordinated Care

HCH is a component of the Bilateral Agreements on Coordinated Care (the 'Bilateral Agreements') between the Commonwealth and the states and territories resulting from the Heads of Agreement on public hospital funding. The Bilateral Agreements include commitment to coordinated care activities and projects introduced by the Commonwealth,

states and territories. The Agreements sets out priority areas focussing on system-wide enablers of more effective care coordination, including:

- data collection and analysis
- systems integration
- coordinated care approaches and reforms

The Commonwealth's key contribution to the Bilateral Agreements is the HCH program, which is part of the coordinated care priority. Jurisdictions added initiatives relating to other discretionary areas. Within these the top five priorities were: a multidisciplinary team approach, telehealth, digital health, end of life and mental health.

Community pharmacy in HCH

In August 2018, under the Sixth Community Pharmacy Agreement, the Government dedicated funds for HCH patients to receive additional medication management services from community pharmacists, including:

- Medication reconciliation and assessing the patient's medicines regimen.
- Identifying any potential medication-related issues and agreeing on medication management goals.
- Developing a medication management plan (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 program is accessed by referral of the patient by their HCH to a community pharmacy of their choice. The community pharmacy and the HCH care team are to work together to deliver the MMP.

Program extension

In December 2018, the Australian Government announced an extension of HCH, continuing patient enrolment to 30 June 2019 and the trial to 30 June 2021.

Program establishment and implementation

This section describes the steps taken by the Department of Health and PHNs to implement the HCH program.

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 HCH program. Some have a continued role throughout the trial.

PHNs played an important role in implementation. The Department initially engaged with PHNs through existing advisory structures. Once the program was established, the Department met regularly (initially monthly then quarterly) with the CEOs and/or their representatives from the 10 PHNs. 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.

In the 10 PHNs in which HCH operates, regional or state based governance groups were established, which include representatives from the PHN, local GPs/practices, state/territory health authorities, the Commonwealth Department of Health, Local Hospital Networks and peak organisations representing ACCHS, consumers and the Pharmacy Guild.

Program infrastructure

The Department developed or commissioned infrastructure and support for HCH program, including:

- HCH Grant Guidelines (Australian Government Department of Health, 2016d).
- Operational guidelines for HCHs (Australian Government Department of Health, 2019b).
- Patient information and handbook (Australian Government Department of Health, 2017c).
- Resources targeted for health professionals, HCH practices, and consumers which are available through the Department's HCH website (Australian Government Department of Health, 2019a).
- Enhancements the Department of Human Service's Health Professionals Online Services (HPOS) system to allow patients to be enrolled in the program.
- Enhancements to Medicare payment mechanisms to pay the bundled payment.
- A RST to facilitate assessment of patient eligibility for HCH and to allocate patient to tiers the patient's disease complexity and associated needs
- Online training materials targeted for staff within HCHs (see Appendix 1).
- Practice facilitation and support provided through PHNs. PHNs have provided direct support to practices and through training workshops and communities of practice.
- Training workshops and ongoing support targeted 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 (see Appendix 1).
- An evaluation of the program.

Bundled payment

HCHs receive a bundled payment for services related to a patient's chronic conditions. An annual payment rate is set but paid monthly, retrospectively. It begins when the patient is enrolled in HCH, which is marked by the patient signing the HCH enrolment/consent form and being registered in the HPOS system within seven days of signing the form. Enrolment ends when a patient withdraws from the program due to death or other reasons.

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 (Australian Government Department of Health, 2016b). Based on this information, payments rates for three tiers were set as shown in the Table below.

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

Table 2 – HCH tier payments

The HCH payment relates to enrolled patients' chronic conditions, and includes:

- comprehensive health assessment
- shared care plan development
- regular reviews
- 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.

Australian Government Department of Health, 2018c, p. 20

HCHs may still claim for consultations or clinical services not relating to patients' chronic conditions. The HCH Clinical Reference Group created guidance on this (Australian Government Department of Health, 2018b).

HCH patients are not prohibited from consulting other primary care practices, but the patient enrolment/consent form contains the statement "4. I agree to seek care from my Health Care Home practice on an ongoing basis" (Australian Government Department of Health, 2017a). Also, the HCH Funding Assurance Toolkit requires 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)" (Australian Government Department of Health, 2018a p. 8).

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

Source: Australian Government Department of Health, 2018c.

Incentive grant

In addition to the bundled payment, HCH practices were paid a one-off \$10,000 incentive grant (GST exclusive) (see Appendix 1). The amount was "intended to incentivise participation and facilitate readiness for the program" (Australian Government Department of Health, 2016d, p. 3). The grant could be used for preparing for and participating in the HCH program. 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 (Australian Government Department of Health, 2016d).

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 (Appendix 1 lists the eligibility criteria). 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 Health Policy Analysis. 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. To achieve the target of 200 HCHs, the Department drew on its reserve list of 136 practices and also some of the 125 practices originally considered unsuitable. PHNs were also asked to approach other 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 successful practices were still deciding whether to go ahead 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 it was believed 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 visits, leaving them behind for staff to have a closer look at following the meeting.

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, the Department invited additional practices to join. Recruitment of practices has continued since the commencement of the program through to mid-2019. By the end of August 2019, 131 practices were participating in the program.

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 – 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. During 2019-20 PHNs are being funded for one FTE per 10 practices participating in HCH, with a minimum of one FTE per PHN. During 2020-21, funding will scale back to one FTE per 16 participating practices, with a minimum of one FTE per PHN.

In the rest of this report we refer to the funded PHN staff 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 requirements.

Chapter 6 describes the practice facilitation role. We also present stakeholder perspectives on this role and its effectiveness, together with reflections on what enhanced or diminished its success.

In addition to the funded HCH positions, PHNs provided other support to HCH practices. These are also described in Chapter 6.

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.

Overview of HCH practices

This Chapter describes the practices participating in HCH, and their progress with enrolling patients. The descriptions are drawn from HCH program data (from the Department of Health and the Department of Human Services), two rounds of practice survey (Round 1 March to June 2018, and Round 2 November 2018 to March 2019), a survey of practice staff (Round 1: March to June 2018) and interviews with the PHNs. The Chapter also analyses the reasons practices withdrew from the program.

Participating practices

At 31 August 2019 there were 131 practices participating in HCH. A further 96 practices had participated in the program at some stage but withdrawn (42.3%). Most practices that withdrew had not enrolled patients. In the following sections, reference has been made to 'active' and 'withdrawn' practices. 'Active' means the practice was participating in the HCH program as at 31 August 2019. 'Withdrawn' means that the practice was participating at some stage between October 2017 and August 2019, but had withdrawn prior to 31 August 2019.

Table 3 shows the number of practices by three of the four dimensions used in the selection process for the program: location, practice size (based on the number of FTE GPs) and practice type (corporately owned, independent or Aboriginal Medical Service²). The Table also includes information on the level of socio-economic disadvantage of the communities in which practice are located, using the Australian Bureau of Statistics (ABS) Index of Relative Social Disadvantage (IRDS). The index has been grouped into three categories using the deciles of the IRDS.

The analysis suggests that certain practices characteristics were associated with withdrawing from the program. Specifically:

- Independent ownership category tended to have a lower rate of withdrawal.
- Practices located in major cities (Modified Monash Model MMM category 1)³ tended to have a lower rate.
- Medium size practices (5-8 FTE GPs) tended to have a lower rate.

There is no clear evidence that withdrawal from the trial is strongly associated with the social circumstances of practice populations.

² Aboriginal Medical Service is used to refer to both Indigenous Health Services and ACCHS.

³ 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 Programme (GPRIP). MMM 1 aligns fully with the ASGS-RA category of 'Major cities'. MMM 7 relates to the most remote areas.

Table 3 – Participation status of practices and number of patients enrolled by active					
practices, by sampling strata ¹ , as at 31 August 2019					

Practice	Patients	Practices						
characteristic	in active practices	Active Withdrawn		Total	Percent withdrawn			
Total	10,161 (100.0%)	131 (100.0%)	96 (100.0%)	227 (100.0%)	42.3%			
Practice size (based	on FTE GPs)							
Sole practitioner	694 (6.8%)	16 (12.2%)	12 (12.5%)	28 (12.3%)	42.9%			
Small practice	4,118 (40.5%)	64 (48.9%)	48 (50.0%)	112 (49.3%)	42.9%			
Medium practice	3,026 (29.8%)	27 (20.6%)	16 (16.7%)	43 (18.9%)	37.2%			
Large practice	2,323 (22.9%)	24 (18.3%)	20 (20.8%)	44 (19.4%)	45.5%			
Practice ownership								
AMS ²	1,579 (15.5%)	17 (13.0%)	15 (15.6%)	32 (14.1%)	46.9%			
Independent	7,302 (71.9%)	94 (71.8%)	43 (44.8%)	137 (60.4%)	31.4%			
Corporate	1,280 (12.6%)	20 (15.3%)	38 (39.6%)	58 (25.6%)	65.5%			
Remoteness (MMM o	category) ³		·	·				
MMM 1	7,020 (69.1%)	91 (69.5%)	55 (57.3%)	146 (64.3%)	37.7%			
MMM 2	523 (5.1%)	14 (10.7%)	20 (20.8%)	34 (15.0%)	58.8%			
MMM 3	435 (4.3%)	5 (3.8%)	7 (7.3%)	12 (5.3%)	58.3%			
MMM 4 & 5	1,189 (11.7%)	7 (5.3%)	4 (4.2%)	11 (4.8%)	36.4%			
MMM 6 & 7	994 (9.8%)	14 (10.7%)	10 (10.4%)	24 (10.6%)	41.7%			
ABS Index of Relative	e Social Disadvante	age	·	·				
Deciles 1-3 most disadvantaged	4,296 (42.3%)	52 (39.7%)	40 (41.7%)	92 (40.5%)	43.5%			
Deciles 4-7	4,701 (46.3%)	56 (42.7%)	33 (34.4%)	89 (39.2%)	37.1%			
Deciles 8-10 least disadvantaged	1,164 (11.5%)	23 (17.6%)	23 (24.0%)	46 (20.3%)	50.0%			

Source: Department of Health database of practices and Practice survey R1 Mar-Jun 2018. Notes: ¹Does not include strata in dimension relating to range of clinical staff available at the practice; ²See footnote 2, p. 3. In this Table, all but one AMS is an ACCHS; ³MMM refers to the Modified Monash Model (see footnote 3, p. 15).

One measure established for the evaluation was achieving a minimum number of practices – 10 – for each sampling stratum (Measure 1.02.03). Table 3 shows that at 31 August 2019, the minimum number was achieved for all strata except practices located in areas classified as MMM category 3 (five active practices) and areas classified as MMM categories 4 and 5 (seven active practices). Another measure is a minimum number of patients enrolled – 100 – in practices across the sampling stratum (Measure 1.02.04). This target was achieved as at 31 August 2019.

Figure 2 shows the trends in the number of active practices that enrolled patients, the number of active practices that did not enrol any patients, and the number of practices that withdrew. The number of practices enrolling patients grew steadily through 2018, plateauing around November 2018. There was a further increase in around January 2019 due to several ACCHS starting to enrol patients. However, through 2019, the number of practices enrolling patients has remained relatively constant at around 130. Practices withdrew from the

program at a steady rate through to July 2019. There was a jump in withdrawals in June 2019, as the enrolment period for the program ended then, and practices that hadn't enrolled patients to that point formally withdrew. Throughout the program most practices that withdrew had not enrolled patients, although since the end of the enrolment period a small number of practices with enrolees have withdrawn.





Selection of HCH practices

As described in the previous Chapter, the Department of Health issued an EOI for practices to participate in HCH in November 2016. The 200 practices that were selected were announced in May 2017. Negotiations were then held with practices leading to a signed agreement. As described, the Department managed process as a grant program, which required compliance with regulations related to procurement. PHNs were not directly involved in the initial selection of practices but were asked to comment on practices that the Department was considering giving an offer to. Later however, the Department asked PHNs to identify additional practices to replace ones that had withdrawn.

PHN practice facilitators commented on the process for selecting practices and the results of the process.

Some practice facilitators were not surprised with the practices selected – "we could've picked most of them who got it" [PHN 5, interview, R1] – while others thought that the Department had recruited some practices that the PHN "would no way sign up to Health Care Homes" [PHN 6, interview, R1]. Others thought that given the intent to rollout HCH more

"You always want to pick the ones who are going to be easy to work with" [PHN 5, interview, R1] widely in the future, it was good to have practices at different stages of readiness to learn from these practices' experiences. In a few instances practice facilitators were surprised that practices they thought were not ready to implement the program were making progress:

"...there's a lot of handholding and a lot of walking through it but I think they're going to be good." [PHN 5, interview, R1]

One PHN reflected when the PHN was directly engaged in recruiting replacement practices it was able to better engage with the GPs, and attributed this to the relative success of these practices:

"So working it this way I think we've got that engagement, we've got that buy-in from the GPs from the beginning, not being dictated to that you're going to be joining this program." [PHN 10, interview, R1]

Effective engagement of practices and specifically buy-in from GPs were identified as crucial for successful implementation. Practice facilitators felt that this was missing in the recruitment processes, leading to later problems for the program.

Although PHNs weren't directly involved in practice recruitment, some were proactive during the EOI stage. One PHN ensured practices were aware that an approach to market was coming. It did not interfere with the process; it left it up to practices to apply.

PHN facilitators had mixed views about their role in recruiting practices. Many believed the PHN should have been involved earlier in the selection process. Specifically, they argued they could provide information about which practices would be suitable and which were not. One practice facilitator commented:

"... if it's something that's driven by the PHNs, so driven by the contact at the PHN, you can add a lot more... You can give a lot more context and background and you can, I guess, find their carrot. So, say, you've got a practice who you know would be perfect for it because they've just got the right set-up and everything's good to go, you know that practice. So, you'd go, I know you've been thinking about doing this, this, this and this. This program will allow you do this, this, this and this. Whereas it just comes across people's desks, it's at the mercy of how they interpret it." [PHN 1, interview, R1]

Facilitators suggested PHN involvement in selection would have resulted in more effective engagement with practices, which they thought was crucial:

"...the vast majority of practices communicated to the ...PHN that they would have been much happier with direct PHN involvement in this process and would have felt much more secure in dealing with people who were familiar to them and knew their region etc." [PHN 3, survey, R1]

Staff from the Department of Health involved in the practice selection indicated that they would have welcomed more involvement from PHNs. They identified extreme time pressures and the division of responsibilities across sections of the Department and state/territory offices as the main challenges of involving PHNs earlier.

Practice motivations for joining HCH

"The future of general practice is changing" [PHN 2, interview, R1] Practices gave several reasons for their interest in joining HCH. Some practices felt **HCH to be the future of primary care.** The introduction of multiple PCMH-type initiatives in Australia and shifts away from fee-for-service funding in other countries were factors that played into this thinking.

Practices were interested in learning how to implement HCH and potentially **influencing** how it might look, prior to a wider rollout of this type of program:

"We [have] been in the general practice medical centre industry for over 10 years now, and we felt that if this kind of change is coming, we want to be part of the group that is a good influence on some kind of change. More often than not, when change has happened with MBS items, we hear about them and then everyone whinges, we thought, maybe we've got a chance to influence things ...We hope that it earns some money for the practice, it also earns some money for us. But perhaps, it's the way that things are changing, and we would like to be part of this." [Joint practice manager and GP Practice 15, interview, R2]

A GP from another practice echoed this sentiment:

"I suppose, see firstly if it's any good and secondly I suppose have a say. Have a say in the system. If it's going to be rolled out then we're going to be at the forefront..." [GP, Practice 1, interview, R2]

Testing the model and checking whether "it's any good" was another motivation mentioned by practices. A GP commented:

"I am definitely a person in life that's swayed by evidence. I don't have a fixed point of view... I even think, looking at the evidence for Health Care Homes, it still wasn't strong one way or the other, especially in an Australian context, so I was more prepared to say, let's build the evidence and see how it works and evolve my decision making along the way." [GP, Practice 1, interview, R2]

Some practices felt that the **HCH philosophy aligned with their values of delivering holistic care** and that they were already providing these types of services to their patients:

"The philosophy behind it is individualised care based on the needs of the patient is in keeping with what our philosophy is anyway...If you've got an opportunity to be part of it why not be part of it? [Practice manager, Practice 18, interview, R2] "...I suppose I practice a little bit like that anyway, so this idea of holistic care, prescribing for patients when they're not present, requesting scripts, telephone calls, home visits which I'll do on occasion as well..." [GP, Practice 1, interview, R2]

"All of our staff, our reception, they do a lot of work just actually aiding the patients with everything that they need. Whether it be appointments. Whether it be pathology. Whether it be just ...helping them get transport. They're doing a lot of work anyway that's not acknowledged." [Practice manager, Practice 10, interview, R2]

The ability to **increase nurse involvement** was another driver for practices. They felt that using nurses to their full potential would free up doctors' time and promote a more team-based approach in chronic disease management:

"My main reason behind my push was to get a better nurse involvement that nurses could manage patients without a doctor. [They] Would be part of a team led care rather than everything running off just a doctor's consultation." [Nurse, Practice 13, interview, R2]

"I think what we were hoping to do was be able to provide coordinated care in a way that was less linked to bureaucracy. And by that what I meant was hopefully being able to free up the nursing staff in particular to be able to take a bit more of a free hand in coordinating care without necessarily always involving the general practitioner in every consultation." [GP, Practice 2, interview, R2]

Having a population of patients with higher rates of chronic disease and the **emphasis of the program on patient activation and self-management** was another motivation. They felt that HCH would benefit the practice and their patients on a large scale:

"I think because our patients are, have so much chronic multi-morbidity that it was suggested to us by the PHN that we might be interested in doing it." [GP, Practice 10, interview, R2]

"I think it really is the way forward. I can see that it's a very positive step forward... there's more push for people to take responsibility for their own health... People come, they are sick, you fix them, off they go. Now it's about prevention. There's largely a much, much bigger component, prevention. And HCH is the way to encourage people to do it, especially with chronic diseases like ischemic heart disease and diabetes. It's tailormade for those kind of things." [GP, Practice 4, interview, R2]

In some practice leaders had **exposure to bundled payments in other countries** and had positive experiences with the approach:

"[GP] was very on board. Again, because he was in UK...He was a huge advocate of this model." [Nurse, Practice 6, interview, R2]

A common perception was that the **current Medicare fee-for-service system restricts practices' ability to provide various types of chronic disease management**, such as group sessions, home visits, and telephone consults. Practices that believed they were already providing holistic care saw the bundled payment as an opportunity to be reimbursed for services currently unpaid under the fee-for-service model. This persuaded some practices to trial the program:

"I'm caught in that I try to spend time with people, educating them. But the longer I spend, the more I run behind...Medicare discourages us so much from trying to do appropriate health care that this was just a whole new way where we may be able to get some funding to better run this...The benefit to me of this program was to be able to run health care programs, to be to able run fitness programs, to be able to run weight-loss programs...Trying to care for people appropriately and spend time with them is an effort. And this program, to me, was going to be able to enable me to be able to do that." [GP, Practice 17, interview, R2]

"What we were interested in doing as part of Health Care Homes was to try out a few ideas that at the moment aren't supported under Medicare. So different models of consulting that we've been wanting to try out. So, this afforded us some sort of funding to be able to try that out and the flexibility to do that." [GP, Practice 9, interview, R2]

Case study

A large corporate practice with over 10 GPs was interested in joining HCH to both provide feedback about the model and have a voice in the potentially changing the health care system. The practice found it difficult to engage its doctors in the program due to the confusion around the compensation structure. Many of the doctors felt that they would not be adequately funded under HCH and that there was limited guidance around how the bundled payment would be distributed within the practice. In addition, the GPs felt that they were already providing high quality chronic disease management for their patients, so they were not interested in participating. This made it very difficult for management to increase enrolments or drive change under the initiative.

Advantages and drawbacks for GPs

Practice staff focused on the importance of engaging GPs in the decision to participate in HCH. Many felt GP involvement was crucial to their success due to GPs' leadership role within the practice and their ability to influence patients to enrol in HCH. Practices discussed their struggle to convince GPs to participate:

"We really need the primary GP to be on board and be happy with it. And he's not, so it really restricts what I can do." [Nurse, Practice 14, interview, R2]

"...not many doctors have come on board so we haven't been able to really get in there and do what we wanted to do." [Practice manager, Practice 1, interview, R2]

To encourage involvement of GPs, practices identified **possible benefits** of HCH that might be included in key messages about the model:

- additional time to see more patients
- streamline administrative and preliminary clinical work by allocating tasks to administrative and nursing staff

- being remunerated for care beyond face-to-face consultations (which GPs may already be providing), which could improve patient access and work-life balance
- improve job satisfaction due to better quality patient care
- promote teamwork and continuity of care
- provide better chronic disease management for patients.

Despite the potential advantages of the program, practices cited several **potential disadvantages** that have discouraged GPs from participating in HCH. The level of remuneration for the tiers and the bundled payment were the most prominent. A practice manager commented:

"I think across the board the doctors were concerned that they may lose financially. That ... seems to be a big issue for doctors." [Practice manager, Practice 18, interview, R2]

Concerns were raised particularly about the payment levels for tier 1 and 2 patients. Some also felt that the Tier 3 payment was insufficient for severely ill patients, and that there should be an additional tier with a higher level of payment.

Other factors that have discouraged GPs that were mentioned include:

- lack of time to incorporate the model
- not interested in trying different care models or changing the way they practice
- content with the current fee-for-service model
- limited information on how the bundled payment would work within the practice (see further discussion in Chapter 9)
- belief that HCH funding model will cause GPs to lose money, become overworked, and lead to burnout
- lack of clarity on how the model impacts on practices and practice staff
- negative media attention
- difficulty letting go of control, delegating tasks to other staff members, and shifting towards more team-based care
- seen as a way for the government to save money
- program seen as being time-limited and therefore not worth investing time and effort.

Reasons for practices withdrawing

By 31 August 2019, 96 practices had withdrawn from the program. Of these, 76 (84%) had not enrolled patients. Of the 20 withdrawn practice that enrolled patients, the median number patients enrolled was 8.5 and the average was 17 (range 1 to 59).

Practices that withdrew from HCH were invited to complete a survey that explored the factors contributing to their decision to withdraw. Some were interviewed instead. Overall, 30 practices were followed up through one of these means. Reasons for withdrawing were also explored with PHN practice facilitators.

The practices withdrawing described their motivations to join HCH, and these were similar to those described by continuing practices (see previous section). The motivations included:

- Attraction to HCH principles.
- Belief that the **practice had already adopted HCH principles**, and that the new program would not be a significant departure from its business model.
- Expectation that the HCH program would **fund activities** not supported under fee-forservice funding.

Case study

A medium-sized practice in a small town struggled with the additional workload of implementing HCH. The practice manager discussed difficulties finding time to implement the shared care planning tool, change operational processes and workflows, understand the financial model, make major quality improvements, and undertake training while simultaneously running a busy practice. The practice nurse was the main driver of the initiative and was frustrated with not being able to engage all the staff in the practice in HCH. Though the practice manager could see the potential long-term benefits of participating in the program, other staff questioned the financial benefits of HCH given the workload. The practice ultimately decided to withdraw from HCH for these reasons.

The following were the commonly cited reasons for withdrawing:

- **Staff turnover**, in particular, GPs, nurses and practice managers who were championing the program leaving the practice. Staff turnover of GPs who were not directly involved with the program also impacted the capacity of practices to continue to be involved in the program. 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 training was too time consuming for new staff.
- Some practices indicated problems arose from a **lack of commitment or support amongst GPs within the practice**, including GPS not participating in the program. In some instances, GPs in the practice did not have a good understanding of the program at the time the practice signed up to the program. In many practices only one or two GPs were participating in HCH, and other GPs were unable to agree on the merits of the model.
- Several practices reported that there was **insufficient information** about the program prior to implementation, resulting in a **lack of clarity over expectations**. PHN practice facilitators also identified an absence of clear expectations at the time practices signed up.
- Several practices raised concerns about the RST. This included problems installing the software which they were not able to overcome in some practices. 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 program 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.

- Concerns were also raised about the **administrative burden** incurred with the HCH program, specifically the length of the patient enrolment form and the length of time and multiple processes required to enrol patients. Working out how to distribute the bundled payment amongst staff in the practice was also mentioned by some practices.
- A few practices were concerned that they would be **worse off financially** after shifting from fee-for-service to the HCH bundled payment model.
- Some practices found that HCH did not work well with their 'walk in' model.
- Some practices were concerned about who would be responsible for patients given the new roles for staff under HCH.

Case study

A large practice located in a city suburb employed an HCH coordinator and received positive feedback from patients about the program. Practice staff reported that patients enjoyed receiving regular 'check-in' calls from the coordinator and felt comfortable calling to request scripts, referrals or ask other questions. However, the practice had difficulties with staff turnover, which not only affected continuity of care but also meant that many aspects of HCH had to be put on hold. At the time of the interview, the practice had no nurses on staff, and the GPs were not able to handle the workload associated with HCH. The HCH coordinator had been handling patient enrolment and management, which meant that her exit from the practice created a large gap. The practice had advertised for a replacement but was yet to find one.

Interviews with PHN practice facilitators revealed similar observations about the reasons practices withdrew: information technology (IT), lack of buy-in from key people in the practice prior to signing up for the program, and the inability to reach an agreement amongst GPs in a practice to participate. The facilitators also identified two other reasons: change of ownership of the practice, and the length of time between submitting the EOI and notification of the success (e.g. one practice signed up to another commitment during that period).

Overall, the reasons practices withdrew were mostly to do with **staff turnover**, **lack of commitment to the approach across a sufficient number of GPs within the practice**, and difficulties with the **practical aspects of implementing the model** encountered or perceived. In most instances, practices that withdrew supported the HCH principles and its aspirations.

Practice characteristics as baseline

The section focusses on characteristics of practices at the start of the HCH program – the baseline. These results are principally derived from the practice survey and staff survey conducted in Round 1⁴. Unless otherwise indicated, responses from practice that withdrew from the program have not been included in the analyses presented in this section.

⁴ The results of the Round 2 survey, which obtained information on practices' early experiences with HCH, are presented in later sections of this report. The Round 1 practice survey had two parts. Part A related to characteristics of practices at the commencement of the HCH implementation. Part B was a self-assessment by practice staff of the extent to which the practice had implemented the various dimensions of a PCMH. For Part A of the practice survey, responses were received from 120 (91.6%) of practices participating in the program on 31 August 2019. Additional responses were received from 57 practices that withdrew from HCH prior to that date. For Part B, responses were received from 118 (90.1%) of practices participating in the program on 31 August 2019. Additional responses were received from 51 practices that withdrew from HCH prior to that date. For Part B, responses were received from 51 practices that withdrew from HCH prior to that date. For Part B, responses were received from 51 practices that withdrew from HCH prior to that date. For Part B, responses were received from 51 practices that withdrew from HCH prior to that date. For Part B, responses were received from 51 practices that withdrew from HCH prior to that date. For the staff survey in Round 1

Staffing

The 119 practices responding to the practices survey in Round 1 which were still participating in HCH at 31 August 2019 reported employing a total of 2,449 individuals (head count) and 2,014 FTE staff. This is an average of 20.6 per practice for head count and 16.9 for FTE (Table 4). The difference between the FTE and head count is due to part-time employment. Practices reported an average of 5.7 FTE GPs per practice, 3.1 FTE nurses and 5.7 FTE management/ receptionist/ administrative staff. Allied health staff were less common – an average of 2.3 FTE per practice.

Vacancies, as a percentage of FTE positions, were around 6.7% for GP positions, 3.2% for nursing positions, 4.8% for allied health positions and 2.0% for management/receptionist/ administration positions.

Staffing varies substantially between practices. Table 5 explores some of the differences related to GPs. Corporate practices have a higher average number of GPs, both in terms of FTE and head count. AMS have a lower average number of GPs. Practices located in major cities (MMM 1) have a higher average number of GPs compared with those located in regional and remote locations.

Part-time arrangements tend to be more common in corporate practices. AMSs tend to have a lower number of GPs than independent practices but have similar levels of staffing to the independent practices when all staff are considered.

	Practices	Head count		FTE			Vacancies
Staff type	reporting staff type n (%)	Mean	Total	Mean	Total	% of total FTE	(%)
General practitioner	119 (100%)	7.4	885	5.7	676	33.6%	6.7%
Other medical	9 (8%)	0.2	20	0.1	16	0.8%	5.0%
Nurses	118 (99%)	3.8	457	3.1	374	18.6%	3.3%
Allied health and other	56 (47%)	2.3	275	2.3	274	13.6%	4.9%
Practice manager/ receptionist/ administrative staff/ other	119 (100%)	6.8	812	5.7	675	33.5%	2.1%
Total	119 (100%)	20.6	2,449	16.9	2,014	100.0%	4.3%

Table 4 – Staff within in each practice

Source: Practice survey R1 Part A, Mar-Jun 2018. The Table relates to active practices as at 31 August 2019.

Based on practice reports from the survey, an estimated 3. GPs per practice were participating in HCH (Table 5). (The data from the Department of Human Services suggests a slightly higher average – 3.8 per practice.) For the active practices this represented 64% of GPs in the practice based on the head count. The actual number of GPs participating increases by practice size, but the participation is lower in large and medium sized practices. Participation is highest in AMSs (93%). Participation is higher in practices located in regional

responses were received from 529 individuals: 100 GPs, 125 practice nurses/nurse practitioners, 131 receptionists, and 128 practices managers

and remote locations (MMM 2/3 and 4+). Table 6 shows the participation of GPs by their employment arrangement.

Study strata	Practices reporting GP details ¹	Head count (mean) ¹	FTE (mean) ¹	HCH GPs (mean) reported in survey ¹	Per cent of head count ¹	HCH GPs (mean) from HPOS ²		
Total	115	7.1	5.1	3.6	64%	3.8		
Size								
Large	21	15.8	11.9	6.9	48%	7.0		
Medium	24	9.8	6.9	4.2	46%	4.7		
Small	55	4.0	2.8	2.6	75%	2.7		
Sole	15	2.3	1.5	1.5	77%	1.7		
Ownership								
AMS	14	2.4	1.9	2.0	93%	2.4		
Corporate	17	10.8	7.4	3.8	44%	4.5		
Independent	84	7.2	5.2	3.8	64%	3.9		
Location - MMM								
MMM 1	80	8.0	5.6	3.5	57%	3.8		
MMM 2/3	17	6.3	4.3	4.2	71%	3.7		
MMM 4+	18	4.3	3.7	3.4	90%	3.5		

Table 5 – GPs: Total and	participating in HCH
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Source: The Table relates to active practices as at 31 August 2019. ¹Practice survey R1 Part A, Mar-Jun 2018; ²Health Professionals Online Services (HPOS) from the Department of Human Services.

Table 6 – GPs participating in HCH by employment arrangement

GP employment arrangement	HCH GPs n (%)
1: Owner/partner	125 (29.8)
2: Salaried	52 (12.4)
3: Contract	235 (55.9)
4: Other	8 (1.9)

Source: Practice survey R1 Part A, Mar-Jun 2018. The Table relates to active practices as at 31 August 2019.

Further details of staffing in the practices is in shown in Table 7. Around 50% of active practices reported employing GP registrars/advanced trainees and 8% reported employing another (non-GP) medical practitioner. Most practices employed registered nurses, most commonly as a practice nurse (78% of practices), but in some cases a nurse practitioner (13%) or remote area nurse (9%). Forty percent of practices reported employing an enrolled nurse. Only a few practices (6%) reported employing a medical practice assistant. Most practices employed a practice manager (92%) and reception or administrative staff (96%). Allied health staff were reported for 39% of practices. More detail on allied health staff are in Table 8.

	Practices	Head count		FTE			Vacancies
Staff type	reporting staff type n (%)	Mean	Total	Mean	Total	% of total FTE	(%)
General practitioner	119 (100%)	6.43	765	4.80	571	28.4%	6.9%
GP registrar/advanced trainee	59 (50%)	1.01	120	0.88	105	5.2%	5.4%
Other medical practitioner	9 (8%)	0.17	20	0.13	16	0.8%	5.0%
Nurse practitioner (RN)	16 (13%)	0.29	34	0.25	30	1.5%	8.7%
Remote area nurse (RN)	11 (9%)	0.38	45	0.38	45	2.2%	0.0%
Practice nurse (RN)	93 (78%)	2.11	251	1.58	188	9.3%	2.8%
Assistant in Nursing	8 (7%)	0.10	12	0.10	12	0.6%	8.3%
Practice nurse (EN)	48 (40%)	0.97	115	0.83	99	4.9%	3.5%
Aboriginal Health Practitioner	10 (8%)	0.33	40	0.33	39	1.9%	5.0%
Medical practice assistant	7 (6%)	0.08	9	0.06	7	0.3%	22.2%
Allied health	47 (39%)	1.88	224	1.91	227	11.3%	4.2%
Allied health assistant	2 (2%)	0.02	2	0.01	1	0.1%	0.0%
Practice manager	109 (92%)	0.97	116	0.91	108	5.4%	4.8%
Receptionist/ admin staff	114 (96%)	5.42	645	4.33	515	25.6%	1.1%
Other staff	18 (15%)	0.43	51	0.43	52	2.6%	7.8%
Total	119 (100%)	20.58	2,449	16.93	2,014	100.0%	4.3%

Table 7 – Staff within in each practice: details designation/discipline

Source: Practice survey R1 Part A, Mar-Jun 2018. The Table relates to active practices as at 31 August 2019.

Table 8 – Details of allied health staff reported by practices

Charlff In an a	Practices		FTE	
staff type	type n (%)	Mean ¹	Total	% of total FTE
Physiotherapist	34 (50%)	0.53	36	11.8%
Dietitian	45 (66%)	0.62	42	13.8%
Exercise Physiologist	19 (28%)	0.20	14	4.5%
Psychologist	48 (71%)	0.82	55	18.0%
Social Worker	7 (10%)	0.34	23	7.5%
Audiologist	17 (25%)	0.27	18	6.0%
Optometrist	7 (10%)	0.09	6	1.9%
Pharmacist	19 (28%)	0.16	11	3.6%
Dentist	12 (18%)	0.16	11	3.5%
Other allied health	44 (65%)	1.20	82	26.5%
Allied health assistant	8 (12%)	0.14	10	3.1%
Total	68 (100%)	4.54	309	100.0%

Source: Practice survey R1 Part A, Mar-Jun 2018. The Table relates to active practices as at 31 August 2019. ¹The mean is calculated for practices reporting this staff type only.

In 17.5% of practices, at least one GP had a formal arrangement for working with or in local hospitals (e.g. as GP Visiting Medical Officer (See Volume 4 Appendix 1).

Access

One of the aspirations of the HCH model is to improve access for patients to services. Opening hours of practices and after-hours arrangements are one dimension of access.

Table 9 shows the reported average waiting time (in days) for an appointment with a GP. In 88% of practices an appointment can be arranged on the same day in an emergency, and in one day in 17% of practices. For other (non-emergency) appointments, an appointment can be arranged on the same day for 45% of practices and in around one day in 38% of practices.

In an emergency	Practices n (%)	Other appointment	Practices n (%)
Same day	107 (89.2%)	Same day	52 (43.3%)
Around 1 day	13 (10.8%)	Around 1 day	51 (42.5%)
		Around 2 days	6 (5.0%)
		Other	11 (9.2%)

Table 9 – Average time (days) to wait for a GP appointment

Source: Practice survey R1, Mar-Jun 2018. The Table relates to active practices as at 31 August 2019.

Most practices (88%) indicated that at least one GP in the practice did home visits. Table 10 summarises the means of communication between patients and the practice as reported by practices. The evaluation is also exploring whether the availability and use of alternate ways of communicating between patients and practices expanded during the HCH implementation. Certain mechanisms (e.g. the patient portal) appear to have only a low level of uptake at this point in time, while others (e.g. contacting a doctor or nurse by telephone during the practice/ service's hours of operation) are commonly available.

Table 10 – Availability of selected means of communication between patients and the practice

Means of communication		
Contact a doctor or nurse by telephone during the practice/ service's hours of operation?	102 (85.0%)	
Request appointments online?	85 (70.8%)	
Describe the problems they wish to discuss with the GP prior to the appointment?	75 (62.5%)	
Send a medical question or concern via email or electronic message?	48 (40.0%)	
Leave a voice message and get a return call from a doctor or nurse	39 (32.5%)	
Review letters from specialists/ hospital discharge summarised on a patient portal?	11 (9.2%)	
View test results on a patient portal?	7 (5.8%)	
Request refills for prescriptions online?	6 (5.0%)	

Source: Practice survey R1, Mar-Jun 2018. The Table relates to active practices as at 31 August 2019.

Practices reported on the availability of other primary care/allied health services in the local community (See Volume 4 Appendix 1). Communities in which the practices reported lower levels of availability of these services tended to be more remote, although a small number of practices in major cities identified low levels of availability for selected services.

IT and data capabilities

Practices reported using seven different practice clinical management systems, with 91% of the practices using one of three systems. Practices also identified several applications used for clinical data audits and benchmarking, which drew on analysis of the data from the main clinical management system. A few practices listed the clinical management system as the system that they used for clinical data audit. Others indicated that they used/ participated in: PenCAT (with or without Topbar), Polar, NPS MedicineInsight, or a system developed by their corporate group. A few practices used more than one system.

Table 11 shows responses to questions about the ease with which certain information could be generated using the clinical management system and/or other software. Most practices reported that producing the specified information items was 'easy'.

Ease of generating	Easy	Somewhat difficult	Difficult	Not Possible
	No. of practices reporting (%)			
List of patients by diagnosis or health problems (e.g. diabetes, cancer)	109 (90.8%)	11 (9.2%)		
List of patients by laboratory result (e.g. HbA1C > 9.0)	90 (75.0%)	23 (19.2%)	4 (3.3%)	3 (2.5%)
List of patients who are due or overdue for tests or preventive care (e.g. flu vaccine)	101 (84.2%)	17 (14.2%)	1 (0.8%)	1 (0.8%)
List of all laboratory results for an individual patient (including those ordered by other doctors).	81 (67.5%)	28 (23.3%)	8 (6.7%)	3 (2.5%)
List of all patients taking a particular medication	96 (80.7%)	20 (16.8%)	2 (1.7%)	1 (0.8%)
List of all medications taken by an individual patient (including those that may have been prescribed by other doctors)	87 (72.5%)	24 (20.0%)	8 (6.7%)	1 (0.8%)

Table 11 – Practice reports of how easy it is to generate selected information about patients using the practice clinical management system and/or other software

Source: Practice survey R1, Mar-Jun 2018. The Table relates to active practices as at 31 August 2019.

Practice staff were also asked about the extent to which their practice used electronic health records and other electronic systems for functions related to chronic illness management (Figure 3). Most staff reported that their practice always or usually uses electronic health records and other electronic systems for the functions listed. Relative to the others, staff responses suggest that 'identifying patients with complex health needs' (22%) and 'monitoring patient outcomes' (23%), are potentially areas that could be improved.



The primary care team used an electronic health record system or other electronic systems to...

Figure 3 – Staff perspectives on the use of electronic health records and other electronic systems to identify patients with complex health needs, monitor patient outcomes, document patients' needs, develop care plans and determine clinical outcomes Source: Practice staff survey R1, Mar-June 2018. Active practices as at 31 August 2019.

Practice staff were asked their perspective on the ease with which specific functions could be performed with the practice's IT (Figure 4). Most staff identified 'ordering' and 'reviewing' pathology results (77% and 75% respectively), 'prescribing medications' (78%), 'reviewing patient notes' (74%) and 'updating patient medication lists and allergies' (67%) as being very easy to do. The functions that larger proportions of staff identified as being somewhat 'difficult' or 'very difficult' included: 'using their IT were communicating with other providers' (30%) and 'sending or receiving messages from patients' (28%).



Ease with which selected task can be don with the practice management system/other software

Figure 4 – Staff perspectives on ease with which selected functions can be undertaken within their practice's existing practice clinical management systems and/ or other IT Source: Practice staff survey R1, Mar-Jun 2018. Active practices as at 31 August 2019.

Table 12 shows practice responses to questions about whether selected systems/processes were in place for preventive care or other aspects of care. Almost all practices reported a reminder system to invite patients for recommended screening. The questions in the survey didn't cover re-call systems to assist in management of chronic illness, and it is worthwhile noting that the practice staff survey responses often identified improved re-call systems as one of the thee top improvements that could be made towards the effectiveness of the care delivered. Most practices (87%) reported having checklists for preventive clinical activities. Around two-thirds reported using 'a tool to assist lifestyle counselling or to help modify behaviours' and 'a system to track laboratory tests ordered until results reach clinicians'. Only 20% of practices reported using 'a standardised patient activation tool', and even in those responses it was evident that many may have misunderstood what this is (e.g. they listed their practice clinical management system or patient experience/ satisfaction survey as patient activation tools).

System/process	Practices No. (%)
A checklist for preventive clinical practices (counselling, screening, immunisation) to carry out with patients, according to guidelines?	104 (86.7%)
A reminder system to invite patients to recommend screening tests (e.g. Pap test, mammogram)?	119 (99.2%)
A system to track laboratory tests ordered until results reach clinicians?	88 (73.3%)
A tool to assist lifestyle counselling or to help modify behaviours (e.g. smoking cessation program, health education program)?	86 (72.3%)

Source: Practice survey R1, Mar-Jun 2018. Active practices as at 31 August 2019.

Table 13 shows the extent to which practices reported that GPs regularly receive and review data on selected aspects of their patient's care. Fifty-eight percent of practices reported GPs regularly received data on clinical outcomes. Similar proportions reported data was received on patient satisfaction and experience with care (62%) and frequency of ordering diagnostic tests (58%). A higher proportion reported providing GPs with data on patient hospital admissions or emergency department use (77%) and prescribing practices (68%). The number of practices reporting data on patient hospital admissions or emergency department use is surprising given that data linkage is not widespread. Therefore, this and other figures will be further investigated through interviews with practices.

Table 13 – Practice reports on whether GPs routinely receive and review data on selected aspects of their patients' care

Data reviewed by GPs	Practices No. (%)	
Clinical outcomes (e.g. percentage of patients with diabetes or asthma with good control)	74 (62.2%)	
Frequency of ordering diagnostic tests	69 (57.5%)	
Patients' hospital admissions or emergency department use	92 (76.7%)	
Prescribing practices	82 (68.3%)	
Surveys of patient satisfaction and experiences with care	74 (62.2%)	
	1 0 0 1 0	

Source: Practice survey R1, Mar-Jun 2018. Active practices as at 31 August 2019.

Practice self-assessment of HCH features at baseline

The Health Care Home Assessment (HCH-A) tool was part of the training materials provided to practices for the HCH trial. The purpose of the tool is for practices to assess the extent to which they are operating as an HCH. At program start-up, practices could use it to identify and prioritise changes that they would make as an HCH.

The tool on which HCH-A was developed in the United States (known as the Patient Centred Medical Home Assessment – PCMH-A). It was adapted for use in Australia by WentWest in 2015, and further adapted by AGPAL in 2017 for the HCH implementation (MacColl Center for Health Care Innovation at Group Health Research Institute, Qualis Health, WentWest et al., 2017).

For the evaluation, Health Policy Analysis asked for practices' results of their initial application of the tool (as part of the Round 1 practice survey, March to June 2018). The results of this are presented in Volume 4.

For each question in the tool, scores are represented on a scale of 1 to 12. The questions are grouped into eight dimensions. Scores of 1 to 3 on any item reflect absent or minimal implementation of an element of the patient centred medical home. Scores of 10 to 12 reflect that most or all the critical aspects of the element are well established in the practice. Overall, practices' median and mean self-assessment scores were in the range of 6 to 9. These suggest that practices believed that they have many of the elements of a patient centred medical home in place, but there are opportunities for improvement.

There were methodological issues in the way that practices applied the tool and technical issues that need to be considered to ensure the scores can be appropriately used in analysis. This will be addressed in the final report of the evaluation.

Previous participation in quality improvement, clinical audits and benchmarking initiatives

Practices were asked to identify which components of the Practice Incentive Program (PIP) they participated in and to describe other improvement initiatives in which they had participated in the last two years. The questions also sought to identify the extent to which they worked jointly with the PHN or local hospital/Local Hospital Network (LHN) on these initiatives. Most practices reported participating in at least one component of the PIP, with the most common being the eHealth, Diabetes and the Asthma components (Table 14). Most practices (72%) reported involvement in a quality improvement, collaborative, benchmarking, or chronic and complex disease management initiative in the last two years.

PIP component	Practices n (%)
Diabetes Incentive	114 (95.0%)
eHealth Incentive	110 (91.7%)
Asthma incentive	108 (90.0%)
Cervical Screening Incentive	105 (87.5%)
After Hours Initiative	86 (71.7%)
Indigenous Health Incentive	83 (69.2%)
Teaching Payment	58 (48.3%)
Quality Prescribing Incentive	52 (43.3%)
General Practitioner Aged Care Access Incentive	49 (40.8%)
Rural Loading Incentive	23 (19.2%)
Procedural General Practitioner Payment	16 (13.3%)

Table 14 – Practices' participation in the Practice Incentive Program (PIP)

Source: Practice survey R1, Mar-Jun 2018.

Clinical process measures

Practice data extracts are being provided for the evaluation from several sources: Pen CS, Population Level Analysis and Reporting (POLAR), National Prescribing Service (NPS) MedicineInsight and separate extracts from two corporate groups. For the baseline, (October 2017 to June 2019), practice extracts were received from 108 HCH practices (including 12 ACCHS) as at 31 July 2019 and 417 non-HCH (comparator) practices as at 31 August 2019. These extracts will be used to assess changes in measures set out for the evaluation. The measures include clinical process indicators reflecting those included in the National Key Performance Indicators (nKPIs) being reported regularly by ACCHS and have been adopted for some of the PIP Quality Improvement (PIP QI) indicators. To date, we have only undertaken preliminary analysis of these indicators. Our focus has been on understanding the variations between data sources, the completeness of data and ensuring HCH patients have been properly flagged in the data. Table 24 and Table 27 later in this Volume describe some of these findings.

The initial analysis of clinical process indicators found that the proportions of HCH patients who had selected clinical assessments and measures recorded in the last year were: 90.6% for blood pressure; 85.3% for pulse; 83.5% for kidney functioning; 81.0% for body weight; 76.8% for cholesterol levels; 31.9% for waist circumference; and 6.5% for physical activity. The recording of smoking status and amount of alcohol consumption in the last year was 68.8% and 60.7% of patients respectively. In HCH patients with diabetes, 92.2% had a HbA1c test recorded, and in patients with asthma or COPD, 5.7% had a spirometry test recorded in the last year. Trends in these and other measures will be analysed for HCH patients in future reports.

Patient enrolment

Patients enrolled

At 31 August 2019, the 131 active practices had 10,161 patients enrolled in the HCH program. Figure 5 shows the trends in numbers of patients enrolled and the average number of patients per practice. Enrolment increased slowly during the first half of 2018, then more rapidly through to the end of 2018. The enrolment rates then slowed again, with relatively steady increases through to the end of the enrolment period (30 June 2019).





The average number of patients enrolled within practices was relatively stable in the first part of 2018 – around 20 patients per practice – but increased rapidly to the end of 2018 to around 55 patients per practice. The average continued to increase more steadily through to the end of the enrolment period, finishing at 78 patients per practice. At 31 August 2019, the number of patients enrolled at the practice level ranged from 1 to 469, with the mean of 78 and median of 45 patients per practice. Figure 6 and Figure 7 show the distribution of the enrolments per practice. The number enrolments tended to be higher for the practices of medium size (5-8 full time equivalent GPs). Also, the number of enrolments tended to be higher for AMSs and independently-owned practices. However, there was a wide distribution across all practice sizes and ownership types.



Figure 6 – Distribution of patient per practice by practice size, 31 August 2019

Source: Department of Human Services weekly enrolment statistics (provided through the Department of Health).



Figure 7 – Distribution of patient per practice by practice ownership, 31 August 2019

Source: Department of Human Services weekly enrolment statistics (provided through the Department of Health).

Figure 8 shows the number of enrolled patients by tier. Most patients enrolled have been assessed as Tier 2, followed by Tier 3 (most complex) and Tier 1 (least complex). From January 2019, enrolments in Tier 1 increased only slightly, whereas enrolments for Tier 2 and Tier 3 continued to increase substantially.


🗕 Tier 1 🗕 Tier 2 🗕 Tier 3

Figure 8 – Patient enrolments by HCH tier, May 2018 – 28 August 2019

Source: Department of Human Services weekly enrolment statistics (provided through the Department of Health).

In original modelling for HCH, the Department of Health established an enrolment cap. The main purpose of this was to establish an upper limit on the financial impact of the program. This figure was subsequently interpreted as a target for enrolments. The modelling was based on assumptions shown in Table 15 (Australian Government Department of Health, 2016b). These assumptions were revised in 2018 (Australian Government Department of Health, 2018b).

Table 14 shows how the initial assumptions aligned with the enrolments at 31 August 2019. Final enrolments were much lower than the cap. The Table also shows the contribution of each of the assumptions to the difference between the cap and actual enrolments. Overall, the assumption about the number of enrolees per GP contributed around 50% of the difference and each of the other assumptions around 25% each.

Assumptions	Original estimate 20161	Revised estimate 2018²	Final enrolments ³	Contribution to difference
Practices	200	200	131	28%
FTE GPs per practice	5.0	5.0	3.5	24%
Patients per FTE GP	65.0	55.0	22.0	48%
Total	65,000	55,000	10,161	

Table 15 – Assumptions applied to set the upper limit on enrolments in the HCH, compared with actual enrolments as at 31 August 2019

Sources: ¹ Australian Government Department of Health, 2016b; ² Australian Government Department of Health, 2018b; ³ As at 31 August 2019.

Reasons for patients withdrawing

Table 15 details the reasons for patients withdrawing from the program. The main reasons were the patient had opted out (32%) or the practice had withdrawn from the program (31%). Most other withdrawals related to the dynamic nature of practices populations, including: patient no longer with the practice (16%), patient has moved from the area (9%) or the patient died (11%).

Reason	Total	Percentage
Patient death recorded	131	11%
Patient has moved from the area	115	9%
Patient has opted out	386	32%
Patient no longer with the practice	190	16%
Patient not entitled to Medicare	3	0%
Practice withdrawn from HCH	379	31%
Enrolled in error	10	1%
Other	3	0%
Total withdrawals	1,217	100%

Table 16 – Number of	natients w	vithdrawina f	rom HCH	and reasons.	31 August 2019
	puncins w	minara wing i			

Source: Department of Human Services (provided through the Department of Health).

Overview of the enrolment process

A key feature of HCH is voluntary enrolment of patients to a practice and a specific GP (Australian Government Department of Health, 2018c). Selected practices started enrolling patients on 1 October 2017, and the remainder could enrol from 1 December 2017. Acknowledging that enrolling patients in HCH was a new process for practices, GPs and patients, the Department provided detailed guidance on this, shown in the box below.

Patient enrolment process

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 patients considered to be suitable for HCH who were not flagged by the RST.

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. They give the patient a brochure about the program and information about 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 consultation/assessment. The HARP score determines the eligibility of the patient. If eligible, the score is used to assign the patient to an HCH tier (1, 2 or 3). The RST issues a digital certificate related to the 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.

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. This involves several components, as follows:

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 that they can be identified as such 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 NT ACCHS, as alternative arrangements were made for the evaluation for the NT ACCHS).

Source: Australian Government Department of Health, 2018c, pp-11-12

How practices went about it

Identifying potentially eligible patients (Step 1)

As it was originally conceptualised, the case finding stage was intended to be a systematic process, in which the RST was central⁵. In practice, a variety of approaches emerged. These can be broadly categorised into systematic and opportunistic approaches to identifying suitable patients.

The systematic approach involved using the RST or other analyses of data on the practice population to create lists of potentially suitable patients. GPs would then review these lists. The GPs could also add patients to the lists where they thought the patient would benefit from HCH. Following identification, the practice would contact the patient by letter or phone to invite them for a consultation about enrolment or invite the patient to a group information session (see step 2 below). (Note that GPs could also decide to exclude patients flagged by the RST that they thought were not suitable for HCH.)

To provide structure and start with a designated group of chronic disease patients, one practice reported targeting individuals with COPD and diabetes rather than chronic illness more generally:

"...one of our major reasons for coming into this and accepting this notion of the small teams doing it, was that we want to extend the processes. Forgetting about the funding model, we want to extend the management model out to...Other people with those diseases and to other chronic

⁵ Chapter 7 of this report describes how the RST, and in particular the predictive risk model (PRM) were used by practices to identify possible HCH enrolees. It also presents perspectives on the RST.

diseases. So, we really wanted to try to make our team process more structured...So, out of those patients, our selection was disease-based..." [GP, Practice 12, interview, R2]

The opportunistic approach involved discussing the option of HCH with patients when they attended for routine appointments and when – at the consultation – the GP considered they may be suitable for HCH:

"The five we've enrolled were just opportunistic. So when they came in for a management plan the nurses decided they'd benefit from it." [Practice manager, Practice 2, interview, R2]

"I think it was a lot of...catch them as they're in there." [Practice manager, Practice 13, interview, R2]

Most practices used a combination of these approaches. Some practices also used methods to raise awareness of the program within patients, for example through a poster in the waiting room. Several practice facilitators and practices believed that a more organised attempt to create demand for the program within patient populations could have been helpful.

In addition to the formal requirements for enrolment, practices reported choosing to approach patients based on:

- The patient's motivation and desire to improve their health.
- The extent to which the offerings of the program aligned with the patient's goals.
- Patient's individual preferences (e.g. openness to seeing other staff members within the practice rather than their doctor).
- Strong GP-patient relationship.
- Whether the patient's tier allocation made it financially viable for the practice to enrol them, which was in turn based on how often historically the patient frequented the practice and the severity of the patient's chronic condition(s) and general health. That is, it was not financially advantageous for practices to enrol highly complex patients (i.e. what one practice called "tier tens").
- Having a specific chronic condition that the practice was targeting in its HCH model.
- Patient request to enrol in HCH.
- Patient's technological savviness.

In the practice survey, practices identified why they didn't approach some patients identified by the RST as candidates for enrolment to HCH (Table 17).

In interviews, some practices reported there felt that Tier 1 and some Tier 2 enrolments had poor financial implications for their practice. Therefore, they didn't always follow the RST in the order or manner that it was supposed to be used:

"It 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]

Table 17 – Main factors that practice/GP dec	cided not to approach some of the patients
flagged by the risk stratification tool (inclue	ding responses from withdrawn practices)

Response	n (%)	Response	n (%)
Financially not viable (frequent attendance)	32 (30.5%)	Complex mental health patients	4 (3.8%)
Patients personality not suitable / program wouldn't suit them	22 (21.0%)	Patient prefers to see their GP (a doctor)	4 (3.8%)
Doctors 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.

Informing patients about HCH (Step 2)

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

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, family 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 arranged. These session were very successful for some practices:

"...we [were] involved in...a big initial meeting with eligible patients, had an information night, that's how it all started, which was very successful...... I think we prepared for about 25 places or so to be signed up on the night, and they were pretty much all signed up on the night." [GP, Practice 12, interview, R2]

"I came up with this idea about having a forum...We picked about 300 people, sent invitations out to 300 people to come in and we did it at a community area locally...We did a bit of a spiel. All the staff came. The practice closed early that day, and it was really, really good. Really good feedback. And what we had done as well, we pre-made appointments...So that day of the forum, and that was in May of this year,

all the appointments that were made on that night took us right through to August. [Practice manager, Practice 4, interview, R2]

Other practices found these sessions were not as successful:

"...we sort of organised one community forum. So sent out 350 invitations and then I had about 20 registered and 10 turned up. And five registered...So [receptionist] goes, identifies the patient who is eligible, and she puts a note with the nurse saying this patient is eligible for Health Care Homes, do you want to have a chat? And then the nurse will take them in, have a chat with them. And I think it's sort of working better than sending out the letters or inviting them for the community forum." [Practice manager, Practice 9, interview, R2]

"No one really came. I think we had one or two people come so that didn't go as planned." [Practice manager, Practice 1, interview, R2]

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 where 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 had sufficient information to be comfortable to proceed to the next stage.

Case study

A small practice located in a large city provides services for a vulnerable population. The practice offers a wide range of care, including drop in clinics, after hours assistance and care coordination that includes a social aspect. The team was motivated to join HCH because they felt that the model was more financially viable, as the practice provides many additional services that are not funded by Medicare. The patient enrolment aspect of HCH was a challenge, since patients don't regularly visit the practice, so had to be done opportunistically. The nurses found explaining the program and its benefits to patients a challenge. Staff members described discussing HCH with patients and creating care plans as a lengthy process. To combat this issue, the team decided to show patients the animated two-minute HCH video developed by the Department of Health. By watching the video, both the staff and patients had a better understanding of the program and its objectives.

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 patient condition)
- 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 way to manage health issues

• access to more services (e.g. education, home visits).

Despite these selling point, practices and 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 the care for the patients that they were enrolling would not change to a 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 did not impact their patients:

"...that can be an internal struggle as well to go, hang on I'm a GP, I'm providing good care, why am I trying to sell to my patients that they should participate in this program because they're going to get better care." [PHN 4, interview, R1]

"...I guess that's just it's that spiel of, what is this, why is it...? Because often I will go, there's this new program, it's actually not very different to how we run things now. The big change is around how we do the billing." [Practice nurse, Practice 10, interview, R2]

"...most of the time, they're just like, but I don't see why I need it. I'm saying, well, you kind of don't, but just help me out." [Practice nurse, Practice 1, interview, R2]

"Some patients didn't see what was different, because we were already providing that level of service for them anyway. Most patients then go, you're right, we're already doing it. But now we're going to get paid for it so sign here." [GP, Practice 5, interview, R2]

Overall, creating a clear and consistent message that outlined the goals of the program was a challenge:

"I had a couple, who were not really understanding... I don't think they really understood it. But they felt they didn't need it... People will go home and go, oh well I don't know what that was all about but...Or I remember bits of it. And even the ones who absolutely have no problems whatsoever, they were the ones that were not remembering or not understanding. So yes, that was really eye opening for me to be able to go, even though I think they've understood and I'm documenting in the notes the patient has agreed." [Practice nurse, Practice 14, interview R2]

For some practices delivering a simple message was the most effective way to help patients understand the advantages of the program:

"In enrolling patients, sometimes patients were not really clear. We had to put it very simple for them that the only purpose is that you don't have to visit the doctor and you can pick up your scrip, and that's the only reason. If you put it simple for the patient but it's more than that." [Owner & GP, Practice 3, interview, R2] "I think keeping it simple, keeping the process simple of what you're explaining to the patients..." [Practice nurse, Practice 10, interview, R2]

The recommendation of the GP to the patient was often described as a key component, due to a strong GP relationship and the trust that they have cultivated with their patients, patients were more likely to enrol in HCH when their doctor had the discussion about the program with them:

"...because they already have a good relationship with [the GP], a very close relationship with [the GP]. They are able to trust him and be able to go ahead with it. So, yes, so, a lot of them are already excited to sign up." [Practice manager, Practice 11, interview, R2]

"The patients are like that, they trust their doctor... the doctor needs to convince a patient." [Practice manager, Practice 3, interview, R2]

A few practices discussed difficulties in enrolling patients from different cultures, non-English speaking backgrounds, recent migrants, and homeless people. While there were no doubt legitimate obstacles (such as no fixed address for homeless people or refugees), sometimes these barriers were due to what practices were planning to offer as part of HCH rather than the model not being suited to these groups:

"We've got a fair few migrant families that attend here, and some of them, in particular, I wouldn't be offering Health Care Homes to. Because particularly, within our practice, we're gearing ourselves to offer phone consults and so on. That doesn't necessarily work out over the phone, particularly if you've got interpreters being involved. So that's been another consideration." [GP, Practice 9, interview, R2]

In addition, practices stated that patients from different cultures, non-English speaking backgrounds, recent migrants, and homeless people had to be enrolled opportunistically:

"You can't do the letter thing, you can't do the let's have a morning tea and enrol people, it doesn't work. Not for our patient groups, so it's been challenging as to how we enrol people and when it's ad hoc..." [Practice manager, Practice 10, interview, R2]

One practice reported that the HCH patient video produced by the Department of Health was helpful:

"Show them that video and then they'd just, ah, we see what you're saying. And then, normally, everything's done by then." [Practice nurse, Practice 10, interview, R2]

They reported that the video also helped practice staff wrap their heads around the overall goals of the program.

Why did patients decide not to enrol?

Not all patients agreed to proceed with enrolment in HCH. Table 18 shows the main reasons that patients who practices approached to enrol in HCH program opted not to enrol.

Table 18 – Main reasons why patients approached to enroll in HCH opted not to (including responses from withdrawn practices)

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%)	Not interested in care planning	3 (2.9%)
Patient didn't understand model or the potential benefits	32 (30.5%)	Language barrier	1 (1.0%)
Patient didn't want to change / happy with current care	32 (30.5%)	Software problem	1 (1.0%)
Patient didn't want to be in a (government) trial	11 (10.5%)	Too hard to get carers on board	1 (1.0%)
Patient didn't want to be restricted to one practice	10 (9.5%)		

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

"...that electronic health record was a big, big barrier for a lot of them." [Owner & practice manager, Practice 6, interview, R2] Media attention around My Health Record and general fears around security and confidentiality were the main causes of patients' apprehensions to join the program:

"Mostly people will hesitate because of the confidentiality part. I have a lot

of patients that I've been talking to a few times, that you will benefit from Health Care Homes, but they're just worried about confidentiality...They just feel like they will be monitored by someone else, the government and stuff like that, but sometimes you just can't push too much." [Practice nurse, Practice 11, interview, R2]

"Even explaining My Health Records...My older patients don't question this but our more IT literate stuff and especially when the My Health Record was coming up, they just question and question and question..." [GP, Practice 17, interview, R2]

Another issue for patients was the expectation that they see their GP every time they visited the practice. This appeared to be an issue for some cultural groups, but was not isolated to these groups:

"But the ones that said no ... they fear that this program will destroy the relationship between the GP and them." [GP, Practice 5, interview, R2]

It often took GPs convince their patients that it would be beneficial for them to enrol in HCH and that their relationship would not be hindered by the model:

"...the doctor needs to ensure the patient, I will always be there if you really need to see me, it's not that I'm going to neglect you..." [Practice manager, Practice 3, interview, R2]

Case study

A large suburban practice just outside of a major city serves people from diverse cultures. One of the barriers that the practice faced in recruiting patients was around patients' expectations of seeing their doctor whenever they visited the practice. The GP stressed the need to reassure patients that the doctor will always be available and that the GP-patient relationship will not suffer or deteriorate in a team-based approach to care.

Other enrolment processes (Steps 3-6)

Chapter 7 provides additional analysis of practices experiences with the HARP assessment and the assignment of patients to tiers. Otherwise, the additional areas in which practices provided feedback concerned the administrative processes, particularly registering patients (Step 6). The majority of active practices considered that they had some challenges [with these processes], but overcame them, and around a quarter reported that the process was very smooth. A small proportion (14%) of active practices reported ongoing difficulties.

Rating of the administrative processes for enrolling patients in HCH	The process was very smooth	We had some challenges, but we overcame them	We experienced ongoing difficulties
Active practices at 31 August 2019	21 (23.1%)	57 (62.6%)	13 (14.3%)
Withdrawn practices	2 (16.7%)	7 (58.3%)	3 (25.0%)

Table 19 – Rating of administrative processes for enrolling patients in HCH

Source: Practice survey R2, Nov 2018-Mar 2019, questions 2 & 13.

Practices suggested several ways to improve the enrolment process. The top recommendations from practices are shown in Table 20. PHN practice facilitators also had similar suggestions.

Table 20 – Suggestions for improving the enrolment process (including responses from withdrawn practices)

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.

In interviews staff reported that the enrolment process – explaining the program to patients, getting consent, assessing the patient's eligibility, creating a care plan, and registering individuals on multiple platforms – was time-consuming:

"I think the funding may be reasonable for the ongoing care once they're signed up, systems are involved, and they're enrolled, but the practice initially getting to that, and then the patient initially getting enrolled, took an admin, a nurse, a doctor, probably three to five hours per patient." [GP, Practice 7, interview, R2]

"There is a bit of pressure of time, but also to try and convince yourself something, a relatively new concept to the patient, does take a bit of time. We do expect them to ask some questions from us. Something like this needs a fair amount of explanation." [Practice manager & GP, Practice 15, interview, R2]

Overview of HCH patients

This Chapter profiles enrolled patients at baseline, that is, around the time they were enrolled into the HCH program. Some analyses reflect characteristics of patients after enrolment. For example, the practice extract data are to 30 June 2019.

Patient characteristics

Table 21 describes the tier, sex and age of patients enrolled in the HCH program, derived from three sources: the program enrolment data⁶, the patient computer assisted telephone interviews (CATI) and the practice data extracts. At 30 June 2019, there were 10,214 patients enrolled. Around 1,000 patients had withdrawn. The reasons patients withdrew were presented previously (see Table 16).

HCH patients were most likely to be assigned to Tier 2, followed by Tier 3 (most complex) and Tier 1 (least complex) (see Figure 8). A slightly larger proportion of HCH patients are female (around 54%). Around, 52% are aged 65 years and over.

Overall, 2,018 patients were surveyed (18% of all enrolees). The response rate was 64.5%. Further details of non-respondents are provided in Volume 4. Compared with the overall HCH population, the patients surveyed had a slightly higher representation in tiers 1 and 2 and people aged 65 years and older. This difference mainly reflects the sampling frame used for the patient surveys. Patients aged under 18 years were excluded.⁷ In addition, patients enrolled with ACCHS in the NT were not surveyed.⁸

Table 21 also shows the characteristics of HCH patients from extracts from practice clinical management systems ('practice extracts'). The practice extracts show a similar profile to the full HCH populations across the dimensions of tier, sex and age group. There was an underrepresentation of corporate practices in the practice extracts available at 30 June 2019, an issue that was subsequently addressed. Data were analysed on 8,336 patients flagged as HCH patients in these extracts (71% of all enrolees).

HCH patients are older on average than the whole practice populations ('active patients') (Table 22).

⁶ The analysis of Department of Human Services data reflects different totals for enrolled patients compared with Figure 5 due to the date at which data were extracted: Figure 5 reflects the latest data on enrolments (as at 31 August 2019), whereas Table 21 reflects more detailed data provided (up to 30 June 2019).

⁷ Proxies were surveyed for two patients aged under 18 years in a situation where the age of the patient had been inaccurately recorded.

⁸ Following consultation with local stakeholders, this was not considered an appropriate nor effective method to gather information from these patients.

Characteristic	Characteristic Patient enrolments ¹		Patient surveys ²	Practice data		
Characteristic	Active n (%)	Withdrawn n (%)	Total n (%)	n (%)	extracts ³	
Total patients	10,214 (100.0%)	1,065 (100.0%)	11,279 (100.0%)	2,018 (100%)	8,336 (100%)	
		НСН	l tier			
Tier 1	1,770 (17.3%)	153 (14.4%)	1,923 (17.0%)	442 (22.7%)	1,480 (18.2%)	
Tier 2	5,049 (49.4%)	470 (44.1%)	5,519 (48.9%)	1,034 (53.1%)	3,970 (48.7%)	
Tier 3	3,395 (33.2%)	442 (41.5%)	3,837 (34.0%)	472 (24.2%)	2,700 (33.1%)	
		Se	ex.			
Female	5,528 (54.1%)	550 (51.6%)	6,078 (53.9%)	1,083 (54.4%)	4,500 (54.2%)	
Male	4,686 (45.9%)	515 (48.4%)	5,201 (46.1%)	908 (45.6%)	3.799 (45.8%)	
		Age grou	p (years)			
0 < 18	162 (1.6%)	9 (0.8%)	171 (1.5%)	18 (0.9%)	148 (1.8%)	
18 -24	200 (2.0%)	13 (1.2%)	213 (1.9%)	128 (6.4%)	183 (2.2%)	
25-44	1,183 (11.6%)	65 (6.1%)	1,248 (11.1%)	551 (27.4%)	1,013 (12.2%)	
45-64	3,342 (32.7%)	329 (30.9%)	3,671 (32.5%)	658 (32.7%)	2,673 (32.1%)	
65-74	2,589 (25.3%)	279 (26.2%)	2,868 (25.4%)	513 (25.5%)	2,046 (24.5%)	
75-84	2,027 (19.8%)	240 (22.5%)	2,267 (20.1%)	144 (7.2%)	1,656 (19.9%)	
85+	711 (7.0%)	130 (12.2%)	841 (7.5%)	18 (0.9%)	617 (7.4%)	

Table 21 – Key characteristics of HCH patients

Sources: 'Based on information from Department of Human Services. Data reflects enrolments at 30 June 2019; ²CATI surveys conducted by The Social Research Centre between December 2017 and March 2019. Age was unknown for 27 respondents, sex unknown for 6 and tier unknown for 70; ³Practice data extracts received up to 30 June 2019. Tier is not included in extract data for 186 patients, sex is not recorded or not stated for 37 patients.

The patient surveys provide further insights into other characteristics of HCH patients (see Volume 4). Key points include:

- For some patients the survey was completed by a proxy (5.6%), and for others, a proxy needed to help them to answer some questions (3.7%).
- 3.3% of patients surveyed identified as Aboriginal or Torres Strait Islander (noting the sample did not include patients enrolled by ACCHS in the NT).
- 68.3% of respondents were born in Australia, 14.4% in the United Kingdom and 17.2% in other countries.
- Respondents were offered the opportunity to conduct the survey in several languages as an alternative to English. The vast majority (99%) of surveys were conducted in English. Eighteen were conducted in other languages (Maltese, Tagalog, Hindi, Filipino, French, Punjabi, Croatian, Romanian and Polish).
- The majority of respondents (46.3%) were living in a household consisting of a couple only. A further 24.1% of respondents were living alone. There was a statistically significant difference in household composition between tiers. Specifically, a higher proportion of patients in Tier 1 and Tier 2 were living in couple only households, and a higher proportion of Tier 3 patients were in a person living alone household.

Chaurachauistia	Patients flagged as HCH in practice extract data ¹		All active patients –	Percent of active				
Characteristic	All practices providing extracts	Practices providing complete extract	complete extract ²	an HCH patient				
Total patients	8.336 (100%)	6,977 (100%)	584,953 (100%)	1.2%				
Sex								
Female	4,500 (54.2%)	3,727 (53.7%)	320,993 (55.2%)	1.2%				
Male	3,799 (45.8%)	3,213 (46.3%)	260,578 (44.8%)	1.2%				
	Age group (years)							
0 < 18	148 (1.8%)	117 (1.7%)	120,950 (20.7%)	0.1%				
18 -24	183 (2.2%)	113 (1.6%)	50,723 (8.7%)	0.2%				
25-44	1,013 (12.2%)	631 (9.0%)	180,430 (30.8%)	0.4%				
45-64	2,673 (32.1%)	2,043 (29.3%)	142,775 (24.4%)	1.4%				
65-74	2,046 (24.5%)	1,876 (26.9%)	51,735 (8.8%)	3.6%				
75-84	1,656 (19.9%)	1,594 (22.8%)	26,795 (4.6%)	6.0%				
85+	617 (7.4%)	603 (8.6%)	11,540 (2.0%)	5.2%				

Table 22 – Profile of HCH patients

Sources: 'Based on practice data extracts received to 30 June 2019, sex is not recorded or not stated for 37 patients; ²Based on practice data extracts provided by non-AMS practices at 30 June 2019, age is not recorded for 5 patients and sex is not recorded or not stated for 3,379 patients. 'Active patient' is defined in Pen CS data as having at least three progress notes recorded in two years. In POLAR data, it is defined as the patient having at least three different dates recorded in the extract data as an encounter, observation, pathology test, prescription or MBS billing in 21 months (from October 2017 to June 2019). Patients who died are excluded.

HCH patient utilisation and access

Most patients (65.2%) indicated they had been attending their HCH practice for five or more years. A further 15.6% had been attending between three and five years (Table 23). The relationship between tier and the length of time attending was statistically significant, with a higher proportion of Tier 1 patients attending the practice for a longer period.

		HCH risk tier					
Characteristic	Total	1	2	3	p value		
Less than 6 months	34 (1.7%)	3 (0.7%)	9 (0.9%)	20 (4.3%)			
6 months – 1 year	52 (2.6%)	7 (1.6%)	19 (1.8%)	25 (5.3%)			
1 – 2 years	297 (14.7%)	59 (13.3%)	150 (14.5%)	82 (17.4%)	<0.001		
3 – 4 years	315 (15.6%)	66 (14.9%)	172 (16.7%)	72 (15.3%)			
5 years or more	1,315 (65.2%)	307 (69.5%)	681 (66.1%)	271 (57.7%)			
Don't know	5 (0.2%)						

Table 23 – L	enath of time	e patients ha	ive been atte	endina their	HCH practice
		e panenis na		maning men	non pracilee

Source: CATI surveys conducted by The Social Research Centre between December 2017 and March 2019.

The practice extract data provides a means of estimating the number of GP consultations. Overall, the mean number of GP consultations per HCH enrolee was 6.92 over six months and 13.41 over 12 months (Table 24). Through the patient survey, patients reported how often they attended the practice in the last six months (Table 25). Around half attended less than five times in the last six months, 30% attended between five and nine times and 28% attended 10 or more times. The practice extract data show a similar distribution, although the patient reported attendance tend to be skewed towards 10 or more attendances. Across both sources there is a clear gradient between tiers, with Tier 3 patients having GP consultation rates that are around 45% higher than Tier 1 patients over six and twelve months.

Patients were also asked about the frequency that they contacted the practice by telephone or email about a health issues (excluding for arranging an appointment). Around 35% of patients reported at least one interaction of this nature (see Volume 4).

Tuble 24 Homber of of constitutions by non-patients					
GP consultations	All HCH patients	HCH risk tier ²			
Gr consolicitons	All them pulletins.	1	2	3	
Number of HCH patients	8,323	1,477	3,963	2,697	
Mean (standard deviation) number of GP consultations					
In the last 3 months	3.67 (2.91)	3.04 (2.25)	3.56 (2.76)	4.14 (3.32)	
In the last 6 months	6.92 (5.34)	5.53 (4.13)	6.61 (4.89)	8.06 (6.24)	
In the last 12 months	13.41 (9.71)	10.73 (7.34)	12.80 (8.83)	15.65 (11.43)	

Table 24 – Number of GP consultations by HCH patients

Sources: Practice data extracts that had been received through Pen CS or Polar by 30 June 2019. The number of GP consultations for patients in Pen CS practices was estimated based on derived variables that indicate the number of times any GP in the practice used the practice's clinical information system within the defined period. For patients in POLAR practices, the number of GP consultations was calculated as the number of patient encounters with a GP provider for any encounter type (e.g. visit, surgery, telephone, non-visit) within the define period. In instances where multiple GP-provider encounter records with the same encounter type were recorded in one day, one encounter record was selected. The analysis of GP-provider encounters in POLAR data shows that majority of GP-provider encounters (94%) related to patient consultations (i.e. type of encounter as visit or surgery). ¹GP consultations for all HCH patients were calculated for 81 Pen CS practices whose extract data contain the GP utilisation derived variables and patient risk tier and 4 POLAR practices whose extract data contain patient encounters. ²GP consultations for patients in each risk tier were calculated for 81 Pen CS practices whose extract data contain patient encounters and risk tier.

HCH risk tier No. of attendances Total р 1 2 3 value Once 82 (4.1%) 21 (4.8%) 42 (4.1%) 16 (3.4%) Twice 244 (12.1%) 82 (18.9%) 114 (11.2%) 44 (9.4%) 3 times 324 (16.1%) 90 (20.7%) 158 (15.5%) 65 (13.9%) < 0.001 4 times 296 (14.7%) 62 (14.3%) 165 (16.2%) 57 (12.2%) 5 to 9 times 596 (29.5%) 112 (25.7%) 318 (31.2%) 146 (31.2%)

Table 25 – Patient reports of number of attendances in the last 6 months

Source: CATI surveys conducted by The Social Research Centre between December 2017 and March 2019.

218 (21.4%)

136 (29.1%)

63 (14.5%)

434 (21.5%)

26 (1.3%)

10 or more times

Don't know

HCH patient health status

The patient survey included questions about the patient's assessment of their overall health and dimensions of their health related quality of life using the EQ-5D-5L instrument (Devlin & Krabbe, 2013; Herdman, Gudex, Lloyd et al., 2011). For overall health, 37% of patients reported their health as poor or fair, with clear gradient between Tier 1 (21%) and Tier 3 (54%) (Figure 9). 24% of patients reported their overall mental or emotional health as poor or fair, ranging from 13% for Tier 1 to 37% for Tier 3 (Figure 9). Differences between tiers were statistically significant.





Figure 9 – Patient reported overall health and mental or emotional health Source: CATI surveys conducted by The Social Research Centre between December 2017 and March 2019. Differences between tiers are statistically significant.

Table 26 describes how patients responded to questions about whether they had specific health conditions. Nine health conditions were pre-specified, and patients were also asked whether they had any other chronic conditions. The most commonly reported conditions included high blood pressure (61.0%), arthritis (58.0%) depression or anxiety (41.0%), diabetes (34.5%) and heart disease (32.4%). For several conditions (heart disease, stroke, depression or anxiety, arthritis and other chronic diseases), there were statistically significant differences between patient in different tiers.

Close to 50% of patients reported four or more conditions, ranging from 42.1% for Tier 1, 49.6% for Tier 2 and 56.2% for Tier 3.

Data are also available from the practice extracts on the number of chronic conditions. These are summarised and compared with the patient survey results in Table 27. There are differences in the way conditions are described and grouped between these two sources, and both sources are potentially biased (e.g. recall bias for patient self-reports and underrecording in practice extracts). The comparison suggests patient reports result in higher proportions of patients reporting conditions and a higher number of chronic conditions overall.

	All HCH				
Conditions	patients ¹	1	2	3	P value
Number of chronic conditions ³					
None	28 (1.4%)	11 (2.5%)	9 (0.9%)	7 (1.5%)	
One	173 (8.6%)	60 (13.6%)	74 (7.2%)	33 (7.0%)	
Тwo	329 (16.3%)	84 (19.0%)	168 (16.2%)	65 (13.8%)	-0.001
Three	492 (24.4%)	101 (22.9%)	270 (26.1%)	102 (21.6%)	<0.001
Four	436 (21.6%)	99 (22.4%)	232 (22.4%)	90 (19.1%)	
Five or more	560 (27.8%)	87 (19.7%)	281 (27.2%)	175 (37.1%)	
Patients reported hav	ing:				
Heart disease ³	653 (32.4%)	133 (30.4%)	325 (32.2%)	172 (37.6%)	0.050
Stroke ³	216 (10.7%)	35 (7.9%)	95 (9.3%)	76 (16.2%)	<0.001
Cancer	490 (24.3%)	107 (24.3%)	259 (25.3%)	102 (21.7%)	0.337
Osteoporosis	495 (24.5%)	98 (22.7%)	258 (25.5%)	125 (27.4%)	0.272
Depression or anxiety ³	828 (41.0%)	135 (30.9%)	419 (40.8%)	244 (52.0%)	<0.001
Arthritis ³	1,170 (58.0%)	230 (52.6%)	620 (60.4%)	281 (60.6%)	0.014
Diabetes	703 (34.8%)	141 (32.1%)	359 (34.9%)	179 (38.1%)	0.168
Asthma	546 (27.1%)	109 (24.7%)	276 (27.0%)	143 (30.6%)	0.135
High blood pressure	1,230 (61.0%)	252 (57.5%)	649 (63.9%)	287 (61.9%)	0.073
Another chronic condition ³	912 (45.2%)	178 (41.2%)	455 (45.3%)	255 (55.2%)	<0.001

Table 26 – HCH patients: Self report health conditions

Source: CATI surveys conducted by The Social Research Centre between December 2017 and March 2019. ¹Proportion calculated includes patients responding 'Don't know'; ²Proportion calculated includes patients responding 'Don't know'; ³Difference between tiers is statistically significant (p value < 0.05).

Chronic conditions	Patient survey	Practice extracts ¹		
Number of conditions ²				
None	28 (1.4%)	737 (8.8%)		
One condition	173 (8.6%)	1,524 (18.3%)		
2-4 conditions	1,257 (62.3%)	4,998 (60.0%)		
5+ conditions	560 (27.8%)	1,077 (12.9%)		
Patient conditions				
Heart disease	653 (32.4%)	1,989 (23.9%)		
Stroke	216 (10.7%)	423 (5.2%) ³		
Cancer	490 (24.3%)	676 (9.1%) ³		
Osteoporosis	495 (24.5%)	1,249 (15.2%) ³		
Osteoarthritis	828 (41.0%)	2,117 (25.5%) ³		
Depression or anxiety	1,170 (58.0%)	2,253 (27.0%)		
Diabetes	703 (34.8%)	2,630 (31.6%)		
Asthma or COPD	546 (27.1%)	2,277 (27.3%)		
Hypertension	1,230 (61.0%)	4,114 (49.4%)		
Other	912 (45.2%)	4,063 (48.7%)		

Table 27 – Comparison of health conditions reported by patients and flagged for HCH patients within practice data extracts

Sources: CATI surveys conducted by The Social Research Centre between December 2017 and March 2019. Practice data extracts that had been received at 30 June 2019. ¹Percentages are calculated for 8,336 HCH patients, unless indicated otherwise; ²The number is based on the groupings used for the patient survey. The number ranged from 0 to 10; ³When derived variables relating to the condition were absent from entire Pen CS extracts, HCH patients in the practices with missing data are excluded from the calculation (i.e. the denominator was less than 8,336).

The EQ-5D-5L provides a method for assessing a patient's health related quality of life at the time of completing the tool (Devlin & Krabbe, 2013; Herdman et al., 2011). Responses to these questions can be converted to a numerical scale using valuations derived from population responses described in Volume 4. Figure 10 shows the patient responses by HCH tier to questions for the EQ-5D-5L domains. For each of these domains, there is a clear gradient across the tiers. Overall, HCH patients are reporting higher levels of problems for the domains of: pain or with Tier 3 patients reporting poor health related quality of life. discomfort, mobility, and usual activities.

Figure 11 uses boxplots to show the distribution of EQ-5D-5L scores. These scores can range from -0.34 to 1.00 (full health)⁹. The mean for HCH patients is 0.71. For this measure there is also a clear gradient between Tier 1 (0.80) and Tier 3 (0.65).

⁹ A negative EQ-5D-5L score is not common, but possible. In the survey 30 (1.5%) responses resulted in negative values.



Health related quality of life

Figure 10 – Patient reported responses to questions about dimensions of their health related quality of life (EQ-5D-5L) on the day of the survey

Source: CATI surveys conducted by The Social Research Centre between December 2017 and March 2019. Differences between tiers are statistically significant.



Figure 11 – Distribution of EQ-5D-5L score by HCH tier of patient Source: CATI surveys conducted by The Social Research Centre between December 2017 and March 2019. Differences between tiers are statistically significant.

Patient activation

Items from the Patient activation measure (PAM) (Hibbard, Mahoney, Stockard et al., 2005), were included in the patient survey. Scores were allocated to four categories, as shown in Figure 12. Across the HCH patient population, 34% of patients were allocated to 'Maintaining behaviours and pushing further' (the highest level of activation) and 41% to 'Taking action' (the next highest level), 19% to 'Becoming aware but still struggling' and 6% to 'Disengaged and overwhelmed'. Higher proportions of Tier 3 patients are in the 'Disengaged and overwhelmed' category.

These results suggest relatively high levels of activation amongst the HCH population, although there are opportunities for increased levels to be achieved for some patients. Changes in patient activation will be tracked through future patient surveys.



Figure 12 – Patient activation level using the Patient activation measure (PAM)

Source: CATI surveys conducted by The Social Research Centre between December 2017 and March 2019. Differences between tiers are not statistically significant.

Support and training for practices

PHN practice facilitation and support

Initial response from PHNs

Following the initial announcement of practices recruited to the HCH program, PHNs proceeded to meet with the selected practices either individually or as a group. A few PHNs held workshops for the selected practices to provide them with more information about the program. Some practices were still deciding whether to participate at that stage and some PHNs saw their role as advocating for the program. Others preferred to remain neutral, and instead focussed on providing information.

Some PHNs developed their own resources to help communicate with practices during the initial recruitment phase. One PHN developed an abridged (10-page) version of the practice handbook as it felt that 30 plus pages were too much for practices to digest at that point in time. Another 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 practice visits, leaving them behind for staff to have a closer look at following the meeting.

One corporate practice group initiated a roadshow for its practices, and PHN practice facilitators accompanied the corporate representatives for practices within the PHN region.

Practice facilitators felt that there was insufficient time to engage effectively with practices from when they signed the agreement to participate in the program (starting from about July 2017) to when HCH was launched (October or December 2017). Also, PHNs were often receiving information only a few weeks ahead of practices. The initial train-the-trainer workshop – intended to prepare them for their role – were held in August 2017. Therefore, many practice facilitators felt that they weren't adequately equipped to answer practices' questions in the early months of the program. To overcome this issue, some PHNs dialled in Department of Health personnel to answer practices' questions during site visits.

Practice facilitators suggested that the Department might have arranged information sessions for practices before applications were due. The sessions could have articulated what an HCH is and the transformation journey expected from practices, and could have been used to promote the program:

"I think there's a piece around that from the Department supported by some of the Health Care Homes, supported by the PHN, that could really make that much more meaningful, get that excitement happening and, you know, the opportunities that are available to practices that take part, to be able to sell that, but also to allow the practices to understand what they were getting into." [PHN 2, interview, R1]

How PHNs organised the facilitator role

Some practice facilitators worked as team with practices, so that different facilitators help practices with different aspects of implementation, such as IT issues, patient enrolment, and workflow mapping. Others assigned individual facilitators to practices, so that each practice had a single point of contact. However, both models involved facilitators working as a team behind the scenes. One PHN reflected that the challenges the facilitators faced working as a team helped them understand the challenges that practices faced within their teams.

In most PHNs the practice facilitator role was differentiated from the PHN's usual primary health liaison. One PHN created one point of contact for each practice for HCH and other initiatives, organised geographically. The rationale was that HCH would be impacted by other initiatives that practices are involved with, and it made sense to look at these initiatives from the perspective of the practice.

Practice facilitators reported that a mix of skills within the facilitation team is important. Facilitators came from a variety of backgrounds – nursing, allied health, practice management, practice development, community development, event management, marketing, IT, government – and the skills they brought were considered valuable for the role.

Two PHNs used clinical support staff to supplement the support provided to practices by the facilitators in tasks such as shared care planning and using the HARP. The staff included a GP clinical advisor and a chronic disease support nurse.

South East Melbourne PHN developed 'Basecamp', an online platform for practice facilitators to share information and strategies. Practice facilitators were very positive about the platform.

Preparation and training for the practice facilitator role

Appendix 1 outlines the training that was available to the PHN practice facilitators. The evaluation of the training for the practice facilitators is also detailed in this Appendix.

Practice facilitator role

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Practice facilitators used the phrases "assisted resource" [PHN 10, interview, R1] and "facilitative resource" [PHN 3, survey, R1] to describe the role. They saw the role as a practical one: "We are at the

coalface" [PHN 9, interview, R1].

One facilitator jokingly referred to the role as "*practice manipulator*" [PHN 3, interview, R1], highlighting that the role involved being tough on deadlines but "*soft, cuddly*" when needed, and only providing as much information to a practice as it's ready to absorb.

Facilitators reflected that the initial implementation phase of HCH was heavily focused on patient enrolment. Setting up general operational processes took longer than anticipated for many practices, which left little time for the facilitators to support practices with increasing enrolments:

"it has been a lengthy process of getting the systems in place and convincing the staff around these changes." [PHN 2, interview, R1]

Facilitators concentrated on forming relationships with practices and their team to ensure access and improve staff engagement, which took considerable time:

"we honestly spent the first six, seven months of the trial just developing relationships with the practices rather than pushing buttons." [PHN 3, interview, R2]

Another commented that during enrolment stage, if there was a gap in contact between the practice and the facilitator even for two weeks, the practice's rate of enrolment and the enthusiasm and motivation of staff dropped off.

Many facilitators also talked about 'handholding'. One facilitator commented:

"I've been a bit surprised at how much handholding we've had to do... going through in minutiae with them... And that it's about the mechanics of things but when you come to sort of a conceptual it's actually even more difficult." [PHN 5, interview, R1]

"Knowing when to step back, knowing	
when to step in" [PHN 4, interview, R1]	

Handholding often balanced "cracking the whip" [PHN 4, interview, R1], which was another technique used by the facilitators to achieve changes.

During the first year of the program, the facilitators were anxious about their roles not being funded beyond the enrolment stage (which was initially to 30 November 2018). Their anxiety was both for the short term because "some practices are only just coming to grips with what they need to do in this program" [PHN 7, interview, R1]), and it was also important for practices to know that the PHN was there "for the long haul" [PHN 10, interview, R1].

One facilitator mentioned that since the announcement of the extension they were looking forward to circling back to the fundamental building blocks of the model, such as data quality management, GP and whole-of-practice engagement, and business optimisation. Though the amount of time required for preparation varied from practice to practice, some practice facilitators felt that patient enrolment and making fundamental changes to practice were in competition time-wise. Many stressed that practices were given a short timeline to implement such internal large-scale changes and simultaneously register patients before the end of the enrolment period. The extension of the program in August 2018 was well-received by the PHN staff and the practices:

"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...I think the extension's going to really give people time to implement things, which is great." [PHN 5, interview, R2]

Following the announcement of the extension, some facilitators stated that would continue to focus on supporting practices with increasing their enrolment numbers:

"I think if anything the extension is a benefit just purely because it allows them to be able to now confidently recruit the remainder of patients, to really be able to test the models for themselves..." [PHN 2, interview, R2] "There has to be a better way to do this" [PHN 9, interview, R1] In the initial stages, the role was very absorbing. Facilitators commented that the approach taken for the trial will need to be modified for a nationalwide rollout of the program. A key issue was the

intensity of the practice support required just to get to an understanding of the concept, before practices embarked on any changes:

"... if [HCH is] rolled out nationally, this is going to be a huge issue because it's so labour intensive... And does the workforce have the capacity, like the PHN workforce, for example, ... to do that?" [PHN 9, interview, R1]

What practice facilitators have been doing

Evolution of the role

At the beginning of the implementation of the program, practice facilitators described the difficulty of providing support and training to practices when they were just learning about HCH themselves. They stated that they had little guidance or clear expectations of the role of practice facilitator at the beginning of the program rollout:

"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]

The practice facilitator role was distinguished from PHNs' role in supporting general practice under normal contractual arrangements with the Commonwealth:

"It's really about business transformation and transforming the way that the practice delivers their models of care. And that's quite big... That's a very different blueprint to what our primary health liaison team would normally do." [PHN 2, interview, R1]

Another PHN suggested that the train-the-trainer workshops designed to prepare the practice facilitators for their role could have been used to explore the differences between a PHN's usual supporting role and the facilitation role:

"...[the PHNs] would have been supported better to actually deliver on this particular implementation if they had an opportunity to explore well how does this differ from some of the other functions and responsibilities within a PHN." [PHN 5, interview, R1]

As time went on, the practice facilitators 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:

"...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]

One of the issues that impacted the advancement of the role was turnover of facilitators, which has been difficult for all parties involved in HCH:

"The local Primary Health Network person has changed...that seems to be bit of a feature of Primary Health Networks. There's a lot of movement and change, people don't seem to stay anywhere for very long." [Practice 18, interview, R2]

"From the PHN's side of things, one of the really key things for us is the ability to retain staff during this process where we've had uncertainty in funding going forward..." [PHN 10, interview, R2]

Facilitator turnover was also apparent in the second round of PHN interviews for the evaluation, when many of the original facilitators had moved on. New facilitators had to reestablish relationships and rebuild trust:

"...I came in to 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]

Coaching was mentioned by the practice facilitators as the preferred approach to supporting practices:

"For me it's becoming really familiar with the modules and then going to a practice and going okay if this is where they need help I can draw this bit from the module to help them understand...If we're familiar with the content and we can go we can use this tool...That's where our coaching comes in." [PHN 8, interview, R1]

Practice facilitators commented that in the future, the role should evolve to be more about coaching. Though practices are at varying stages of their HCH journey, the ultimate goal is that practices will have the desire to drive this change and facilitators will be able to guide them along the way until they are no longer needed:

"...the expectation is that they're going to manage their own change internally and basically work us out of a job, which is what we want to happen, with the movement away from selling and telling to practice transformation enabling and coaching and support and giving them the tools to basically do change management in health. And that's certainly where we see the role of the facilitators moving forward." [PHN 2, interview, R2]

Type of support provided

Practice facilitators reported helping practices with the practical aspects of participating in HCH (such as using the RST, registering patients with HPOS, getting logins for practice staff for the evaluation portal), with the conceptual aspects of the model (such as working together as a team), and motivating them to continue with the program when they faced challenges ("If they do throw their hands up in the air, we are there to calm them down and show them a way through" [PHN 6, interview, R1]). Table 28 sets out examples from the Round 1 survey of PHNs of the support provided by practice facilitators.

Table 28 – Examples of support provided by PHN practice facilitators

Practical support	Organisational and motivational support
 Helping practices implement information technology (IT) infrastructure and education and processes around the use of the IT (includes HPOS, the Health Policy Analysis evaluation portal, Topbar, Precedence Connector Training, HCH-A tool, shared care planning software). Working with practices on administrative tasks. Maintaining a repository of information about HCH that the practices can access. Repositories were usually online portals that the PHNs had created to organise the material about the program. Maintaining a website for the program. The websites served to communicate information about shared care planning tools. Facilitating other processes, such as completion of the HCH-A tool Assisting practices with patient registration, including patient education (e.g. development of case studies of how patients benefited from programs similar to the HCH model). Helping practices around control and delegation of tasks to facilitate improvement in workflow. Role playing around patient enrolment. Utilising clinical support staff from PHNs to train practice staff on the RST and patient enrolment processes. 	 Acting as intermediary between the practices and the Department of Health. Identifying clinical champions. Providing education and training about the program either through running workshops on different aspects of HCH or providing information in other forms (e.g. newsletter). Establishing and supporting communities of practice. Assessing practices' readiness and developing action plans based on their level of readiness. Assisting practices with their workflow by mapping out processes and identifying gaps or potential improvements to those processes. Creating tools to help practices. For example, checklists of what needs to happen and when, such as for patient registration. Sharing information and approaches from elsewhere Facilitating team huddles and encouraging communication among practice teams Creating friendly competition among regional HCH practices by sharing weekly patient enrolment numbers and general updates. Hosting shared care planning workshops. Organising patient engagement sessions for practices to have delegated time to enrol patients and learn how to effectively describe the program and its benefits. Providing dashboards of aggregate data to motivate practices and give feedback on quality improvement.

Practice facilitators created tools out of necessity ("to give [practices] something that was tangible of what the process was" [PHN 7, interview, R1] but felt that there was duplication amongst the PHNs in some of these tools. They suggested some key tools may have been developed nationally (e.g. coordinated by the Department of Health or a lead PHN and drawing on a network of experts), and subsequently adapted by PHNs for local use.

Variation in practice support

Practice facilitators thought that solo and small practices needed less support than medium and large practices. No differences were identified according to whether practices were independent versus corporately owned; some thought that corporate practices needed less support than independent practices and others thought that they needed more. Though corporate practices may have their own resources, facilitators found staff access and buy-in issues were barriers to implementing the HCH model. These issues have arisen from the management structure of corporate practices which often require decisions and all communication to go through regional managers or the head office. In addition, some corporates made the executive decision to join HCH without getting prior buy-in from many of the doctors or practice teams:

"...they really wouldn't allow the PHN to provide very much support...The other major challenge was that the requirements for the [corporate practice] was that everything be done through their regional managers. Which then meant that the local people on the ground who were struggling didn't have the opportunity to get the support that they really needed to be able to implement the change that was required." [PHN 5, interview, R1]

Some facilitators reported that remote and rural practices needed additional support due to a myriad of factors, including issues with remote internet access and difficulty with staff turnover and recruitment in both PHNs and general practices. Facilitators' were often unable to provide ongoing support and visit these practices frequently due to the amount of travel time:

"A lot of those are really remote communities, we're talking driving five, six, seven hours to get to these communities...we're on satellite internet and that costs a fortune and every time PRODA¹⁰ drops out or HPOS drops out or the HARP tool was dropping out it was causing more issues than it was actually worth trying to get them enrolled." [PHN 8, interview, R2]

Another facilitator commented:

"We have got a shortage of GPs in our [region] practices... the resources are just really stretched in most of our practices." [PHN 5, interview, R2]

Other characteristics of practices that practice facilitators thought meant that they needed a greater level of support were:

- Multicultural patient demographic with language barriers.
- Current model of care inconsistent with HCH (e.g. no prior implementation of nurse led clinics, clinicians not working to top of professional scope, GPs not being aware of nurses' skillsets or unwilling to delegate tasks to nurses).
- Lack of systems and processes.
- Staff turnover, especially of key roles such as practice manager and practice nurse.
- Leaders or GPs only working on a part-time basis.

As the program has progressed, many facilitators reported focusing the HCH model and training materials on specific practice goals and identifying areas where the practices would need more support. This approach has been crucial for many facilitators in effectively working with practices on implementing HCH. It has allowed the facilitators to align the model with individual practice values and objectives:

¹⁰ PRODA stands for Provider Digital Access, an online authentication system providers use to securely access government online services.

"We sort of simplified... where we could...with practices, and really went through...this is a simple model of care, how would this individualise it for a practice, how does this work." [PHN 4, interview, R2]

Facilitators discussed their approaches to providing support according to individual practice readiness and training needs. Some of these undertakings include:

- Classifying their practices into different informal categories (transactional, business optimisation, and transformative practices)
- Going over specific practice goals and discussing potential enablers and barriers to HCH implementation
- Creating a checklist for practices to allow them to see "...where they're at. And where some of their gaps were and what they were hoping to do with Health Care Homes" [PHN 9, interview, R1].

In regard to classifying practices, one facilitator reported:

"...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]

The facilitator continued to say that, though the PHN level of support is the same with these three types of practices, it is delivered differently. Transactional practices may focus more on structural training and inputting general processes, business optimisation practices generally have developed a formal quality improvement plan and work on those types of initiatives, and transformational practices will engage the whole team and review their operations and processes regularly:

"...The transactional practices, you go in and you do what they ask you to do, and then that's about the end of it and they are happy. With the transformational, there is opportunity to have conversations around reviewing practices and processes, and actually getting to work with other members of the team, and not just the GP." [PHN 4, interview, R1]

Another facilitator stressed that some practices that may be classified as more transactionaltype practices do not have their general processes in place, such as billing, reminders, and recall which has affected everything from their ability to effectively implement the model to their patient enrolment numbers:

"I've still got some, three practices, that have not enrolled one patient ...they're all busy working in their practices not on their practices." [PHN 6, interview, R1]

This has affected the type of set-up and operational support provided by the PHNs.

Practice facilitators identified organisational factors that contributed to greater support:

- non-visible leadership
- lack of buy-in for the model from all practice staff
- non-availability of practices' change agent
- low level of knowledge of the HCH model of care amongst practice staff
- limited communication amongst practice staff
- a transactional vs. transformational focus
- reluctance to share data with PHN
- poorly defined staffing roles (e.g. absence of position descriptions)
- poor time management
- low level of willingness to invest time to make changes
- practices coming on board late into 2018 due to limited time available to engage them and get them up to speed
- other competing priorities (e.g. accreditation, practice refurbishment).

How practice facilitators engaged with practices

Establishing a rapport and trust with practices

The PHN survey identified establishing trust and strong relationships between practice facilitators and practice staff as one of the most common factors contributing to the effectiveness of the facilitation role. Practice facilitators discussed the importance of getting to know the key people in a practice to effectively engage with them:

"So, when you engage those leaders you're engaged as change agents. And they are the ones who are making those changes. It requires a lot of nurturing, a lot of time...if we didn't have those relationships, if we didn't have those interactions, we didn't have that trust, the amount of change that we're asking to do, I think most people would just be: Too hard, sorry." [PHN 5, interview, R1]

"You can't do much if they won't let you in the door" [PHN 9, interview, R1] One facilitator stated that setting hard deadlines was imperative to sending a clear, consistent message to practices. Though there were changes in some HCH deadlines, the facilitator said that to avoid confusion and push practices to achieve their goals they did not let the practices know about these shifting deadlines:

"We would go out to the practices with hard deadlines. You will have this done by this date and then we just worked ... to make sure that our practices were ready. And sometimes we'd get within a few weeks of that deadline and the Commonwealth would say we're going to extend it for another three months. We just never even went there. We just said get it done by this date and they did." [PHN 3, interview, R1]

One PHN created a staff establishment document outlining the roles and skill sets of the practice facilitators so that practices could call on them to help with the different problems that they encountered.

Advocating for the HCH approach was a strategy reported for engaging practices. Even though practices signed up to participate, in some instances they weren't yet convinced about the model. One PHN used the fact that its practices were selected as an HCH to motivate them to follow through with changes:

"Oh, you got into Health Care Homes because... you were obviously one of the better practices that applied. And... stable and able to... make change management quite quickly, or apply it quite quickly." [PHN 8, interview, R1]

Facilitators also highlighted the benefits of the program to GPs from a personal perspective, because the training materials did not address "What's in it for me?" [PHN 4, interview, R1]

Practice facilitators talked about moving past relationships that were based on transactional/ 'tick-box' interactions (focussing on compliance) to ones that were transformational to achieve and sustain changes in the practices:

"...we also built some really nice relationships with them too because they got really comfortable that this wasn't just us handing it to them going, look, there it is. You signed up for it. Well, we're in this with you and just sort of keep repeating that..." [PHN 3, interview, R1]

Rapport building and trust were two of the ways in which the facilitators achieved transformational relationships. They were fostered by facilitators having empathy (appreciating the challenges for the practice), choosing words wisely ("you can't insult them. You have to be mindful of the way you speak to them. You cannot infer they are not delivering good care." [PHN 9, interview, R1]), and choosing the right moments to address issues ("If you push them beyond where they're ready to be pushed, ... you lose them" [PHN 5, interview, R1]). Facilitators stated that this type of relationship and trust building is crucial to the change process ("...there's a lot of trust and relationship building that needs to happen before you go in and say: Hey, you need to do this and you need to do that." [PHN 5, interview, R1]).

"Two steps forward and two back" [PHN 4.	Trust was lost when a facilitator would say to a practice that something was easy to use but it ended up being hard.
interview, R1]	Facilitators acknowledged that rapport building and trust take time:

"...this entire exercise has been built on relationships, lots of cups of coffee and really gentle phone calls. And people just getting used to your face and getting to the point where they were happy to accept your phone calls and that you weren't going to be a burden to them. That you might be actually of some use or value." [PHN 3, interview, R1]

One facilitator reported:

"So when we go out to those practices we're spending over two hours at a practice at a time trying to engage and build those relationships." [PHN 5, interview, R2]

Some facilitators were able to achieve trust earlier due to prior relationships with the practices (got "*in the back door*" [PHN 8, interview, R1]). One facilitator claimed that training the doctors in HPOS "got me the relationships" [PHN 8, interview, R1].

Practical aspects of working with practices

During the enrolment phase of HCH, practice facilitators reported regular contact with practices (daily during critical points), but generally reported formally meeting with practices at two-, three- and four-week intervals. Practice facilitators also reported practices asking them to hold off for a period due to other priorities, followed by bursts of activity when the facilitator was in the practice for a few days back-to-back.

Facilitators mostly had access to a practice manager or practice nurse when in the practice. Meetings were sometimes one-on-one with individuals, and sometimes jointly with members of the leadership team. Facilitators have found that many practices only have one or two individual drivers of the project which has been a barrier in regard to engaging the whole of practice in HCH:

"Because what we found a lot is it's the owner GP, or one GP, or even like a manager who's really driving it, but it's really hard to drive it if people aren't engaged and don't want to do it." [PHN 9, interview, R1]

Many facilitators discussed the importance of engaging not just with the practice owner, but the nurses, GPs, and the administrative team to ensure that the model runs smoothly and effectively within a practice. This approach has developed as practices have progressed to enrolling patients in the program.

"I guess one of the best things we did, was assisted registration... So, you'd have myself, as the practice nurse component, and one of the other girls from the admin component. That worked out really, really well, because we could get across the whole of the practice." [PHN 6, interview, R2]

In particular, facilitators reported challenges in getting access to GPs. This was mostly due to how busy GPs are, but it was commented that this could also indicate a low level of engagement on the part of GPs. PHNs reported that where practices had only one or two GPs within a practice participating in HCH, it was difficult for them to instil major practicewide changes:

"...if you've only got one or two GPs who are Healthcare Home GPs then you're basically rallying staff in a sense for one GP and that's a massive challenge." [PHN 5, interview, R2]

Where GPs were hard to access, facilitators offered lunchtime or after-hours meetings, and used telephone and email instead of face-to-face meetings. Communication with GPs was crucial, as in many practices they were the decision makers. Not having access to them meant that:

"...no one has the authority to do anything, which is a real nuisance. It's hard to get anything actually done." [PHN 5, interview, R1]

Facilitators reported issues with engaging with some practices:

"I haven't been able to support and assist practices or team members that are involved in Health Care Homes as much as I could have. And sometimes I'm pleasantly tolerated like a pharmaceutical rep." [PHN 7, interview, R2]

Sometimes practices' reluctance to engage reflected commercial concerns:

"I've got one practice who has issues around sharing what they're doing because they feel like that's then going to help another practice." [PHN 1, interview, R1]

Other facilitators commented on problems with engagement as a result of internal business practices and management lines:

"Well it's been tricky with the corporate practices...they can't seem to make a decision as such of who can come in and who can't, they all kind of have to go via head office. And they've got their own plan...and their own resources on what they're going to do with the trial." [PHN 9, interview, R1]

Establishing expectations around the requirements and frequency of practice-PHN engagement made it easier for some facilitators to get access to practices:

"We reached a point where we laid out some very clear communication lines and ground rules and explained the benefit of having us involved." [PHN 3, interview, R1]

One facilitator highlighted this positive change since setting certain ground rules around engagement:

"...We did set expectations as well and I think that was a really key thing ...that is what our expectations are from you and this is what we're going to provide you as a PHN...when we went out there we could also make sure that everyone in the practice knew what was going on, what was involved and that we had the whole of the team's buy-in and that the expectations were definitely set.." [PHN 1, interview, R2]

PHNs felt that it was necessary for them to set ground rules for the practices because they were not involved in the initial recruitment. They thought this had a negative impact on their overall access and relationship with the practices. The initial lack of requirements around how often practices should be in contact with facilitators was cited as a major barrier:

"...I know that in the contract it says something with engaging with the PHNs, but it doesn't specify how often you have to engage with the PHN, or who in the practice has to engage with the PHN or anything like that...There's quite a lot of practices, they know that...they don't actually have to do anything and no one's going to keep them accountable." [PHN 9, interview, R1]

"If we were onboard from the very, very beginning, where we could help with the practice recruitment and we could do these presentations, if we had known enough about it, it would be a very different... It would be very different, I would imagine because we would have the time and we would be able to really nut out some of the very ground level, the four building blocks down the bottom. We'd be able to get those sorted." [PHN 1, interview, R1]

Although some PHNs thought that they couldn't change what happened with the initial set of practices recruited to the program, they took the opportunity to change this with practices recruited later:

"Because we had a solid understanding of the model, we could go in and we also made sure that we had buy-in from GPs and...practice owners...So that we weren't putting ourselves in a similar situation that...nobody in the practice had buy-in or knowledge that they were signed up." [PHN 1, interview, R2]

Practices' experiences of PHN support

Many of the practices interviewed had positive feedback around the support that they have received from their PHNs and practice facilitators:

"I think they've been really good, yes, really good, helpful." [HCH coordinator, Practice 16, interview, R2]

"The PHN was always ready to help with advice and problem shooting." [Practice nurse, Practice 3, interview, R2]

"But yes, the PHNs have been really good, without their support we wouldn't have got as far as we did." [Practice manager, Practice 1, interview, R2]

This assessment was also reflected in the survey of practices, where 81% of practices said that the PHN practice facilitator was moderately effective or very effective in helping the practice prepare for HCH and/ or during the early stages of implementation (Table 29).

Response	Very effective	Moderately effective	A little effective	Not effective
Rating of the effectiveness of support provided by the PHN practice facilitator	49 (57.0%)	27 (31.4%)	9 (10.5%)	1 (1.2%)
Rating of the effectiveness of training provided by the PHN	22 (33.8%)	33 (50.8%)	7 (10.8%)	3 (4.6%)
Rating of effectiveness of the training and support provided to the practice by all sources	19 (22.4%)	48 (56.5%)	12 (14.1%)	6 (7.1%)

Table 29 – Rating of the effectiveness of PHN support and training

Source: Practice survey R2, Nov 2018-Mar 2019, questions 27, 28 & 30.

Practices reported that their facilitators assisted them with a variety of tasks, including:

- cleaning and analysing data (including profiling patient demographics)
- promoting quality improvement initiatives, such as patient recall
- answering practice queries relating to HCH implementation and operations

- meeting with practices regularly to track progress and discuss emerging and ongoing issues with program implementation
- educating individuals on how to use HCH IT tools and register patients in HPOS, HPA evaluation app, etc. and troubleshooting issues
- organizing patient enrolment forums to bolster enrolment numbers
- teaching staff how to enrol patients
- training staff members on how to create care plans
- helping practices 'sell the program' to their patients (often helping them to identify key messages about the initiative that align with individual practice values and goals)
- setting up the RST and educating staff members on how to use the tool
- create billing item codes and managing the bundled payment
- providing ad hoc support and guidance.

Despite generally positive feedback about PHN support, some practices would have liked more support, particularly more practical support:

"We really just needed some practical admin-like support. Doing an audit to make sure we were complying with all of it. To explain to patients what Health Care Homes enrolment was because it was just so time-consuming to enrol some people into HPOS..." [GP, Practice 7, interview, R2]

"I think they really needed someone out there with the PHN to actually put that activity into place and... really hands on. But that was read this manual, now you've got to do it." [Practice manager, Practice 1, interview, R2]

"...like if I had someone sitting with me showing me instead of me working it out myself, that would have been better. So I think you'd need some trained people to go in and actually sit with people and do the practical thing with the patient right there." [Practice nurse, Practice 4, interview, R2]

As reported earlier, staff turnover was another predominant issue affecting PHN training and support:

"No they've just swapped. Just recently...I can't think of her name..." [Practice nurse, Practice 6, interview, R2]

New facilitators not only had to establish a relationship with practices, but they were less knowledgeable about the program, which diminished the value of their support:

"Yes, it's changed a few times for us... So, yes, we have had a bit of a switch up. I don't know if it was just because it's a new thing for them as well. They didn't seem to be able to answer quite a lot of our questions." [Practice manager, Practice 6, interview, R2]

There was frustration amongst some practices and PHNs about the lack of information that facilitators received around general program requirements. Because facilitators largely received program training and information at the same time as practices, this made it much more difficult for them to guide and teach practices how to implement HCH. This meant that they did not receive the answers to vital questions when they needed them:

"She's been really helpful. She's come down and she's spent lots of time down here...She has also been incredibly frustrated, especially when we'd been trying to get things and find information out." [GP, Practice 17, interview, R2]

One practice commented that the differing training style of their facilitators has impacted the level of support and information that they have received:

"To start with, depending on who was coming to offer their support depended on what sort of support we got. One particular lady was more into how your recipes work... The other support person was very much into the practical work...One had worked previously as a practice nurse and one hasn't...But obviously they had a wide area as well and so there was a lot of information that didn't get passed through or was like, oh yes, I'll come and talk to you about that... One in particular was the online care planning. It wasn't until his last month that was even shown how to use that." [Practice nurse, Practice 14, interview, R2]

Though PHNs cited setting expectations with practices as a vital method to both holding practices accountable and motivating staff, setting lofty expectations around achieving specific enrolment numbers with practices who had a limited number of GPs engaged and were interested in testing the model appeared to discourage them from participating in HCH:

"So they [the GPs] were keen to start. It was more the quota of patients that was expected, which was a little daunting. So, the doctors were happy to dip their toe in but they weren't happy when they were pushed to make agreements to take on 50 patients each. They just weren't happy to decide to do that before they had even seen one in the system...Initially, [the] PHN said that was fine and then they were pushing and saying no, it needs to be 50, it needs to be by this stage, and then that's when the doctors said, look, it's just all too hard. That's not to say we weren't keen to try it, but I think having 50 patients per doctor was a little bit too much to ask when it's a trial." [Practice manager, Practice 8, interview, R2]

Practices suggested additional guidance in the form of PHN support, a formal training program, or case studies from practices who have successfully implemented this type of model. Because many practices interviewed were the first ones to try the HCH model, it was clear that, despite predominantly positive reviews around the PHN training and support, there were some teething issues associated with the program rollout:

"...having some kind of guide would have been a little bit better. Or... case studies about practices that have been doing it well." [Practice manager & GP, Practice 15, interview, R2]

"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]

Practices recommended ways to enhance the support and training from PHN practice facilitators through the Round 2 survey. These are shown in Table 28.
Table 30 – Top ways in which the support provided by the PHN practice facilitator could be improved (including responses from withdrawn practices)

Response	n (%)	Response	n (%)
Additional support and training around IT software	17 (16.2%)	More simplified and concise explanation of terminology and the program	4 (3.8%)
Increased flexibility and/or accessibility	12 (11.4%)	More transparency around government changes and program updates	4 (3.8%)
Decrease PHN Facilitator turnover for consistency	11 (10.5%)	Increased training for GPs and focus on GP engagement	3 (2.9%)
More in-person visits	8 (7.6%)	More handout and/or practice data sheets	3 (2.9%)
Support around processes for workflows	8 (7.6%)	Additional information around success methods and case studies	2 (1.9%)
More leadership/direction	6 (5.7%)	Additional training/support with care planning	2 (1.9%)
More training in general	6 (5.7%)	Facilitate meetings with other HCH practices	2 (1.9%)
Additional training/support around patient recruitment and/or enrolment	5 (4.8%)	More specialized training focused on specific practice needs	2 (1.9%)

Source: Practice survey R2, Nov 2018-Mar 2019, question 27.

Factors contributing to effective facilitation, training and support

The PHN survey identified a range of factors that were enablers and barriers to effective facilitation, training and support provided to practices. Many of these issues have been touched on in the previous sections. Table 31 describes those most commonly identified.

Iraining and support to practices			
Factor contributing to effectiveness	Factors impeding effectiveness		
Training			
The training provided to practice facilitators and their skill sets.	Lack of knowledge about HCH.		
Cultural and organisational factors			
 Engagement/ buy-in from practice staff. A patient centred culture based on a whole-team approach. Participation in previous initiatives Exposure to programs that require change management. Practice leadership. Practice motivation. Practice capacity - ability to adapt and implement a new process and ability to have protected time for preparation. 	 Lack of practice readiness The practice failing to appreciate the magnitude of change Staff turnover. Conflicting information about HCH at commencement of trial. 		

Table 31 – Factors contributing or impeding the effectiveness of facilitation, training and support to practices

Factor contributing to effectiveness	Factors impeding effectiveness					
Practical issues						
 Practice readiness (also cultural/organisational issue). Support from organisations providing HCH infrastructure (e.g. RST vendor, evaluators). Availability of tools (e.g. practice readiness assessment, action plan). 	 Unrealistic time frames for practices to complete training, managing change within practice Patient enrolment commencing in December. Delay in availability of training resources. Inadequate practical support resources for PHN facilitators during preparation/set-up phase. Poor infrastructure (e.g. different systems not aligning, IT systems not working). Lack of resources (funding, staffing). Practices running dual systems – for HCH patients and others Limited accountability of practices around reaching program goals/KPIs. 					
Relationships/ communication						
 Trust and strong relationships between practice facilitators and practice staff. Practice willingness to engage with the PHN and value their support. Practice facilitators' planning how they will approach the rollout with practices (e.g. communication of team structure, timetable of training activities aligned with online training). Collaboration with other PHNs. 	 Lack of engagement through whole practice, e.g. only one GP engaged and not others. Facilitator lack of access to key personnel within the practice Lack of a process for disseminating information within the practice. 					
Other	1					
 Tailoring facilitation to practices' level of readiness. Confidence in the financial model. 	 Competing priorities within the practice (HCH competing with business as usual and other programs/ initiatives). The HCH program representing too many changes at the same time Lack of protected time within the practice. Negative media coverage of HCH. 					

In the PHN survey, practice facilitators were also asked what changes they would make to their strategies to support implementation if the HCH program was extended. While some thought that the PHN's current approach was effective, the most common changes that they identified were:

 Better planning – More in-depth focus on change methodology and planning, including an understanding of practices' populations; project management and practice scoping (i.e. identifying a practice's needs early); setting goals and obligations for practices prior to implementation; and structured, planned and regular practice interactions mapped out prior to go live.

- Time dedicated time to establish and set-up the program and to allow the HCH team to be trained before enrolling patients.
- Additional resources for example, to enable face-to-face training for geographically dispersed practices and to fund locum cover to enable staff to receive training.

Facilitators also suggested changes to the program or system-wide changes, including:

- opportunities for practices to work collaboratively across the primary health care sector to develop and test models of care
- inclusion of a consumer champions in the transformation process
- a focus on the building blocks rather than on patient enrolments
- agreements detailing the commitment required from practices
- assessing for engaged leadership prior to selection for involvement
- nomination by the PHN of potential HCH sites
- a revised funding model through collaboration between PHNs and practices
- nurse-led training for nurses
- sustainability processes focused on business and information systems to support the change
- a more systematic approach to GP and patient participation
- thorough and consistent information on the requirements of the implementation.

Training for practices

PHN training initiatives

PHNs implemented a variety of training initiatives for practices:

- Workshops supplementing the HCH training online modules and on other topics of interest to the practices such as patient self-management and optimisation around the use of the bundled payment. A few brought in external guest speakers, for example, GPs from practices in other regions with experience of implementing HCH-like models from both a clinical and financial perspective.
- Training specifically around the funding model and implementing the bundled payment structure.
- A comprehensive education curriculum to teach practices the building blocks of the patient centred medical home.
- Training around enrolling patients. This includes hosting patient forums, assisted registration support, clinical training around use of the HARP tool, and helping practices tailor their own individual message around the benefits of HCH to their patients.
- IT training.
- Community of practice workshops and online fora for practices to communicate.
- Webinars/ teleconferences on specific topics, such as shared care planning and group appointments.
- Funding key people in practices to attend other relevant conferences/ training, for example, the AAPM conference.

Practices felt that this training was more useful than the online modules because it was often more interactive; they could ask questions, voice ideas, and discuss any implementation barriers that they were facing.

Some practices were frustrated with the amount of time they had to devote to attending these types of events. Some staff members were unable to take time out of their day or attend many of the PHN initiatives due to other commitments:

"we generate the income here seeing patients, so it's hard to get time off. We do a lot of stuff with our PHN outside of hours. There's not much that we actually get to go [to] in work hours." [Practice nurse, Practice 5, interview, R2]

Practices suggested a few ways that that their PHN could improve the overall training and HCH implementation process. These are shown in Table 32.

Response	n (%)	Response	n (%)
Additional onsite face-to-face training/meetings	8 (8.7%)	Participating practices share knowledge	3 (3.3%)
More general and earlier PHN support	8 (8.7%)	Hands on experience	2 (2.2%)
Additional online training sessions	7 (7.6%)	More training around patient recruitment	2 (2.2%)
Additional in-person training sessions	6 (6.5%)	Additional feedback to the Department of Health	1 (1.1%)
Training should be more relevant	6 (6.5%)	Additional incentives to attend sessions	1 (1.1%)
More practical training	5 (5.4%)	Additional information on patient issues	1 (1.1%)
Training should be tailored to the practice	5 (5.4%)	Greater flexibility in times	1 (1.1%)
Additional training around software	4 (4.3%)	More information on program updates	1 (1.1%)
More succinct training	4 (4.3%)	Smaller group meetings	1 (1.1%)
More training for GPs	4 (4.3%)		

Table 32 – Top ways in which training provided by the PHN could be improved

Source: Practice survey R2, Nov 2018-Mar 2019, question 29.

Online modules

The online training modules developed by AGPAL (see Appendix 1) required users to register and provide basic details of their role and discipline. These data allow analysis of the use of the modules, including completion rates. Also, users responded to evaluations of each of the modules as they completed them.

Data provided by AGPAL showed that at the beginning of September 2018, 1,822 people had received a login for the online training modules. The Table below shows the number of users that then started each module, and of these, those that completed the module.

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

Table 33 – Users commenced and completed HCH online training modules*

Source: AGPAL, September 2018, Notes: * As at 6 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 (5-11). Based on the staffing numbers received through the Round 1 practice survey, the numbers completing the foundation modules represent approximately 5% of the GPs participating in HCH and 9% of nurses.

The AGPAL data indicates that individuals who completed the modules reported improved understanding or confidence in the topic area following the completion of the module.

Through the practice survey, practices rated the effectiveness of the online modules. This is shown in Table 34.

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

Table 34 – Rating of the effectiveness of the HCH online training modules

Source: Practice survey R2, Nov 2018-Mar 2019, question 25. Active practices only

Through the practice survey, practices suggested ways to improve the modules. Table 35 shows these.

Table 35 – 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/additional visualisations	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.

When asked to describe the modules, many practices stated that they were "tedious" and "overwhelming." These complaints largely stemmed from the amount of time that it took staff members to complete the training. One of the issues that contributed to the length of the modules was repetition:

"... I think it was probably longer than it needed to be and maybe be a little bit more direct and speed it up a bit so it wasn't so convoluted. It was probably just a bit more information than was needed to actually deliver the message." [Practice manager, Practice 10, interview, R2]

"They took a really, really long time... Yes, it took a lot of time even for me to not do those extra activities. It still took me so long just to read it all and go through them." [Practice manager, Practice 2, interview, R2]

PHN practice facilitators also expressed similar concerns about the length of the modules:

"...the unanimous feedback, not just from PHNs but from the GPs and their team, is the amount of time it takes to do those modules. And they're having to do it on top of everything else ... If you're going to do those modules properly, it's not just a couple of hours that it takes to do the module, but you really need to be doing the activities and looking at all the resources that go with it." [PHN 2, interview, R1]

"And the other issue to do with the modules and the training... The model was...we would get trained by AGPAL to train people in how to do the modules and we would run the activities as facilitators with the practices.

The practices have almost kicked us out the door in that respect because they don't want to... They just feel they haven't got the time to devote to ...the number of activities that need to be done for each module. Because if you actually book the activities into the timeframes, you're not just talking about say one or two hours to do the theory. But you're also talking about several hours of all practice staff... to actually engage in the activities." [PHN 3, interview, R1]

Shortening and sharpening the content of the online modules was the most common suggested improvement by PHNs through the survey. Removal of duplication/ repetition was suggested as one approach to achieve this. Several facilitators also suggested that the modules be subset into components that are no longer than 8-10 minutes.

It was mentioned that online training is not ideal for rural and remote Australia. PDFs of the modules are available, but these need to be accessed online, and can only be downloaded once the module has been completed.

The fact that learners could not move to a new module until they had completed the previous one or were not able to get to a specific section in a module without scrolling through the content was a problem. It was suggested that the modules be structured so that you can pull out relevant information when needed. For example:

"Say the practice is at this level and they are starting to ...engage their leaders. What are some activities from the modules? What are some resources from the modules that would be relevant for that? ...the module that is relevant for wherever they're at will be a bit more accessible and they will pull out what they need, and they might go back to it to get more information. ...Just because [of] the accessibility of them, you're just constantly clicking, clicking, clicking." [PHN 1, interview, R1]

"Conceptualise the training as a resource to dip into rather than to 'work through', and reorganise the material around 'I want to know how to...."" [PHN 8, survey, R1]

To ensure that staff members completed the modules or at least retained the important information from the training, some practices summarised the modules. Examples of this included creating and distributing concise paper versions of the training, PowerPoint presentations, or meetings to relay important information from the training:

"I was lucky because our corporate office actually scaled down all of the training packages also into a slideshow, like PowerPoint presentations as well, so they collated all the information for me." [Practice manager, Practice 8, interview, R2]

"As I went through the modules, I summarised them into a simple little PowerPoint presentation, which I then showed to other people. I mean, the concepts are simple." [GP, Practice 12, interview, R2]

One practice asked each member of the team to complete one module and present the key points at their tri-weekly staff meetings. Apart from contributing to the team-based approach through discussing important aspects of the modules amongst each other, this ensured that each person completed some of the training:

"There was a set of modules that needed to be done for a [previous regional] program... And that took each nurse I think about five to seven hours to get through. So we decided we're not doing that again. Which is why we divided to conquer. But those team meetings had been pivotal in getting that going." [GP, Practice 9, interview, R2]

In several instances PHN facilitators reworked the material from the modules, tailoring it to reflect the needs of the practices they were working with.

Timing of when the modules were released was raised as an issue:

"The modules were also provided only a month before implementation which caused unnecessary anxiety and contributed to inertia and inaction." [PHN 9, survey, R1]

It was also felt the modules were pitched at 'entry-level', and did not acknowledge experienced learners:

"The positive commentary has come though when people have said, I didn't know anything at all about this Health Care Homes thing before and now I've done some of the modules I think I understand it better. So that's been an up-side, but we get very few of those." [PHN 3, interview, R1]

"They were a little bit patronising for some of the GPs. [One GP had, R1] talked about just sitting there and going next, next, next because it didn't add anything of value to what he thought." [PHN 7, interview, R1]

"Training modules weren't targeted enough and could have been broken up into different levels acquainting to general practice roles." [PHN 9, survey, R1]

Several practices suggested creating modules tailored for specific individuals within a practice such as nurses, GPs, practice managers, and receptionists. Individualising the modules based on individuals' roles and responsibilities would not only ensure that the training would be more concise, but would also allow staff members to obtain information that is most relevant to their positions:

"I think they could probably isolate it ... this is for admin, this is for nursing, this is for doctors." [Practice manager, Practice 2, interview, R2]

"They might be broken down to what a receptionist, what a nurse, and what a doctor might actually need to do. Because some of them, there was no guidance over that..." [GP, Practice 7, interview, R2]

"I feel like it wasn't really well aimed at who you were in the practice, so it's like you're getting all this information...I don't need to know 30 minutes of how to provide patients needed care." [Practice nurse, Practice 10, interview, R2]

It was also suggested the modules should be more practical and solution-based rather than presenting theory. Some recommended a more '*hands-on*' approach to training in the form of presentations, face-to-face meetings, and information presented in a group setting. Some

clinicians and nurses reported that they retain more information and learn more effectively in an interactive setting:

"It's not really the way that I learn. A lot of nurses learn hands on, not from reading. It's a lot harder. The modules that I have done, I went to an AGPAL [workshop] and I got more benefit from the AGPAL day than I did the module." [Practice nurse, Practice 5, interview, R2]

"I think the information was there....I would probably think presentation wise would be probably easier for people in a group setting"...a day of training might have been better." [practice manager, Practice 4, interview, R2]

"A lot of people like me for instance, I learn better face-to-face..." [practice nurse, Practice 15, interview, R2]

Staff members in administrative roles were more positive about the modules as they provided them context and helped them understand their role in the program:

"I think I found it very useful as well as the other admin staff because when you work in the admin area you don't know much about, you know, why are you doing this. And...the whole end result, what's the outcome...that really helped me understand my place in the workplace." [Practice manager & receptionist, Practice 11, interview, R2]

In their responses to a survey, PHNs suggested additional improvements to the online training:

- 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 (i.e. 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.

Practice training initiatives

In addition to the online modules and PHN training activities, practices reported participating in other training initiatives. These included:

- participating in the AGPAL conference
- attending master class practice management programs
- internal training reverse role play exercise; management observing and teaching GPs how to enrol patients
- staff upskilling through professional education days
- inviting speakers to discuss ways to improve practice operations and overall efficiency
- attending a study site tour in New Zealand to see the patient centred medical home in action.

Suggestions for directly involving practices in the training

Practice facilitators thought practice staff should have had the opportunity to attend training workshops with other HCHs. They commented that it would have benefitted key people in practices in the trial to have been brought together as a group:

"The GPs in a sense, other than our community of practice and our interactions with them on a one-on-one basis, they're not coming together as a group to talk about their lessons learned and what are they struggling with. That sharing of ideas more generally in the context of what the Commonwealth intended with the model. Although the GPs are doing this best that they can under the circumstances ... the Commonwealth haven't run any sort of sessions for GPs and practice principals about this. And there should be something in that going forward if this is rolled out more broadly. " [PHN 2, interview, R1]

"I think if they'd gone with the workshop approach of having state run or even a national one where they felt really special and they could really get outside views and see what was happening around other states and internationally. Some of my practices are fairly small, they're almost rural, Even the ones that are metropolitan they're very insular because they're just working flat out from dusk to dawn. ...They actually need to be removed ...from their environment ...and that ability to actually concentrate on the issue at hand or the education at hand. ...It would have been a bit of a [cost] ...that would have reaped benefits..." [PHN 7, interview, R1]

Another facilitator commented that this approach had been used for the Australian Primary Care Collaborative Program:

"It was bringing in the actual practices who were actually going to be part of what we were trying to change...And it was excellent. And those practices learn at each session. And went back and from that session you'd still have the facilitators helping them on the ground, but they'd be already absorbed all the information that was needed in order to get to the next. ... It was excellent." [PHN 8, interview, R1]

Responses to the PHN survey suggested face-to-face or webinar/ teleconference delivery of the training materials directly to practices as an alternative to the online modules. They also suggested a 'buddy system' between less and more advanced practices as a means of mentoring the less advanced practices. They thought that these strategies would be a more effective training approach and offer networking for practices.

Risk stratification

The PHCAG recommended risk stratification to identify patients with high care and coordination needs. The Department commissioned a risk stratification tool (RST) to be used for this. 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 Hospital Admissions Risk Program (HARP) tool (HARP, 2009) to assign patients to a complexity tier.

Overview of risk stratification for HCH

HCH focusses on patients with chronic and complex needs. Three tiers of complexity were identified, described Table 36 below.

Tier 3 Highly complex, multiple morbidity	Tier 2 Increasing complexity, multiple morbidity	Tier 1 Multiple morbidity, low complexity
 Make up approximately 1%* of the population. 	 Make up approximately 9%* of the population. 	Make up approximately 10%* of the population.
 Many require ongoing clinical care within an acute setting (e.g. severe and treatment resistant mental illness). Require a high level of clinical coordinated care. Some could be supported through better access to palliative care. 	 Most should be managed in the primary health care setting. Have an increased risk of potentially avoidable ED presentations and hospitalisations as their conditions worsen or if not well supported. Require clinical coordination and non-clinical 	 Are largely high functioning but would gain significant long-term benefits from improved engagement and structured primary health care support.
	coordination.Will benefit from self- management support.	

Table 36 – Tier characteristics

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

The Department estimated that of the population participating in the HCH trial, approximately 9.5% would be tier 3, 45% tier 2, and 46% tier 1 (Australian Government Department of Health, 2016b).

The Department planned a two-step process for identifying patients suitable for HCH:

- 1. Practice level: identify potentially eligible patient cohort.
- 2. Patient level: in consultation with the patient, and relevant family members and carers where appropriate, assess the patient's individual needs and risk factors, confirming their eligibility and stratifying their care needs to one of three complexity tiers according to their level of risk.

(Australian Government Department of Health, 2016a).

Following a systematic review of available tools (Oliver-Baxter, Bywood, & Erny-Albrecht, 2015) the Department commissioned the development of a RST that would assist HCHs in the above process. Precedence Health Care provided the RST, subcontracting the Commonwealth Scientific and Industrial Research Organisation (CSIRO) to develop a predictive risk model (PRM) used by the tool. The steps for HCHs identifying and assigning a patient to a risk tier are in the box below.

Steps for identifying and assigning a patient to a risk tier

- 1. The HCH downloads the Precedence Connector, which works with its clinical management system.
- 2. The Precedence Connector filters data locally and uploads de-identified patient data to its cdmNet Platform.
- 3. The PRM algorithm is run across the data within the cdmNet Platform to create a list of patients that are potentially eligible for HCH,
- 4. The data are passed back to the HCH, where the Precedence Connector saves the list of patients as a comma-separated values (CSV) file to the HCH's desktop computer.
- 5. The file is available for the HCH to review. In addition, when a clinician next opens the record of a patient deemed potentially eligible (e.g. during a consultation) the Connector displays an alert.
- 6. With the patient present (and with their verbal permission), the clinician undertakes the Hospital Admissions Risk Program (HARP) assessment (HARP, 2009). This occurs within the cdmNet environment. cdmNet pre-populates the HARP form with information from the HCH's clinical management system.
- 7. On completion of the HARP assessment, cdmNet generates an HCH certificate for the patient. The HCH certificate includes an HCH risk tier, based on the HARP score (see Table 38).
- 8. The Connector downloads the completed certificate to the HCH's clinical management system.

Precedence Health Care, 2017

The PRM used by the RST was purpose-built for HCH. Existing tools were considered but were decided against due to licensing costs or availability of data. Although the Patient Identification and Risk Stratification Working Group initially recommended using QAdmissions (Hippisley-Cox & Coupland, 2013) it was eventually found not to be feasible due to lack of data available in practice clinical management systems. The purpose-build PRM uses more than 50 variables and interactions, including:

- demographics (e.g. postcode, age, gender, indigenous status) as well as Socio-Economic Indexes for Areas (SEIFA)¹¹
- physiologic information (e.g. blood pressure, body mass index)
- medications
- chronic conditions
- pathology categories according to abnormal levels in test results

¹¹ SEIFA 2016 is the latest version and consists of four indexes:

Index of Relative Socio-Economic Disadvantage (IRSD)

Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD)

Index of Education and Occupation (IEO)

Index of Economic Resources (IER).

• lifestyle (e.g. alcohol and tobacco use).

The Table below lists the chronic conditions contributing to the PRM.

Condition group	Conditions
Respiratory	• Asthma
	Chronic obstructive pulmonary disease (COPD)
Atrial fibrillation	Atrial fibrillation
Cardiovascular	Coronary heart disease (CHD)
	• Stroke
	 Transient ischaemic attack (TIA)
	Congestive heart failure (CHF)
	Rheumatic heart disease (RHD)
Osteoarthritis	Osteoarthritis
Osteoporosis	Osteoporosis
Rheumatoid arthritis	Rheumatoid arthritis
Mental health	Depression
	Anxiety
	• Bipolar
	• Schizophrenia
	• Dementia
	Learning difficulties
Cancer	Cancer
Digestive	Crohn's disease
	Ulcerative colitis
	Coeliac disease
	• Steatorrhea
	Malabsorption syndrome
	Chronic liver disease
	Pancreatitis
Hypertension	Hypertension
Blood fats	 Hyperlipidaemia
	Hypercholesterolaemia
	Hypertriglyceridemia
Chronic kidney	Chronic kidney disease (CKD)
Diabetes type I	Diabetes type I
Diabetes type 2	Diabetes type 2
Venous thromboembolism	Venous thromboembolism
Other	• Falls
	• Epilepsy

Table 37 – Diseases contributing to the predictive risk model (PRM)

The Handbook for practices and ACCHS (Australian Government Department of Health, 2018c) instructs HCHs to: minimise free-text when drop-down menus are appropriate; ensure that diagnoses, medications and measurements are recorded; and ensure that discharge summaries and letters are completed.

The score returned by the PRM is the probability of the patient being hospitalised within the next 12 months. Patients with a score greater than 9.7% are considered eligible and flagged for a HARP assessment. The threshold of 9.7% was set by the Patient Identification and Risk Stratification Working Group as the value where the top 40% of patients in a practice at risk of hospitalisation in the next 12 months would be included.

Source: Precedence Health Care, 2017.

The Hospital Admissions Risk Program (HARP) tool (HARP, 2009) was one of a range of tools considered by the Department of Health's Patient Identification and Risk Stratification Working Group for the patient level assessment. The fact that this is an Australian tool used widely for chronic disease management in Australia (in Victoria over a long period of time, and more recently in NSW), was one of the deciding factors for its selection.

The HARP assessment covers:

- a. Clinical factors:
 - presenting clinical symptoms
 - service access profile
 - risk factors
 - complications.
- b. Factors impinging on self management:
 - psychosocial issues
 - self management impact.

The tool is reproduced at Appendix 2. The thresholds for the three tiers based on the overall HARP score are shown in the Table below.

Hospital Admissions Risk Program (HARP) assessme				
	HARP score range	HCH tier		
	0-4	Not eligible: below threshold		
	5-12	Tier 1		
	13-23	Tier 2		
	24+	Tier 3		

Table 38 – Tier thresholds based on the ospital Admissions Risk Program (HARP) assessment

Source: Department of Health interview.

The certificate generated by the RST is valid for 12 months. GPs can review the risk tier level when the certificate expires by repeating the risk stratification process. A GP can also review a patient's risk tier if there is a significant change in the patient's chronic condition within the 12 months. The HPOS bi-annual patient confirmation process requires the HCH to confirm the accuracy of each patient's enrolment details every six months, including the risk tier assigned by the RST (Australian Government Department of Health, 2018c).

A feature of the RST is an override mechanism. If a GP encounters a patient who in his/ her clinical opinion is at risk but is not identified as such by the tool, the GP can initiate a HARP assessment. They do this by selecting 'Start HCH Assessment' from the Precedence Connector menu (Precedence Health Care, 2017). In this screen the clinician needs to provide a reason that the patient meets the clinical level of risk for inclusion in HCH. This must be specific, and not due to errors or omission in the HCH's clinical management system (if the latter, the errors and omissions must be addressed and the tool re-run).

Of the information passed onto cdmNet, Precedence saves the following variables to help improve the tool:

- certificate number
- creation date
- expiry date

- patient hash (anonymous ID)
- organisation ID (practice ID)
- creator ID (unique ID of clinician logged into the system undertaking the HARP assessment)
- risk stratification score (score generated by PRM)
- HARP score
- HCH risk tier
- reason (if not determined 'at risk' by the PRM and the override function is used by the clinician).

Prior to the tool being implemented, CSIRO needed to validate the PRM. Since one of the key things that the PRM predicts is admission to hospital, this could only be done using linked primary care and hospital data. The initial validation was done with hospitalisation data from a private health insurer. However, this was not representative of the appropriate cohort because of the relatively lower average age of the people insured with the particular insurer and lower prevalence of chronic disease amongst the group compared with the general population. Subsequently data was obtained from the state of Victoria.

The PRM was not validated by 1 October 2017 when the first wave of practices began as HCHs. Instead, the Department instructed HCHs to use an interim –'threshold' – approach to identify potentially eligible patients (step 1 in the two-step process described above). Patients deemed suitable for enrolment were 45 years or older (or 35 years or older if Aboriginal and/ or Torres Strait Islander) with two or more chronic diseases. The second step would be the same as planned – using the HARP assessment. This interim approach was only used for a small number of the initial enrolments – approximately 70 – as the validated tool was available from 4 December 2017.

In August 2018 the Department re-instigated the threshold approach for some ACCHS in the NT. This was due to the reluctance of the services to implement the tool following the problems experienced by some services due to the interaction of the RST with other practice IT systems.

Details of the RST were published earlier this year (Khanna, Rolls, Boyle et al., 2019).

Initial data from the tool

De-identified data were provided to the evaluation team in early September 2019 for analysis for the evaluation. The data supplied relate to items and risk scores for the two stages of the risk stratification process the predictive risk model (PRM) and the Western HARP Risk Calculator (the HARP) (HARP, 2009). These reflect the two stages of the process involved in determining eligibility for HCH and the HCH tier. More detailed analyses are presented in Volume 4 (Chapter 7 and Appendix 5).

The overall mean for PRM scores was 0.183 (an 18% probability of hospital admission in the next year) and median 0.137 (a 14% probability). The mean ranges from 0.146 for Tier 1, 0.168 for Tier 2 and 0.225 for Tier 3.

Figure 13 shows density plots for the PRM scores for HCH patients. Most patients have 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 that were assigned to a higher tier in the second step of the risk process were more likely to have a higher risk of hospitalisation.



Figure 13 – Distribution of PRM risk scores by HCH tier Source: Risk stratification data provided by Precedence Health Care, to June 2019.

As indicated above, the factors influencing patient selection are not fully available in the practice 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 12,448 patients for which data were available, 30% (3,674) had a HARP completed because the GP overrode their PRM score. For those patients whose score was overridden, 25.4% were then allocated to Tier 1, 52.6% allocated to Tier 2, and 22.0% allocated to Tier 3.

Patients were more likely to have 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 (with a 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 diagnosis of complex care needs in frail aged, such as dementia, falls and incontinence (with a prevalence of 4.7% in Tier 1, 11.6% in Tier 2, and 34.5% in Tier 3).

Within the service access profile category, patients in Tier 3 were far 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).

There are eight complications, and each is allocated a score of one if the patient has it. The prevalence of the complications are 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.

Appendix 5 in Volume 4 provides detailed data on the above points.

User perspectives on the tool

Predictive risk model (PRM)

In the practice survey, practices were asked for their perspective on various aspects of the RST, associated processes and their suggestions for improvements. Table 39 to Table 44 summarise these responses.

Most active practices (67%) experienced some challenges with the risk stratification software and processes, but that these were overcome. A few practices (18.7%) reported "the process was very smooth" and others that "there were ongoing difficulties" (14.3%).

Most active practices (69.6%) reported that the PRM worked "very well" or "moderately well" in identifying patients suitable for enrolment in HCH. Practices that subsequently withdrew were more likely to rate this as "average" or "poor" (54.6%). More than half of the practices (57.6%) indicated that GPs used the override function for some patients.

Table 37 – Tractice failing of the fisk sitaline allot software and associated processes							
Response by	The process was	We had some challenges,	We experienced	Don't know/ no			
practice status	very smooth	but we overcame them	ongoing difficulties	response			
Active	17 (18.7%)	61 (67.0%)	13 (14.3%)	1			
Withdrawn	5 (38.5%)	4 (30.8%)	4 (30.8%)				

Table 39 – Practice rating of the risk stratification software and associated processes

Source: Practice survey R2, Nov 2018-Mar 2019, questions 2 & 13.

Table 40 – Assessment of how well the risk stratification tool (predictive risk model) identified patients suitable for enrollment in HCH

Response by practice status	Very well	Moderately well	Average	Poor	Don't know/ no response
Active	19 (21.3%)	43 (48.3%)	18 (20.2%)	9 (10.1%)	3
Withdrawn	1 (9.1%)	4 (36.4%)	5 (45.5%)	1 (9.1%)	2

Source: Practice survey R2, Nov 2018-Mar 2019, question 3.

The interviews provided an opportunity to explore these issues in more detail. Though some practices felt that the PRM did a sufficient job selecting the correct patients for HCH, others reported that it did not identify all patients that they felt were appropriate for the program:

"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, interview, R2]

Some practices stated that they have had to override the PRM in a few instances because the tool didn't identify patients that they thought should have been included. This led some practices to question whether predicting hospitalisation was an appropriate measure of risk for chronic disease management in the primary care setting: "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, interview, 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. The difference between tiering and a half score was 35 and her risk of hospitalisation came up as 7%. And yet, she has been in hospital three times in the last 12 months. The thing is wrong, it's just wrong...It's very diagnosis based, I think is one of the things. It has to be in the data and just pick up some of the other things. Taken specifically from haematological malignancy, misses it completely, even though they may be sick as a dog...Gastrointestinal malignancy or gastrointestinal disease, that's disabling for them. Misses it. Renal it picks up, diabetes it picks up, heart disease it picks up. Mental health it does. Asthma maybe. But chronic lung disease not due to asthma, misses it. It's diagnosis based..." [GP, Practice 5, interview, R2]

As stated above, some practices felt that the PRM did not consider all chronic illnesses and medical history when selecting patients, which has led to these issues. At one practice, this appeared to be the case even with patients who had common chronic conditions, such as COPD and diabetes. Other practices stated that the tool selected ineligible patients (e.g. clients of the Department of Veterans' Affairs). The inclusion of these types of patients made it more difficult for clinicians to filter the suggested patients returned by the tool. One practice, who has a culturally diverse patient population, stated that while the tool was useful they felt that some of the patients were not appropriate for the program due to language barriers or their preference to always see their doctor. A practice nurse stated that the PRM did not identify which doctor treated each patient; therefore, it made it a more time-consuming process to do this matching.

PHN practice facilitators also stated problems with the PRM. For example, they thought that it is potentially too narrow in that it doesn't pick up patients with specific health issues such as HIV.

Hospital Admissions Risk Program (HARP) assessment tool

The second component of the RST, the HARP assessment, was used by practices to stratify patients into one of the three designated tiers. The practice survey for Round 2 revealed that for around 41% of practices, the HARP assessment was undertaken by a nurse. In around 30% of practices it was undertaken by a GP and in 16% by a GP and nurse together (Table 41). The vast majority of practices (87%) reported that patients mostly ended up "in the right tier", Reasons practices believed this this didn't occur are shown in Table 42. Most practices (55%) report the HARP tool was "very useful" or "useful" for assessing the care needs of patients, but quite a few (45%) considered the tool of limited or no use (Table 43). Practices offered a range of suggestions on how the HARP assessment could be improved (Table 44).

Table 41 – Staff who mainly did the HARP assessments

Staff	Total
GP	27 (29.3%)
Nurse practitioner/remote area nurse	2 (2.2%)
Practice nurse	36 (39.1%)
GP and practice nurse	15 (16.3%)
GP and clinical manager	1 (1.1%)
Practice nurse and admin	1 (1.1%)
Other	3 (3.3%)

Source: Practice survey R2, Nov 2018-Mar 2019.

Table 42 – Assessment of whether patients mostly ended up in the right HCH tier

Response	Total
Yes	80 (87.0%)
No – reason for not being right:	10 (10.9%)
HARP tool doesn't identify comorbidities that impact on patient care	2 (2.2%)
Missing information in patients' notes	1 (1.1%)
Risk tier based on risk of hospitalisation does always reflect clinical need	1 (1.1%)
RST didn't always identify morbidities in the database	1 (1.1%)
Smoking was scored too highly by the HARP tool	1 (1.1%)
Don't know/ no response	2 (2.2%)

Source: Practice survey R2, Nov 2018-Mar 2019.

Table 43 – Usefulness of the HARP tool

Response	Very useful	Moderately useful	Limited usefulness	Not useful	Don't know/ no response
Usefulness of the HARP tool for assessing the care needs of patients	13 (14.6%)	36 (40.4%)	30 (33.7%)	10 (11.2%)	3

Source: Practice survey R2, Nov 2018-Mar 2019.

Table 44 – Suggestions for improving the assignment of patients to tiers (including responses from withdrawn practices)

Response	n (%)	Response	n (%)
Increase the weight for multiple morbidities	11 (10.5%)	Include a measure of cancer	2 (1.9%)
Remove age restriction regarding complex patients	8 (7.6%)	Include morbid obesity	2 (1.9%)
Simpler and clearer wording (for patient/ nursing team)	8 (7.6%)	Take into account the severity of disease	2 (1.9%)
Include complex medical conditions	7 (6.7%)	Distance to specialist care	1 (1.0%)
Include frequency of GP visits	7 (6.7%)	Include Aboriginal trauma	1 (1.0%)
Include a measure of health literacy	6 (5.7%)	Include mobility assessment	1 (1.0%)
Increase assessment/ weight of mental health	4 (3.8%)	Include the activities of daily living (ADLs)	1 (1.0%)
Impact of financial characteristic needs refining	3 (2.9%)	Increase the weight for disabilities	1 (1.0%)
Include a measure of compliance	3 (2.9%)	Questions on readiness to change seem inappropriate	1 (1.0%)
Include more risk factors	3 (2.9%)	Service access profile should include access to services at home	1 (1.0%)
Social issues	3 (2.9%)		

Source: Practice survey R2, Nov 2018-Mar 2019, question 9.

Throughout the practice interviews, several themes around the HARP tool emerged. Many practices felt that the assessment result did not accurately reflect the severity of patients' conditions, which meant that they felt that the allocated bundled payment amount was not enough to care for certain patients:

"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 ischemic heart disease, who was inand-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, interview, R2]

"The tiers were confusing too. I know [GP] and I had a lot of conversations about it. The tiers I don't think are reflective...We were very worried that the allocation of percentages in each tier weren't maybe reflective of every area. We have a very low socio-economic here, and elderly population as well. So just with that low socio-economics, there's a lot more chronic disease, a lot more instability." [Practice nurse, Practice 6, interview, R2]

"...Poorly weighted towards comorbidities. Very poorly weighted. I added a 10 I got one on tier three. And there's a couple of those other patients that I don't think we would be remunerated appropriately if we would continue if they're on a tier one or two." [Practice nurse, Practice 7, interview, R2]

"The other thing I have with risk stratification, when it brings up, you know, a different condition, it doesn't really cover everything, and then we have to make a thing that maybe they just fit in a lower tier. Otherwise, they are really very complex. But I just think they can't find the diagnosis or whatever, and that's why they're getting to a lower tier, otherwise they are really needing complex management." [GP, Practice 16, interview, R2]

Practices commented that the HARP tool poorly assessed patient comorbidities and did not list or weight certain chronic conditions, including cancer, chronic pain, and drug & alcohol addiction. While practices felt that the assessment tool weighted social aspects, such as isolation and quality of life, and mental health issues quite well, they felt that there should be more emphasis on patients' medical conditions, the time it takes for individuals to manage their conditions (taking off work for doctors' appointments), comorbidities, and physical needs.

Both practices and PHNs used the words "vague," and "subjective" to describe the HARP assessment questions, which they thought may have contributed to issues around interpretation and variability of patients' tier allocations. Some practices had different clinicians complete the HARP assessment for the same patients and found that their scores varied widely. They felt that the broad interpretation of the HARP questions was apparent amongst both practice staff and patients. Individuals stated that patients tend to underestimate the burden of their conditions, which may lead to lower tier placements. Practices suggested providing additional guidance by indicating who should be completing the HARP assessment with the patient, the context of the questions, how it should be completed, and the way in which staff members should interpret both the questions and answer options.

A few practices were concerned about the validity of the HARP tool and the ability to manipulate the results because they stated that they could determine patients' tiers by answering only one or two select questions in a certain way:

"...If you look at it, you can score everybody as a high impact, okay they might have five chronic illnesses and their ability to manage these is obviously not good because they're still requiring lots of input from the GP. Yes, is that a high impact? And if you say, yes it's a high impact that immediately puts them into tier three. Straightaway, without any other scores. Because that gives them 15 points." [Practice nurse, Practice 13, interview, R2]

One practice struggled with the personal nature of the HARP assessment questions. It was especially difficult for nurses to conduct the assessment with patients as they did not have the relationship that GPs have with some patients:

"I found that they don't like the HARP...some of them [the doctors] don't even have time, now trying to put it on to us nurses, but we don't really know a lot of the patients, so it's really hard. And some of the questions, like one of the questions about finances and things like that. One of the patients got really...what are you asking me that for? That's got really nothing to do with you, so I did find that one a bit tricky as well." [Practice nurse, Practice 1, interview, R2] PHNs also raised issues with the scoring approach for specific dimensions. One concern was that all chronic diseases are scored equally. Another is the emphasis on social factors. A consequence is that children are assessed as being more complex because they have a carer:

"I think the HARP model is really for 45+ so it really doesn't take into consideration some of the particular aspects of sort of under...if you're under 18 and ...need someone to drive them to their appointments. They do need a guardian therefore it's not taking that age factor into consideration. And if this model is not to exclude any age groups then the HARP system needs to take that into consideration." [PHN 7, interview, R1]

PHNs also offered some suggestions to improve the implementation of the HARP:

- "Improved clarification around wording and interpretation of HARP questions". [PHN 6, survey, R1]
- "Clearer, more concise guidelines and interpretations on the HARP assessment tool". [PHN 2, survey, R1]
- "Explanatory guide around interpretation of the HARP". [PHN 7, survey, R1]

Some practices stated that the level of funding allocated to the tiers was a major factor in their decision to enrol specific patients in HCH; they could not justify enrolling some patients in HCH despite the potential benefits:

"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 one or tier two, 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]

Other issues

Software implementation

A challenge with the RST was the compatibility of the tool with practice clinical management systems. Initially the tool was compatible with Best Practice and Medical Director and later ZedMed, Monet and MedTech32. Incompatibility with practice clinical management systems was the reason that nine of the initial 200 practices selected to participate in HCH did not take up the offer.

A related hurdle was installation of the system within practices, sometimes reflecting the IT environment and/ or skills of practice staff.

"Every time we went to register someone, it didn't work. And then, as a clinician you know, if something doesn't work now, you've got other things to do, that for me is the least of your worries." [GP, Practice 15, interview, R2]

Both Precedence Health Care and practice facilitators supported practices with this.

Compatibility issues with Communicare continued into 2019 and was impacted by a concurrent update to Communicare to flag HCH patients in the system and produce the extracts required for the evaluation. These technical and practical issues contributed to delays in the NT ACCHS implementing the program. To avoid further delays resulting from the RST, the Department of Health instructed the ACCHS to bypass the PRM and instead use the threshold approach for identifying potentially eligible patients, followed by the HARP tool built into Communicare.

In the PHN survey, it was suggested more time was required for testing prior to RST implementation. Enhancements to the tool suggest included:

- Displaying the most at-risk patients at the top of the list (including patients not yet enrolled).
- Building in an ability to filter for eligibility by selected criteria (e.g. chronic condition, last hospitalisation, regular GP etc.).
- Integrating with HPOS and other HCH enrolment processes.

Training

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 become aware of exactly how the RST worked. For example, one practice did not know about the CSV file of potentially eligible patients that the RST Connector saves 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. Practice facilitators suggested that they (the facilitators) required more training in the tool to help the practices with these types of issues.

The need for training for GPs on how patients are assigned to tiers using the HARP tool was identified by practice facilitators and the PHN survey. One PHN conducted a workshop with GPs 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 the next stage of the HCH program implementation (e.g. "[The] *RST is new to General Practice—consider developing a training tool for clinicians*" [PHN 4, survey, R1]).

Security

An initial challenge facing the RST was that data from practice clinical management systems would be transferred to 'the cloud' (online data storage). Practices were concerned about the security and confidentiality of the data. Precedence overcame this by ensuring that the data would only be stored within Australia and finding a satisfactory means of 'hashing' (deidentifying) patients' identifying information, so that no patient could be identified through data uploaded to the cloud.

Suggestions for improving the risk stratification process

When asked how to improve the RST and associated IT software, surveyed practices made a few suggestions (see Table 45)

Table 45 – Other ways in which the risk stratification software and associated processes could be improved (including responses from withdrawn practices)

Response	n (%)	Response	n (%)
Integrate the tool with practice software	12 (11.4%)	Allow reports to be uploaded to practice software	1 (1.0%)
Provide clearer guidelines on using the HARP tool	4 (3.8%)	Increase the number of tiers	1 (1.0%)
Notify practices when updating the tool	2 (1.9%)	Severity to be included in the calculation (sliding scale)	1 (1.0%)

Source: Practice survey R2, Nov 2018-Mar 2019, question 10.

In the initial survey for the evaluation, PHNs also identified improvements to the validity of the RST as the equal most important change (along with time for testing of the software prior to implementation) that could be made to the RST in the next stage of the HCH program implementation. PHNs suggested that the next version of the tool should be guided by findings from this trial on predictive performance.

One issue impacting the application of the RST and consequently the validity of its results is the completeness and accuracy of practice data. PHN practice facilitators thought that these data were sub-optimal in some practices. They suggested that clean data should be a criterion for selecting practices to participate in HCH.

Implementation of HCH within practices

This Chapter focuses on practice experiences of joining the HCH trial, getting set-up and making changes. The descriptions are drawn from interviews with staff from 18 case study practices and the PHN practice facilitators as well as surveys of practices and their staff.

Setting up for HCH

Practices that had been successful in their applications for HCH were announced in May 2017. At that time the Government also announced the intention that practices would start enrolling patients from October 2017 for selected HCH practices and from December 2017 for others. Various activities had to occur had to occur within the six-month window:

- Some details of the program itself had to be finalised.
- The program infrastructure had to be finalised: risk stratification software, training modules and evaluation.
- Agreements with successful practices had to be signed, including with replacement practices where those initially announced decided not to proceed.
- PHN practice facilitators had to be appointed and trained.
- PHN practice facilitators had to commence their engagement with practices, support practices in setting up program infrastructure and train practice staff.
- Practices had to respond to the initial evaluation surveys of the evaluation.

Practices and PHN practice facilitators identified many challenges that they faced in this initial set-up period. These are outlined below.

Time for preparation

Practices and PHN practice facilitators felt the timeframes initially set out for the trial were insufficient, particularly given the level of change required:

"One of the absolute problems of this program is that it's not long enough." [Practice manager and GP, Practice 5, interview, R2]

They felt that lead time was imperative to successfully implement this type of change and figure out how to operate the model at an individual practice level:

"So, we had a lead time, and you've got to have that long lead time. And 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, interview, R2]

"We're starting to enrol a lot more patients now, that's what I can tell you. It just got off to a slow start here but we are starting to get on top of it. Then we've got more GPs engaging with it, just in the last two weeks. So it just takes time, I think, it's just a really time-consuming thing to make change." [Clinical pharmacist, Practice 11, interview, R2]

"Look I think really just make sure that you've got everything set-up in place, that you've got your systems in place and then you've probably worked out what your policies are going to be and your procedures around how it's going to look...it would have been nice to maybe have a bit more of it planned and go exactly this is how it needs to look." [GP, Practice 10, interview, R2]

Case study

In a small practice located in a suburb of a large city, the lead GP focused on exchanging information between patients and the practice to more effectively monitor patients' chronic diseases. He created an app where patients could record their blood pressure, weight, height, and other health metrics. The practice also has a clinical pharmacist who was a key driver in the HCH implementation. The clinical pharmacist impressed that it takes time to change the culture within the practice, particularly to engage the GPs given that the model means changes to the way that they practice. At the time of the interview, the GPs were beginning to enrol patients and get more interested in the HCH model of care.

PHN practice facilitators distinguished between infrastructure changes and more fundamental changes in the way practices operate and deliver care. The former requires training and set-up of key processes (such as installing software, cleaning up data, setting up HPOS) and the latter includes the changes to culture, mindset and buy-in from key staff. While additional resources may have helped with changes to infrastructure, the conceptual changes could not be compressed into a shorter period.

Facilitators drew on their experiences in being involved in similar initiatives to HCH, such as PCMH readiness and the Australian Primary Care Collaborative Program. They reflected the changes in those initiatives took time:

"...they were allowed to really go through that change management process and put processes [in place] and let it happen organically" [PHN 1, interview, R1]

Several practices stated that short timeframes also meant that they didn't have enough time to train; they didn't have time to do the online modules or attend events hosted by the PHN. Therefore, they either had not completed the modules or had to go through the training in their own time. One GP described the expectations of practices around program training as "insane, overloaded, overbearing."

Practices and PHNs strongly suggested increasing the lead time and allowing practices to set-up the model prior to enrolling patients. Individuals suggested everything from simply extending program timelines to incorporating a practice readiness program into the HCH training:

"I think they've made an error with their timeframes ... I think that the timeframes, unquestionably, need to be blown out. Specifically, I think the enrolment timeframe needs to go much longer." [GP, Practice 12, interview, R2]

"It's gained momentum. It probably needed this year, and probably needed a second year actually, to gain momentum before the trial actually started." [Owner and practice manager, Practice 6, interview, R2]

"...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, interview, R2]

Timing of enrolment commencement

PHN practice facilitators thought the December start date was a problem for enrolments as key staff take leave during the December-January period. Also, February and March are busy times for practices due to the beginning of the school year. Often practice facilitators couldn't start working with practices until February, and some not until March.

Buy-in from key staff

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"Buy-in before they sign"
[PHN 1, interview, R1]
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PHN practice facilitators observed that practices struggled getting HCH off the ground because they hadn't achieved buy-in from key staff in the practice prior to applying to become an HCH. One practice facilitator observed:

"...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 cases, practice owners, the head office of corporately owned practices or practice managers had submitted the application to participate in HCH but had not adequately discussed the submission with the GPs. Inadequate consultation within the practice resulted in some declining the offer to participate, and others who took up the offer only to withdraw subsequently or to take longer to start implementing due to needing to get buy-in from key people in the practice. One facilitator commented:

"... 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]

Another consequence was that fewer GPs within practices were willing to participate that originally indicated in responses to the EOI:

"So when they signed up, all GPs were put forward, but ... now that has significantly reduced." [PHN 2, interview, R1]

One facilitator described what it was like working with practices who had little buy-in from key people in advance of the implementation:

"...with any change management process if you don't bring people on board from the outset and they have ownership of it it's like pulling teeth and that's what it's been like." [PHN 5, interview, R1]

Practice facilitators suggested that the HCH application process should require practices to confirm they had agreement from key practice staff:

"...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]

Another suggestion was that the agreements to participate in HCH should have been 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]

Information about HCH

"No, it's in your contract" [PHN 5, interview, R1] Practice facilitators reported that many practices were surprised at some of the requirements for HCH. The requirements had not been fully articulated when they applied:

"...the initial information was very basic, and they didn't realise how much this would involve." [PHN 10, interview, R1]

"Original contracts didn't relate to transformation of care. The applications didn't indicate in enough detail what was required." [PHN 9, survey, R1]

Some operational details of the program had not yet been worked out when the EOI was issued and there were still details to be finalised when the first wave of agreements was signed. For example, how practices would work with the RST, or the need to enter patient contact information into a separate database for the evaluation. The Department of Health acknowledged this:

"... one of the challenges for us was timing. So, obviously, we went out at a time when we didn't have all the information ... there were elements of the program that were still, being defined when we went out." [Department of Health]

Practice facilitators acknowledged the complexity of the program and that not everything could be laid out upfront:

"...people didn't know what they were signing up for, because the program actually wasn't clear at that stage. And [the Department of Health] may, have made up things as they go along. Which, you know, fair enough. It's very complicated." [PHN 8, interview, R1]

Another reason that practices were surprised about the requirements of participating was that they hadn't carefully read the agreement before signing it. For example, some practices were under the impression that the PHN or the Department would pay for the shared care

planning software that they were required to implement. Mixed levels of understanding program requirements made the practice facilitation task challenging:

"...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]

Reading the practice handbook may not have conveyed all the information about what the program entailed:

"...the handbook was not sufficient to give [practices] a real idea about the amount of resources both in times and personnel that would be required". [PHN 7, interview, R1]

Practice facilitators suggested that in the future, the Department should provide information sessions for practices at the EOI stage:

"So that I'm getting the right people applying for the future trials." [PHN 10, interview, R1]

Some practices believed they didn't have enough information about what to do initially, and this delayed their implementation:

"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, interview, 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 openended 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, interview, R2]

The PHN practice facilitators had also identified this in earlier interviews:

"...from what I'm hearing from these practices, some members of staff still don't quite know what they're supposed to do and what this means to them. And that's quite a big barrier to get over I think to get change implemented." [PHN 7, interview, R1]

Competing priorities

Some practices stated that they found it difficult to run a busy practice while simultaneously integrating the HCH model:

"We've spent a lot of time trying to understand the process of Health Care Homes, it's only sort of just coming up and running now...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]

PHNs had also recognised this:

"...they've been overwhelmed with so many other day-to-day practice issues that Health Care Homes in some of my practices has just taken a back seat. And therefore, it's been really stressful for them and frustrating I think for staff and for me in some cases." [PHN 7, interview, R1]

The pressure to adhere to the program timeframes was difficult for practices, especially for enrolling patients. Because of the additional time it took practices to establish their processes, practices reported that they had little time left before the fast approaching enrolment deadline. One facilitator commented:

"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]

Case study

The GP of a solo practice located in a small, rural town was motivated to join HCH due to experience with other quality improvement initiatives and the team-based approach to managing patients with chronic disease. The practice was slow to progress with the model and enrol patients. This was due to both staffing changes and difficulties with IT. Implementing the RST was difficult for the practice. The GP identified its rural location as one of the factors contributing to the IT issues.

Magnitude of change

"They don't know what they don't know" [PHN 10, interview, R1] PHN practice facilitators described the change required by practices to transform to an 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]. One facilitator reflected:

"I don't think there's been a significant change like this in the twenty years that I've been involved [in general practice]." [PHN 7, interview, R1]

The impact on all parties was recognised:

"... it's not just the practice. We've got to start looking at changing the way [patients] think. It's the patients as well but it's also back in PHN land, it's changing the way PHNs think about practice support as well." [PHN 1, interview, R1]

Practice facilitators commented that in the early stages of HCH, some practices did not appreciate the extent of change required. For example:

"...we went in there a lot of times and said, right, okay, so this is about Health Care Homes and it's practice transformation and their jaws sort of started to remove themselves slowly from their face because that's not what they had considered. They thought this was just, oh, we'll be pretty much the same but it will be paid differently." [PHN 3, interview, R1]

The misconception that the total sum of the change required being paid differently was reiterated:

"[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]

Set-up costs

Some practices described the high cost of setting up for HCH. Costs mainly related to IT setup and loss of time and productivity associated with training and patient enrolment. Several practices believed the \$10,000 grant was insufficient to cover these costs and the amount of time it has taken to understand and implement the model:

"...the rest is about us being slow because of uncertainty around the payments and where we going to end up in trouble if we suddenly registered a whole heap of people. And just educate staff, the amount of money that we give you to actually implement the thing is nowhere near what it costs." [GP, Practice 10, interview, R2]

Other practices also believed the opportunity costs associated with their program participation were not taken into consideration when the grant amount was determined:

"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, interview, R2]

Another GP stated:

"...the \$10,000 assignment payment sort of just got chewed up massively... To say, look, to get this software into your organisation and have it run, it might be \$150,000 for the first year, but then we'll have a maintenance cost of \$50,000 ongoing... So I think they massively underfunded the practice getting ready for the initial implementation." [GP, Practice 7, interview, R2]

Information technology (IT)

Practices were required to set-up and use different technologies to implement HCH, which

"At the beginning the biggest issue was IT, getting the IT up and running" [GP, Practice 4, interview, R2] they reported having problems with. They mainly mentioned the Department of Human Service's Health Professional Online Services (HPOS) system and the RST in the context of IT issues. (Issues with installing and operating the RST are described in the previous Chapter.)

Practice managers and administrators reported using HPOS to register HCH patients as "straightforward" and "easy." However, practices located in rural and remote areas reported problems with connectivity and logging into HPOS:

"We have lots of internet problems so me trying to lodge onto, log onto HPOS to do this... Sometimes I can logon and it takes me five seconds to logon to HPOS, sometimes it takes six or seven attempts." [GP, Practice 17, interview, R2]

One practice encountered a situation with a dual enrolment of a patient in HCH, which wasn't picked up at the time of enrolling the patient in HPOS. It was only when the practice didn't get paid for the patient that they discovered that the patient was enrolled as an HCH patient at another practice. To prevent duplicate enrolments in the future, the practice suggested a function in HPOS to check patient eligibility.

However, for most practices these issues were eventually resolved:

"In the beginning we had lot of hiccups when we first started last year in November...There were lots of hiccups. Lots of hiccups...but now it's all fine. I haven't had any hiccups with going through the tool and things and doing all of that because I download everything, and I store it. And then, I import it into the patient's file so it's there in their notes." [Practice nurse, Practice 3, interview, R2]

Practices sometimes mentioned large costs associated with upgrading their IT system to integrate and operate 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, interview, R2]

Despite practices ironing out many of these issues and successfully installing the IT tools, some implementation problems took a great deal of time and effort to resolve and in some instances are ongoing for rural and remote practices:

"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, interview, R2]

"We went to [the PHN] and our facilitators saying, can you help us with these IT costs because we've had our third breakdown, and each time it's that you've got to come in and install a bit of software and restart it..." [GP, Practice 7, interview, R2]

Practices suggested that to improve the IT set-up and daily operations a simplified system would be best:

"Maybe a streamlined approach to it rather than logging on three separate things..." [Practice manager, Practice 12, interview, R2]

Others hoped for more integrated systems:

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, interview, R2]

Clinical data

Practices reported various processes around data to prepare for and operate HCH, including:

- going through patient files to ensure that all information is uploaded
- inputting and formatting relevant medical history for coding purposes
- updating incomplete medical files and ensuring all information is up-to-date regarding history, diagnoses, screening, health checks, etc.
- recording demographic, billing, and team care arrangements
- monitoring data entry processes (i.e. ensuring individuals do not stray from the standard of coding patient history or write free-form notes).

These types of improvements in data have allowed practices to more effectively monitor their patient data and track their metrics. Though the program is in the early stages, some practices reported that they are interested in observing long-term changes in health outcomes and analysing patient trends using their data.

Scale

"This is a lot of work for such a small group of patients" [PHN 2, interview, R1] For some practices, the program only involved a few of their GPs and patients, and was therefore hard to justify the investment of time and other resources:

"... 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]

"And it's the minority of patients of Health Care Homes, yet they're probably taking up the majority the initial work." [PHN 2, interview, R1]

For many practices was that the program involved running dual systems – one for HCH patients and one for other patients – which created some tensions:

"...they're running two systems. For a small group of patients, we're asking them to have this massive transformational change and the rest, the majority is business as usual and that's also a tension between the two." [PHN 1, interview, R1]

"...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]

Implementing the HCH model

"It's not a one-size-fits-all" [PHN 4, interview, R1] PHN practice facilitators felt that an HCH model of care had not been sufficiently defined as part of the HCH program. It was recognised this was deliberate on the Department of Health's behalf. However, it meant practices didn't always know what to do:

"...the Department wanted [practices] to be innovative so [was] less instructive ... But I think that's a real Catch 22 because ...a lot of them have floundered with what it would look like because it's not very directive." [PHN 7, interview, R1]

"...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]

Case study

A large practice with over 15 GPs reported experiencing some initial issues implementing a shared care planning tool, and the staff feel that the program has brought on some additional administrative work. However, the owner stated that the GPs and nurses are happier operating under the HCH model. By delegating some tasks to the nurses, the GPs have more time to tailor their patients' care, and the nurses are enjoying being more involved in care management and education.

Nevertheless, both practices and PHNs also thought that flexibility in the model was important:

"Practices that have been doing it well. The ones that I did hear about, I thought, this isn't going to work at my practice...Full on use of Allied Health and everything, but his practice has three GPs. You work very differently at a three GP surgery to a seven GP [practice]...As I said, all of our clinicians have different special interests...Whilst it was interesting, it made me realise that that's not how it's going to work with our practice. A lot of the stuff that I read, and gone, this is great, I thought, I wonder how it's going to be two years later." [GP, Practice 15, interview, R2]

"...I think the other factor is it also depends on the individual...I think it depends on who's running the show and how they want to do it." [Clinical pharmacist, Practice 11, interview, R2]

"...so that they know how they provide care to those Health Care Home patients that's different from any other practice." [PHN 4, interview, R1]

Some practices were interested in pursuing a middle ground where PHNs and governing bodies would provide some high level parameters and practices would have the flexibility to implement a model that works for their individual practice. Sharing between practices was a big part of this: "I feel like we've got some Play Doh and you can make something of it. Everyone's making different things, and you kind of look over to see what everyone's up to, are they using it in different innovative ways. So, there's that uncertainty which could be removed from wave 2. But still allowing enough flexibility as such that they can try out the ideas, and things that they have wanted to do." [GP, Practice 9, interview, R2]

"if you're going to give advice to practices...Probably don't reinvent the wheel...Just get it from other practices...steal shamelessly, share generously..." [Practice owner, Practice 9, interview, R2]

In interviews, practices reported varying interpretations of the objectives of HCH. Perspectives of the program often aligned the practice's mission. Practices predominantly mentioned the following objectives:

- Encouraging patient activation and education ("it's patient education...that's really the biggest thing in all of this, it's patient education." [Practice manager, Practice 4, interview, R2]).
- Individualising patient care/ more patient-centred model of care.
- Improving continuity of care.
- Reducing hospital admissions.
- Improving the quality of chronic disease management and patient care through better planning and monitoring.
- Offering better access to patients beyond traditional face-to-face consultations.
- Advancing team-based care and teamwork in primary care.
- Taking the pressure off GPs.
- Preventative care.

What changes have HCH practices made?

Through the Round 2 practice surveys (late 2018/early 2019), HCH practices were asked whether they were implementing or planned to implement various changes commonly associated with PCMH models. Practices were also asked whether the change was already a feature of the practice prior to HCH. The responses to these questions are shown in Table 46. The most common changes practices intended to make were:

- Reassigning components of care usually undertaken by a GP to a nurse (e.g. patients routinely see a nurse prior to seeing the GP when they attend the practice).
- Proactively contacting patients to monitor their health.
- HCH patients able to telephone the practice and talk to a nurse or GP about their health concerns.
- HCH patients able to refill scripts without a GP consultation.
- Improved systems for follow-up and re-call of HCH patients (e.g. for review or prevention).
- Regular meetings of HCH practice team (e.g. GPs, nurse, admin staff) to review HCH patients and their care needs.

	Feature of	Will this be a change you are planning to make?			
Potential change during HCH implementation	practice prior to HCH	Implementing change now	Plan to implement by the end of 2019	Not a focus during HCH	
Improving the completeness and quality of the data in the practice clinical management system	71 (77.2%)	43 (46.7%)	8 (8.7%)	4 (4.3%)	
Reassigning components of care usually undertaken by a GP to a nurse (e.g. patients routinely see a nurse prior to seeing the GP when they attend the practice)	56 (60.9%)	46 (50.0%)	11 (12.0%)	8 (8.7%)	
Reassigning components of care usually undertaken by a GP or nurse to a medical assistant (e.g. clinical measurements and assessments)	26 (28.3%)	26 (28.3%)	14 (15.2%)	30 (32.6%)	
Regular meetings of HCH practice team (e.g. GPs, nurse, admin staff) to review HCH patients and their care needs	27 (29.3%)	47 (51.1%)	24 (26.1%)	8 (8.7%)	
Introducing new roles within the practice (e.g. medical practice assistance, care coordinator, community care worker)	23 (25.0%)	28 (30.4%)	18 (19.6%)	26 (28.3%)	
Improved systems for follow-up and re-call of HCH patients (e.g. for review or preventive services)	55 (59.8%)	47 (51.1%)	14 (15.2%)	3 (3.3%)	
Proactive contact with patients to check how they are going (e.g. by telephone)	39 (42.4%)	54 (58.7%)	14 (15.2%)	4 (4.3%)	
Dedicated clinics for HCH patients with specific chronic illnesses (e.g. diabetes, osteoarthritis)	16 (17.4%)	20 (21.7%)	26 (28.3%)	31 (33.7%)	
Group consultations involving two or more patients	8 (8.7%)	7 (7.6%)	30 (32.6%)	43 (46.7%)	
Joint consultations for a patient involving a GP, nurse and allied health (e.g. pharmacist)	25 (27.2%)	18 (19.6%)	29 (31.5%)	29 (31.5%)	
HCH patients able to telephone the practice and talk to a nurse or GP about their health concerns	48 (52.2%)	59 (64.1%)	5 (5.4%)	3 (3.3%)	
HCH patients able to communicate by email or secure messaging with the GP or nurse about their health concerns	22 (23.9%)	42 (45.7%)	15 (16.3%)	22 (23.9%)	
Introducing a patient portal through which clinical information is shared with HCH patients	13 (14.1%)	13 (14.1%)	25 (27.2%)	38 (41.3%)	
HCH patients able to refill scripts without a GP consultation	35 (38.0%)	56 (60.9%)	9 (9.8%)	10 (10.9%)	

Table 46 – Changes that are a focus during the HCH implementation

Source: Practice survey R2, Nov 2018-Mar 2019, question 22. Active practices as at 31 August 2019.
Practices were also asked whether the "processes for providing care to patients with chronic illnesses changed following HCH implementation". More than half (54.3%) of practices indicated that they were. When asked to describe these, they mostly overlapped with those listed in Table 46. The most common were:

- Nurses have more responsibility: patients can see the nurse for routine health checks, care planning, education, goals, and care monitoring.
- Nurses following patients up to monitor their chronic conditions.
- Access to the nurse (and in some instances the GP) through phone or email.
- Improved external and/or internal team care.
- Patients can request prescription refills and/or referrals without seeing the GP.

When the interviews were conducted (one year from when practices could start enrolling

"It's more planned care, whereas at the moment in Medicare, it's reactive care." [Practice manager, Practice 5, R2] patients), practices were at varying stages of implementing HCH. Some had set-up processes that would impact how they manage their patients with chronic disease in the future, but had not yet made changes that would be visible

to patients. Others enrolled only a few patients to test the model, and yet others had made large changes affecting patients and staff.

Those that had made changes reported the following additional services for enrolees:

- home visits by nurses
- education and lifestyle groups (e.g. walking group, diabetics group, dietetics group)
- recalls for preventative care
- skype and/or telephone consultations
- remote monitoring, including through computer apps for patients to enter key physiological measures
- over the phone repeat prescription requests
- priority access (HCH membership cards and designated phone line and email)
- consults and/or medication reviews with practice pharmacists
- enhanced team-based approach to care (e.g. delegation of clinical care tasks by GPs to nurses, introduction of new roles within the practice such as HCH coordinator or nurse, medical practice assistant).

Case study

Staff of a medium-sized practice located in a rural township reported that one of the most positive aspects of implementing HCH was that it allowed nurses to do home visits without the doctor. This improved patient care and expanded the scope of the nurse's role. Prior to implementing HCH, the GPs did not have the time to routinely do home visits. With HCH the nurses were able to regularly visit patients with mobility and other issues that made it difficult for them to visit the practice. Subsequently however the practice withdrew from the program.

Case study

A practice with four doctors and three nurses located in a small city reported already providing many of the chronic disease management services that HCH promoted prior to implementing the model. The practice joined HCH as the team felt that the program would enable it to continue operating in this manner. Staff described some issues understanding and operating the bundled payment and engaging allied health professionals, specifically using the shared care planning platform. Beyond these drawbacks, staff members discussed the success that they have had with introducing patient group sessions. The clinic offers a walking, dietician, and psychology group. The staff reported that the patients enjoy these sessions, and they will continue to monitor patient outcomes as these activities continue.

Some practices identified changes they wanted to make, but had not yet implemented them:

"Well, I like the opportunity to perhaps implement education sessions down the track, one-on-one coaching and as I said, the access they're going to have to adopt as when they need it." [Practice nurse, Practice 15, interview, R2]

"At the moment it's phone consults for our practice, but we're hoping to open that up to Skype and that sort of thing..." [GP, Practice 9, interview, R2]

"...the other one is also trying to move beyond the practice team to the next couple of layers of the team. For example, our allied health people, communication with the hospital, and perhaps some of the specialists." [GP, Practice 12, interview, R2]

Practices that had made changes reported that HCH was positively impacting their internal processes, team arrangements, and the quality of patient care:

"I think it's very individualised, I think that's a really nice part of it, because [the patients] feel pretty special." [Practice nurse, Practice 4, interview, R2]

"...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]

"I think I'm giving more support, basically...there's more of that planning ahead for scripts... or if they need anything while that doctor is away, we try and plan for that outage. And we're informing the patient that that doctor will be away, is there anything we can help you with? We try and get them thinking ahead and taking a bit of ownership of their health care...We try and encourage the patient to ring if they have a problem." [Practice nurse, Practice 6, interview, R2]

"...I often find for the patients with Health Care Homes, you feel more able to say, please ring us if you have got a question or you're worried about something or that's what we're here for as part of this program, which I mainly do sort of say to our other patients as well but it's not often as well managed because they're not under that umbrella." [Practice nurse, Practice 10, interview, R2]

"...I feel like patients get more team members involved in their care, which is a good thing. Because most of the patients before, they only saw the doctor, now they get chances to see me, to see our other allied health." [Clinical pharmacist, Practice 11, interview, R2]

"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, interview, R2]

"All our patients that are registered on Health Care Homes have much bigger nurse involvement even if it's just a telephone call, they have much better follow up and much better management. Home visits I suppose has been the biggest positive out of Health Care Homes." [Practice nurse, Practice 13, interview, R2]

"If the patients are enrolled in Healthcare Homes, they won't say, as far as, slip through the cracks I think, because we've got the Healthcare coordinator...We know who's on the list and we follow them up, so to speak. So, they're called every month...so we know what's happening with them." [Practice manager, Practice 16, interview, R2]

"Having that group session, I think it's taken the focus off them as an individual and they've learnt more from each other. Now that they've had the experience and they've found it's a positive one they want to keep coming." [Practice manager, Practice 18, interview, R2]

Case study

A large rural practice that enrolled over 150 patients was initially negative about the potential of the model to take pressure off the GPs. However, a year into implementation, the practice reported seeing improvements. Patients were now speaking more with the nurses, and the alternative modes of delivery (e.g. using the phone for requests for prescriptions and referrals or other questions) were creating more time for the doctors. The nurses were also happy about broadening their scope of practice, and there was a feeling that patient care was more individualised under the HCH. The practice was still confused around the payment model and still wanted guidance on implementing the model, but overall, the practice's view of the program changed from negative to positive.

While some practices were making changes, others stated that they already had measures in place for their chronic disease patients, such as care plans, access via phone, nurse-led management, team-based care and individualised treatment – similar to the responses to the survey (Table 46). Therefore, they did not intend to change the way that they practiced:

"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, interview, R2] "It's actually more that it enables us to do what we were doing." [GP, Practice 11, interview, R2] In some instances practices commented that the HCH model was providing financial support for the quality of care they were already delivering:

"...so it's just managing the chronic disease management better I think....that's what we do. That isn't new for us. We've been doing that mostly. The only difference is, now it's formalised, and now the pay structure relates to it, but that whole community involvement thing has been happening here since I ever came, because of the nature of the practice." [Practice nurse, Practice 4, interview, R2]

"...it hasn't really changed a real lot as far as that's concerned and patients still feel it's very similar because they still come in, have a care plan, they still get their Allied health visits. They still get asked to come in for review. They still get their blood tests done and all that sort of thing, which is already...Was happening before in the background as well, so it hasn't changed the normal approach to general chronic disease management, in that respect. It's changed how the doctors get paid for it, obviously..." [Practice manager, Practice 16, interview, R2]

PHN practice facilitators also commented that some practices already thought that they were operating as an HCH. In some cases, facilitators agreed that the practice had indeed implemented many of the key features of the model. However, facilitators also felt that some practices had a limited understanding of HCH. One facilitator commented on an interaction with a practice that had scored itself highly on the HCH-A tool:

"... they already have a mindset, well my nurses are already managing chronic disease [but] they're just faxing off the TCAs [team care arrangements] and waiting for the letter of engagement to come back. Where's the health coaching...they have an idea that they're already doing these things, but actually when you get to the nitty gritty, they are not. ... they don't know what they don't know. Because they don't know what they don't know, they don't know what they need to know. 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]

PHN practice faciliators also thought that sometimes practices couldn't distinguish the HCH model from quality service delivery as articulated in standards against which they are accredited:

"We're perfect, perfect" [PHN 5, interview, R1]

"...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]

Some practices had not made any changes as they were in the early stages of implementing the model, and were still planning what they would do:

"At the moment, we haven't made any major changes, but... in the last couple of weeks where we've formalised how we wanted to go ahead and move ahead in that direction." [Practice manager & GP, Practice 15, interview, R2]

"...a lot's got to be implemented to tick all those Health Care Homes boxes. So that, I think [patients] are missing out on that part of Health Care Homes and probably haven't really noticed any difference, because we haven't got that set-up yet." [Practice nurse, Practice 10, interview, R2]

Low enrolments also affected some practices' ability to make any significant changes:

"I can't say that I see a lot of difference in what we're doing. I don't see that the patients are getting a lot of different care with the two different models so far. We've only got a handful of people on it." [Practice nurse, Practice 7, interview, R2]

"The impact? There are not enough patients to even tell you whether there will be an impact or not." [Practice manager, Practice 1, interview, R2]

Case study

At the time of the interview, a medium-sized practice located outside of a metropolitan area was just beginning to enrol patients and had eight patients enrolled. Although at the beginning of its HCH journey, practice staff had a lot of ideas about what the practice could potentially offer to patients to help them better manage their chronic diseases. One of the nurses hoped to introduce coaching, education sessions, and regular check-in calls. The practice manager and GP also mentioned implementing regular monitoring calls and creating priority access for HCH patients.

Practices also mentioned barriers that prevented them from making changes or delayed their progress:

"I've seen a slight change where the GP has been engaged...But to get that doctor engaged is not happening everywhere..." [Practice manager, Practice 1, interview, R2]

"I think, in a utopic world, that'd be great. We just don't have enough space and people and funding to actually utilise those parts of the model of Health Care Homes." [Practice nurse, Practice 7, interview, R2]

Selected components of the HCH model

Teamwork and delegation

Several practices highlighted team-based care as the major change implemented in their practice as part of HCH. For many, it was bringing about positive results:

"...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, interview, R2]

"...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, interview, R2]

"It's not just up to the GP to be responsible for the care of the patients, it's up to a team....We've always got a dietician and the pharmacist, we're involving the whole team across the care." [Practice manager, Practice 5, interview, R2]

Case study

The staff of a large practice located in a small city outside of a major metropolitan area discussed how the HCH program has enhanced some aspects of coordination of care and chronic disease management. The practice created two teams to manage HCH patients made up of one GP, a registrar and a nurse. The teams have weekly meetings where they discuss one or two HCH patients and contribute ideas towards their treatment and overall management. These weekly meetings have made the staff more proactive about managing their chronic disease patients and have helped them with general oversight and planning.

Other practices were still setting up processes to promote team-based care:

"No, we don't really meet up or have a meeting." [Practice nurse, Practice 3, interview, R2]

"I wish we had a team meeting. Again, there are things we need to do that will change how we do things but we're not doing them yet. And that would be like, yes, that team meeting." [Practice nurse, Practice 10, interview, R2]

The HCH model focuses on broadening the roles of the primary care team, and provides opportunities to delegate responsibilities traditionally managed by GPs to other team members. Many practice staff felt that their GPs were already comfortable with delegating to other team members:

"So, a [GP] that is a partner here I thought would really struggle with the whole program, because his patients are so needy, he's just run with it, he's doing a great job. And he's the one that's probably pushing work towards the nurses more than anyone. And I would not have expected that, it's so totally out of the blue. So, I can see change coming from the GPs so if they're not holding all that information now...they're actually letting go. So, I see that as a really positive thing." [Practice manager, Practice 4, interview, R2]

"I think it's been positive in that it's made GPs realise that they can benefit from having a team-based approach to their care. Something that's been positive for me is that clinical pharmacists are in a very non-traditional role in general practice." [Clinical pharmacist, Practice 11, interview, R2]

These findings largely correspond with responses from practice staff survey (Figure 14).

... has clearly defined roles

(6	329 (6.2%)		115 (23.1%)	16 (3.2%)	16 (3.2%)
is collaborative and trustable					
	372 (74.8%)		73 (14.7%)	16 (3.2%)	19 (3.8%)
helps patients understand their r	oles in care				
	367 (73.8%)		88 (17.7%)	21 (4.2)	76)
share responsibilities for managi	ng health with patients				
	363 (73.0%)		92 (18.5%)	21 (4.29	76)
Agree	Neither agree nor disagree	Disag	gree		
Somewhat agree	Somewhat disagree	Don'i	t know/ no re	espons	e
Figure 14 – Agreement with statements about the primary care team Source: Practice staff survey R1, Mar-Jun 2018					

In some instances GPs' comfort in delegating was due to prior experience:

"I was very fortunate in that our GPs are overseas trained, they've all come with that same view of what the nurse's role should be. How they can grow the nurses' role and how it benefits them. It's not just about us, it benefits them, because it frees up their time. I suppose I was very fortunate in that sense." [Practice nurse, Practice 13, interview, R2]

Other GPs had made it a goal to delegate to "take the pressure off" themselves:

"The other thing that I'm hoping will improve as time goes on is that I can delegate a few more of the jobs that I'm doing off to the nurses to do. That hasn't quite eventuated at the moment, because everyone's still trying to get the hang of how this is all meant to work...we're not there yet." [GP, Practice 6, interview, R2]

However, despite the recognition that delegation is important, several practices reported that shifting to a more team-based approach had been difficult. Delegation has been a major change for GPs and a barrier for some practices in implementing aspects of the HCH model:

"The GPs here like doing most of the stuff themselves. They like seeing their patients." [Practice nurse, Practice 1, interview, R2]

"I feel that the [pharmacist] is under-utilised and it's just a matter of the doctors still letting go. You know I've talked about trust before. That trust is really important. It's important for the patient to be able to trust that doctor. And then also for that doctor to trust other team members, that they can do as good a job as them, if not better...it's just those doctors still letting go and that is hard for a lot of doctors to do." [Practice manager, practice 5, interview, R2]

"They are still of the opinion that the care of that patient will be taken away from them, and they're worried about the liability side of that. If the nurses are doing to our scope limit. I think they're very worried that we would overstep those marks or miss something, and then they would be liable... It's down to a trust thing, and I guess they have a lot to lose if something did happen...In this day and age, they're all just a little bit jumpy about liability." [Practice nurse, Practice 6, interview, R2]

As implied in the last two quotes above, many staff suggested that the key to successful change in this area is allowing time for doctors to develop trust.

Staff members discussed other reasons why delegation has been difficult to achieve in their practices:

"Even here...our patients don't like to see nurses so much because they have a relationship with the doctor. Some of them I have seen for more than ten years, so they like to come for a consult even for a minor thing." [GP, Practice 3, interview, R2]

New roles established under HCH

Some practices hired new staff and/ or established new roles responsible for HCH patients/ activities. New staff included nurses and medical practice assistants, and new roles were HCH coordinator/ nurse. These positions had responsibilities for:

- enrolling patients
- recalling and monitoring HCH patients via phone and email
- tracking and handling finances
- chronic disease management
- running patient groups
- entering data
- preparing patient care plans
- liaising with outside specialists and allied health professionals.

Though some practices with a larger proportion of HCH patients would have liked to hire additional staff for HCH, they felt that they were restricted either financially or due to issues with recruiting staff or turnover. Some practices focused on the importance of having dedicated staff to focus on operating HCH while keeping up with the regular patient workload:

"I think you almost need that dedicated Health Care Homes' nurse who's not actually trying to do everything else in the practice nurse role." [Practice nurse, Practice 10, interview, R2]

Case study

A practice with four doctors and three nurses located in a small city used HCH funding to employ a medical practice assistant. The practice manager advertised for the role but received few applications. Since this is a fairly new role in primary care, she surmised that this was the reason for

the low interest. Nevertheless, the practice successfully employed a medical practice assistant, and reported that the position has been a positive addition to the team. In addition to helping with the HCH program, the medical practice assistant performs a variety of IT tasks, health checks, and manages certain aspects of patient education. The practice manager hopes to continue to expand the role.

Managing change

PHN practice facilitators identified key factors that helped practices transition to an HCH: change leaders, peer-to-peer engagement and sequencing change. Both PHN practice facilitators and practices also discussed other aspects of practices that enhanced or thwarted their ability to effectively transition to an HCH. These are described below.

Change leaders

Practice facilitators felt that practices should identify key people within the practice to facilitate the change process. More than one person was required – typically a GP, a nurse and a practice manager.

Facilitators thought this team should be adequately prepared, for example, training taken together prior to the start of the implementation, and having protected time to plan as a team.

Peer-to-peer engagement

"There's so much more to it than reading a manual" [PHN 2, interview, R2] A struggle in practice facilitators' role was engaging GPs in the practices. Many recognised early that peer-to-peer engagement was the most effective approach for this. A strategy PHNs used was to use a GP with experience of implementing PCMH to talk to the local GPs about the model:

"...what it feels like to be a Health Care Home, not so much what it looks like on paper but what it feels like a GP operating in a Health Care Home." [PHN 3, interview, R1]

Another strategy was GP-to-GP forums, which were often a subset of a wider community of practice established by the PHN.

Sequencing change

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"One step at a time"
[PHN 8, interview, R1]
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Practice facilitators talked about the need to break up tasks to make the change process more manageable:

"...to get the practices over the line and keep them involved and keep engaged, we broke down the steps. So that we've been telling them, this is the front end part of it. It's full-on and you need to get all the processes right." [PHN 3, interview, R1]

They also talked about tailoring their work with practices according to the stage that they're at: "*Chipping away until* [the message] resonates with some type of meaning." [PHN 4, interview, R1], including managing how much information that they gave them at certain

points ("making sure they don't feel overwhelmed at the amount of information they have at the time..." [PHN 3, interview, R1]).

Practice capability

Some practices felt that their **involvement in past initiatives** made it easier for them to adopt HCH. This included participating in initiatives such as team-based care, quality improvement, and patient-centred care. They reported that these initiatives helped them slowly engage their staff and create a culture that embraced the HCH model. Engagement in these types of activities often meant that they had worked with their PHNs in the past. It also gave them additional time to prepare for this type of large-scale change:

"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]

Case study

A large practice located in a busy suburb just outside of a major metropolitan area has been heavily involved in quality improvement initiatives. In the last few years the practice has focussed on implementing the patient centred medical home (PCMH). Involvement in these previous initiatives has made implementation of HCH smooth. The practice leaders feel that they have created a cultural shift amongst staff and that the entire practice is committed to the HCH model of care.

Another practice felt that past participation in initiatives and its desire to improve patient care made their decision to participate in HCH seem like natural step. This involvement made it easier to adopt the model within the practice:

"I think the major help has been previous experience with enhanced primary care and the collaboratives. So moving on from there, looking at another way to apply those same ideas that would be the major help. That and having a clinical team that's keen on enhanced primary care and taking care of patients as a team." [GP, Practice 2, interview, R2]

There were conflicting views on whether **practice size** made it easier or harder to implement HCH. There was a sentiment among some practices that smaller practices would have trouble participating in the program:

"If you're a clinic with only three doctors, one nurse, who is going to run this thing?" [GP, Practice 3, interview, R2]

A GP from a small practice interviewed did not rule out small practices being able to implement these types of programs, but acknowledged the challenges:

"...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 if all of a sudden, I go away for three or weeks at a time...I needed to be here to run the program, so I haven't taken a holiday this year...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, interview, R2]

Case study

The practice principal of a small city-based practice who is also the only full-time GP (employing five other part-time GPs) was excited to join HCH to offer additional clinical services not funded under Medicare to patients of the practice. The GP was frustrated with issues around implementation, including software, staff turnover, patient concerns over My Health Record, and communicating with external providers using the new electronic shared care planning tool. As the only full-time GP, the principal took on most of the implementation tasks, which were time consuming. The practice subsequently withdrew from HCH for these reasons.

Despite additional resources and support, some practices felt that it would be more difficult for large practices to implement the model because, unlike small practices, they would need to reach a consensus among multiple GPs and leaders to participate in the program:

"...seven partners gives you 14 opinions, depends on the time of the day and that sort of thing." [GP, Practice 14, interview, R2]

They felt that staff engagement would be more of an issue in larger practices affecting any sort of major cultural practice change. One GP summarised some pros and cons associated with adopting the model according to practice size:

"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. The middlesized practices that have got some smart operators...their guys have got enough smarts about them to sit down and plan. And because they're the owners of the practice, they can direct what goes on. You get to this size practice...with multiple owners...and it's enormously difficult to actually make some kind of practice change, I find." [GP, Practice 12, interview, R2]

Practices in rural and remote areas cited specific obstacles related to their location. These included difficulty recruiting staff; problems with IT connectivity and general set-up; fewer supports and medical resources for individuals; and limited patient access resulting in high wait times:

"...we have increasing problems accessing any sort of health care through our public hospital system and we have increasing problems accessing specialists."[GP, Practice 17, interview, R2]

Though most practices discussed the difficulties associated with implementing HCH in rural and remote areas, one practice stated that their location and lack of certain services fostered holistic, team-based 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, interview, R2]

Practices discussed business types and their potential effect on the implementation of HCH. Some felt that corporate practices may have an easier time implementing the HCH model due to the high level of support and resources at their disposal:

"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 PMs that can do things locally." [Practice manager, Practice 1, interview, R2]

Despite these potential advantages, some corporate practices seemed to struggle to adopt the model:

"We're just getting nowhere." [Clinical services manager, Practice 1, interview, R2]

Individuals in corporate practices cited several factors that may be leading to difficulties with program implementation. These factors include issues around the payment structure, lack of staff engagement, and problems with communication. One corporate practice that was about to withdraw from the program stated that their current payment model made it difficult to operate a bundled payment system within the practice. They suggested that PHNs and the Commonwealth speak with corporate practices around Australia so that the HCH funding model is better aligned with corporate practices' financial structure:

"I know that a lot of doctors now are signed up to corporate companies so they may need to understand the payment structure before they decide how they're going to be paying out the grants and all that sort of stuff as well...The problem is though with the percentage basis on a corporate company, the doctor would retain most of that money, and it's the nurse seeing them, and we have to pay wages for that nurse. They [GPs] were also renegotiating their contracts with head office and so it caused a little bit of an issue of trying to work out how they were going to be financed for it and how the practice was actually going to be financed for it because a lot of the time would be with nursing and admin staff managing it all." [Practice manager, Practice 8, interview, R2]

Other corporate practices cited difficulties around communication with their staff members and PHNs. Among the corporate practices interviewed, many individuals stated that the decision to participate in HCH was made by their headquarters:

"I didn't know anything about it." [Practice nurse, Practice 1, interview, R2]

Though doctors were given the option to participate, it was not their ultimate decision, which meant that there were a smaller number of doctors participating at this practice. This seemed to contribute to a lack of staff engagement, leadership, and enthusiasm among both clinicians and other staff members.

In addition to lack of staff engagement, another corporate practice stated that there was miscommunication between their corporate management, the PHN, and the practice

around what was expected of the practice. This ultimately led to the practice's decision to withdraw from the program:

"...we had our own documentation of what [corporate head office] thought that we should be doing and there was the PHN as well. But I don't feel that [corporate office business manager] ... told the PHN that that's what we were agreeing to. That's what they [the PHN] were actually educating that's what the model was... that patients could ring and get scripts, referrals, all that sort of stuff... that's what they're educating the patients at the engagement meeting." [Practice manager, Practice 8, interview, R2]

Case study

The practice manager of a large corporate practice located outside of a major urban area cited lack of communication between the practice, corporate office, and the PHN, and limited GP engagement as the main factors in the practice's decision to withdraw from HCH. The practice was interested in testing the model and its potential benefits. The GPs were hesitant to participate in the initiative due to limited information around program guidelines and timeframes, which led to a delay in implementation. The practice manager also described a general miscommunication between the practice and the PHN around program expectations and requirements. While the practice wanted to test the model with a few patients, the PHN wanted the practice to agree to enrol 50 patients. The practice felt that they did not have adequate GP engagement or sufficient information about the program to agree to this. Therefore, they decided to withdraw from the program.

PHNs also had views about practice capability, although sometimes they could not easily pick the practices that would find change easier:

"I've been very surprised, I don't think you can generalise. Practices that I thought would be quite efficient have had the most ridiculous amount of handholding, I practically... Practically camped there at the beginning of the year, I might as well have just moved in. And then I thought they were quite a large, they're quite a successful practice, I'm just shocked at how little they could get their head around what's really happening. A practice that I said you know "oh really, they got it?" have actually – they've had once again a lot of handholding that one, but I think they're going to be okay, I think they're going to be quite good, I think they're really into it." [PHN 5, interview, R1]

However, they observed that practices whose principals or key staff had been involved in similar initiatives to HCH in other countries tended to be more comfortable with changes required for HCH. Other features identified included:

- Practices that already had nurses as part of the team ("This model is ... driven by the care coordination component of improving health outcomes..." [PHN 6, interview]).
- Good working relationship between the GP(s) and nurse(s).
- Where the GPs were engaged.
- A proactive practice manager.
- Having more than one driver for change.

Staff experience

Individual staff members interviewed for the evaluation discussed varying degree of change in their own roles since the inception of the program. Some staff reported that, despite an increase in administrative and clinical tasks, their role was largely the same:

"I've just had to spend more time with Health Care Home and taking that on board, so it's been extra for me to do from my normal day to day duties." [Practice manager, Practice 1, interview, R2]

"Not really, I think this is the way I work or I want to work with all patients." [Practice nurse, Practice 12, interview, R2]

"I think it just added more tasks for me." [Practice nurse, Practice 11, interview, R2]

In some instances staff members reported that their job satisfaction was initially negatively impacted with the implementation of HCH due to higher levels of additional tasks and administrative burden, but this has since been resolved:

"I hated [what I was doing] at first... I hated it until only a couple of months ago. Because I was working alone I think that was too much work and the mental stress of it starting it up from scratch as well. But now I've got the other [staff] it's good and we've ironed out all the problems. I've ironed out loads of problems in every aspect." [Practice nurse, Practice 4, interview, R2]

"...for a long part of this actually there was a situation where there was only like one nurse on there...we're trying to recruit Healthcare Homes and we're trying to nut through the care plan process, but you've got a list of other stuff to do...I think [I] went, well I've only got two hands. So that would be the level of my frustration. But now...we're feeling like, oh, we've got time to work on that....I don't think it's impacted on my job satisfaction at all really....To me I think it's good to be part of something that could be involved in making something better." [Practice nurse, Practice 9, interview, R2]

A few practices reported that their staff members are still struggling to integrate some aspects of the model within their scope of responsibilities, which has made it difficult for the whole team:

"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]

Case study

The owner of a medium-sized practice located in a suburb just outside a metropolitan area and predominantly serving a younger demographic described the practice as a 'lifestyle clinic'. The practice promotes and provides a range of preventative care services, and the owner believes this to be aligned with the HCH philosophy. One of the lead GPs, who was the first doctor to enrol patients, stated that the program has both hindered and benefitted her overall experience. She feels that initially understanding the program and how to complete general operational tasks under the HCH model was difficult, as there were limited guidelines around program requirements and processes. Although she feels this is a drawback of the program, the ability to provide phone consultations has been a major advantage and increased her job satisfaction. The practice hopes to continue to expand program offerings by introducing Skype consults, which would benefit both patients and staff members.

One staff member reported that HCH has impacted their role in both negative and positive ways:

"Because it's allowed me the phone consults, it has improved my job satisfaction in that sort of way...It's meant that I don't have to have patients in here face-to-face to be doing simple things like referrals and whatever else. So that's made a big difference in that sort of way...because it's so challenging to actually understand the program and put it into place, that has not helped job satisfaction at all. It's meant that I've pulled back on the number of patients that I'm actually seeing, because I'm needing to do this extra work in terms of working out, how is this going to be panned out within the practice, all those planning meetings that we have." [GP, Practice 9, interview, R2]

Despite these difficulties, practices reported largely positive changes in their roles and experience with implementing HCH. These include increased autonomy and responsibilities for nurses, less pressure on GPs, more team coordination and staff involvement, and stronger staff-patient relationships:

"You're more involved now...You scrutinise everything basically, compared to if they come in just for a normal care plan...And, you have a different relationship also, so even when they will come through the door and they just see me and I'm like, come through, because it's one of my patients. And, you have that different relationship that they know that they can come and see me and I'm available for them at any time." [Practice nurse, Practice 3, interview, R2]

"I'm the keeping the staff happy person. And they like it, they really like it. My nursing staff love the autonomy and the extra responsibility, they absolutely thrive on it." [GP, Practice 4, interview, R2]

"From a practice perspective, I think the doctors that are on board have been a lot happier with the way that we are now. Especially tweaking things along the way, they're really happy with the way that it's been going, same with the nurses. I think the doctors feel they have a lot more time to tailor their care specifically for those patients now... One of our doctors said it's like a weight has been lifted off, that they can do that for them now, they can send the scripts to their chemist. Yes, that's definitely one change." [owner & practice manager, Practice 6, interview, R2] "I feel I get a closer relationship with the patient as well, and I like that, because yes, it's nice. And they all ring, and they all come and just talk to me about anything, and just... And that's nice, because for an elderly person, it's nice for them to come in and they can just talk away to me, yes. And they trust me..." [HCH coordinator, Practice 16, interview, R2]

The bundled payment

Overview

The bundled payment has been described in Chapter 2 (Bundled payment, p. 12), along with the payment rates by tier (Table 2).

The Department 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" (Australian Government Department of Health, 2016b).

The Department anticipates that the bundled payment under HCH will result in practices receiving about 10% more than under the current fee-for-service arrangements for HCH enrolees (Australian Government Department of Health, 2016b). It also recognises that the bundled payment may not be suitable for all chronically ill patients, and allows HCHs to withdraw 'very unwell' patients and revert to fee-for-service MBS charges for these patients (Australian Government Department of Health, 2018c).

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 the Department of Human Services, undertook to monitor the incentive payment for practices and provide a top-up for any HCH that is disadvantaged as a result of participating in HCH (Australian Government Department of Health, 2018c).

A new MBS item – item 6087 – was also created prior to the start date of the implementation (1 October 2018) to record HCH patients' out-of-pocket expenses (so that they can be counted towards to the patient's safety net). The item has a rebate value of \$1.15. This item will also make out-of-pocket costs visible for the evaluation.

HCH does not prohibit patients from consulting other practices, but the patient enrolment/ consent form contains the statement "4. I agree to seek care from my Health Care Home practice on an ongoing basis" (Australian Government Department of Health, 2017a). Also, the Health Care Home Funding Assurance Toolkit (Australian Government Department of Health, 2018a) requires 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)" (p. 8).

What the bundled payment includes

The HCH payment relates to enrolled patients' chronic conditions, and includes:

- 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.

(Australian Government Department of Health, 2018c, p. 20).

HCHs may still claim for consultation not relating to patients' chronic conditions. The Clinical Reference Group created guidance on this (Australian Government Department of Health, 2018b). For example:

Question

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

Answer

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.

Distributing the bundled payment amongst HCH care providers

One of the concerns by practices considering participating in HCH or having just joined was how the bundled payment would be shared within the practice. The Department of Health engaged AAPM to prepare a guide for practices—the Health Care Home Activity Monitoring Guide (Australian Association of Practice Management, 2017a)—for building an internal system to record and monitor HCH activities and allocate funds. The Department did not mandate the guide; it was provided as a resource. It provided the following to practices:

- A consistent method (within practice clinical management software systems rather than between systems) for flagging HCH patients and recording their tier.
- A list of standardised activities, modes of delivery and responsible roles (and corresponding codes for these). Activities included in the Guide are:
 - 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

Specific guidance was given for the following practice clinical management software tools: Medical Director/PracSoft, Best Practice, ZedMed and Communicare.

AAPM conducted a Webinar on the Guide in October 2017 through the HCH training platform (Australian Association of Practice Management, 2017b).

Practice and PHN perspectives on the bundled payment

Some PHN practice facilitators thought that the bundled payment attracted a wide range of practices, including ones that weren't ready for an HCH approach. They generally observed that practical issues associated with the bundled payment took up a lot of practices' time:

"... 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 owners and practice managers are really, even still, grappling with that aspect." [PHN 1, interview, R1] Some facilitators considered that the transformation to an HCH as well as the bundled payment was too much for practices to deal with on top of changes to their model of care:

"I do understand that introducing the bundled payment now allows them to actually put into practice some of those things that they wouldn't be able to do on a fee-for-service model. I get that, but I just think that the trial should have been lengthened out and then, there should have been a longer time period for the initial readiness. Building those four base building blocks and then, going okay, when that stuff's in place, now we can start enrolling patients and introducing payment models. Because you're not walking into a practice going, here's a great new model. Change the way, everything you do and your money's changing and this is changing. You're going in, selling the model, then going, well, okay, now the next step is this and introducing it." [PHN 1, interview, R1]

"...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]

Some practices spent time convincing doctors about the advantages of bundled payment versus fee-for-service before the practices could start to make any changes to their model of care. PHN practice facilitators spoke of spending time with some practices to help them work out how to monitor the bundled payment internally, leaving limited time for changes to practice:

"...you actually have to work with them, ... to set-up the internal ... systems to deal with the bundle payment. How to, ... allocate the costs, how to know which costs will be counted. Because you know you can enrol today, even January but the practice will not be ready actually to serve these patients." [PHN 5, interview, R1]

Practices also reported that managing the bundled payment was their major focus in the beginning stages of the implementation. Some felt that they received little guidance on how to effectively set-up and operate the payment:

"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, interview, R2]

Many practices reported struggling how to distribute payments to their clinicians under different circumstances, for example, if a GP goes on holiday and another doctor at the practice sees their HCH patient for their chronic condition. Other practices had difficulties with reimbursing GPs who work part-time or who are contractors, and nurses and care assistants:

"...if you're getting the nurses and care assistants to spend X amount of time on those patients, for whom you're getting funding, how do we actually distribute that?" [GP, Practice 12, interview, R2]

Some practices resolved the distribution problem by having doctors and nurses use "dummy" item numbers or allocating a certain percentage of the monthly payment based on which doctor treats the patient. Billing was a new concept for nurses:

"...the nurses have to bill as well now, which has been another thing to learn. And again it's more clicking and clicking and, yes, just the time to implement that properly. I feel like we just do it all on the fly." [Practice nurse, Practice 10, interview, R2]

The bundled payment perpetuated a wide range of questions for practices, some of which they felt remained unanswered, for example, whether certain services should be billed under HCH or separately:

"The doctors also raise these concerns about how its related and unrelated. For example, if our patient comes in with asthma and they think it's cardiac, what do they do? The Health Care Home patient was first only enrolled with asthma, and then suddenly it's... How do they bill it? All these grey areas, those are our little issues they brought up." [Practice manager, Practice 4, interview, R2]

Other issues were what to do when an HCH patient from another practice seeks treatment at for their chronic condition at their practice, and whether consultations with HCH patients count towards the practice's PIP grant payments, which represented a large percentage of revenue for some practices.

How the bundled payment compared with fee-for-service financially for the practice was another concern for practices. Many reported comparing the two. Some practices deliberately only enrolled a small number of patients to do this test. Nevertheless, practices were still unable to determine the financial impact given the short time period of the trial so far. They felt that they would have a better understanding of how the funding model is impacting their practices as the program continues to progress:

"That will be interesting for us to see, how that pans out in 12 months' time. Whether we've actually got a surplus or we've actually used it all up and had to bend it back into Medicare going, this is not working. That will be interesting." [Practice manager, Practice 15, interview, R2]

"We haven't sat down as the practice to really look. We thought we'll give it a bit more time and then see financially..." [GP, Practice 18, interview, R2]

"We haven't interrogated it enough at this stage, yes. I don't think we've got enough patients yet to really input it properly. Look, I think realistically what I'd like to do after the first 12 months is actually look at every individual that we've got and actually have a look at, because I haven't as of yet. Actually look at what the income has been and what the expenditure has been and just have a look at the frequency visits and what sort of usage there's been. So we can actually see has it been good value." [Practice manager, Practice 10, interview, R2] The general concept of uncertainty around funding was an imminent concern for many practices:

"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, interview, R2]

"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, interview, R2]

Some practices reported difficulties with planning their budget:

"...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, interview, R2]

Though most practices interviewed were still evaluating the financial model, practices reported mixed feedback regarding their analysis thus far. One practice commented on the amount of time it has taken to understand and implement the HCH model and whether it was worth participating in the program:

"...we ran reports in the background to work out...whether the doctors would be actually better off or not based on item number usage, and that [it] really wasn't worth it financially." [Practice manager, Practice 8, interview, R2]

Despite initial doubts, a practice manager at another practice stated:

"I'm changing from that negative to the positive, because I am actually seeing that throughput now. And financial as well. I can see that that is working. When you didn't have very many and it was very early in the process, nothing was identifiable, whereas now it's quite evident what's coming through, how much we're seeing patients, how often, all of that sort of thing." [Practice manager, Practice 4, interview, R2]

Shared care planning

A key feature of HCH articulated from the outset was shared care planning. Promotion of shared care plans was designed to:

- increase the involvement of patients in their own care
- improve the coordination of the services they receive inside and outside the HCH.

(Australian Government Department of Health, 2017b).

Prior to the start of the implementation, the need for an electronic plan was relaxed. This was due to feedback that the Department had received that practices did not have enough information to select a tool that would meet the minimum requirements.

Also, some coordination would be required across each region to ensure that providers outside of the HCH would be able to access the plan and potentially contribute to it. The Department gave HCHs until 30 November 2018 to implement an electronic shared care planning tool. The Department was careful to stipulate 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" (Australian Government Department of Health, 2017b).

The Department developed a document outlining the minimum requirements for shared care planning tools (Australian Government Department of Health, 2017b, see Appendix 1). 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

Prior to their participation in HCH, many practices reported using their clinical management systems – like Medical Director and Best Practice – as their main tools for care planning. They would communicate with external providers via fax, phone, paper, or secure messaging.

For the HCH trial, practices opted for specific tools due to cost, experience with a platform in a past initiative, or regional considerations (i.e. what others in the region were using or what they were funded for on a regional level). In some instances, the PHN purchased licences for their practices to use. One vendor offered the use of its shared care planning tool for free during the program rollout. This influenced many practices and regions to take up this software. A few practices reported that they were still deciding on which shared care plan to use and were continuing to create plans for HCH patients using their clinical management system.

10

Issues with the tools

Practices reported 'teething issues' with implementing electronic shared care planning tools. These problems were eventually resolved:

"...we thought it was going to be simple process of getting the software but it became complex in installing the software, trying to get it up and running." GP, Practice 17, interview, R2]

"They're medically orientated, they're clunky, they take over 30 minutes to do and they're not patient centred." [Practice manager, Practice 5, interview, R2]

They also reported issues with other available tools, describing them as "clunky" and "cumbersome."

Case study

The staff of a large practice located in a small city discussed major IT issues experienced during the implementation of HCH, and particularly the issues with implementing an electronic shared care planning tool. The GP reported that the practice IT system broke down three times since the practice installed the shared care planning tool, which resulted in high IT fees and loss of revenue for the practice. In addition, the staff felt that the tool was difficult to use, and that it takes much longer to create care plans and consult with patients. Practice staff recommended that there should be additional guidance around program requirements, more general administrative support from the PHN staff (i.e. auditing, enrolment support, filling out care plans), and additional funding beyond the \$10,000 HCH incentive grant.

Key issues were the inability to personalise templates to make them more user friendly and auto populate patient information from their clinical management system. They stated that it took a lot of time to create a care plan using the shared care tools compared with creating it in their clinical management systems:

"...so we already have established chronic disease management system here and we use [clinical management system]. And we document everything really in a detailed fashion. [The new shared care planning tool] is slow, it's clunky. How you populate a care plan, your targets, reviewing them, I suppose it's all because it's a new system as well." [GP, Practice 1, interview, R2]

"On average, 20 to 30 minutes for [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, interview, R2]

"I can do [an existing clinical management system] care plan in 10 or 15 minutes. Most of the patient demographics, the data, their drugs, autofeeds back in again. Whereas with [the new shared care planning tool] I'm having to manually type everything in. So I had this quite complex patient, I spent an hour and a half trying to do it and just stopped...It still wasn't finished to the level that I wanted to do." [GP, Practice 17, interview, R2]

Some practices reported that, though the new tools had templates for common chronic diseases, such as diabetes and COPD, the software did not have templates for rarer illnesses or comorbidities. This made it more difficult to individualise plans and ensure that they included all relevant medical history and information:

"[The new shared care planning tool] might have maybe 10 conditions that are all fairly well thought through, but there's a whole heap obviously beyond that. So then you're having to go and add...And that's almost like going back to pen and paper, working out a care plan for a patient, rather than using a template. So that's what we meant by clunky. It's like the basic criteria are there, but the actual nitty gritty of how you're meant to actually use it aren't functioning yet." [Practice nurse, Practice 9, interview, R2]

Due to these problems, some staff argued that they should not have to incorporate another IT tool that still has many flaws. They felt that the deadline to select a shared care tool should have been extended:

"...we're still in a very raw area... Or number of raw areas and particularly the shared care planning stuff going on. And to be forced to make a decision about that, at the moment, particularly when you look at the different...funding costs from these different products that are out there...Well, I think it's pretty much an unfair requirement. I think that decision definitely should be put off. Because I believe that the software that we're very used to using is not far away from delivering its own care planning process within that software." [GP, Practice 12, interview, R2]

"Fix what you've got. Make it really good and then we can use it but don't give this another system... I don't know how fluid it's going to be but if it becomes there's a deadline of you do this or else then it's or else." [Practice manager, Practice 18, interview, R2]

There were also concerns about the future costs associated with shared care planning tools. Though one of the vendors offered their product for free for the trial, practices were unsure when this offer would end:

"There are a lot of companies that are contacting me at the moment, use ours, pay for ours, it's free whilst you're on the trial. And then we think, what happens when the trial finishes? Are we hit with this massive amount of money?" [Practice owner, Practice 6, interview, R2]

Interoperability

PHNs and practices were concerned about how regions would achieve interoperability with different shared care planning tools used by providers in the health care neighbourhood:

"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, interview, R2] "But it does strike me that ...you need a regionally based solution on software, on shared care planning. Because you effectively need to involve a lot of different people interfacing with that. And so, if there are multitudes of software being used, that really will create huge problem. You can imagine a hospital would have to have 50 different programs, potentially." [PHN 8, interview, R1]

Practices' survey responses on how they share care plans with clinicians outside the practice highlights this barrier. That is, more than half send a paper version of the shared care plan to relevant providers (Table 47).

Table 47 – Main ways that the practice shares care plans with clinicians outside the practice involved in the care of the patient (multiple may apply)

Response	Total
We send a paper version of the shared care plan to relevant clinicians	50 (54.3%)
Clinicians outside of the practice/ service can access a patient's plan by logging into a common shared care planning software application	24 (26.1%)
We email an electronic copy of the plan to relevant clinicians	14 (15.2%)
We load the plan into the patient's My Health Record	14 (15.2%)
Other: Fax	9 (9.8%)
Other: Linked EHR	9 (9.8%)
Other: Patient passes it on	1 (1.1%)
Other	5 (5.4%)
Don't know/ no response	3 (3.3%)

Source: Practice survey R2, Nov 2018-Mar 2019, question 18.

Practices raised issues around allied health professionals, hospitals, and external providers accessing their shared care platform and additional fees for external users. Staff predicted there would be ongoing issues around interoperability and exchanging information between providers due to competition and the use of multiple shared care platforms on the market:

"It's unreasonable to expect them to use however many different programs, and the paper one for all the people that aren't part of Health Care Homes...it doesn't cost them anything to open it up. But, if they want to put notes in and use it like that, I think it does." [Practice nurse, Practice 1, interview, R2]

"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. This is my process that's going on." [GP, Practice 12, interview, R2] During the time of the interviews, practices reported varying levels of coordination with external providers via shared care platforms. Some practices had trouble with outside health professionals accessing the platform or were generally unsure whether they were using the software:

"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, interview, R2]

"...those care providers aren't coming in, there was no one coming back and say[ing], we're going to add in this, or, here's a contribution to it." [GP, Practice 7, interview, R2]

These problems have led some practices to continue to communicate with providers by phone, mail, or fax:

"We haven't found a smooth way of doing that electronically through this, just yet...we're still doing referrals the old care plan way." [GP, Practice 9, interview, R2]

"If you put your care plan not on paper but on [the new shared care planning tool] or other online portal it would be no different in practice – that's what we're doing, but paper-wise...we'll get letters back from physios, but traditionally even if you just put diabetics on a care plan, they'll come back with the physio and their [letter]. We're already doing that, but just in a paper way." [GP, Practice 4, interview, R2]

Other practices reported that, despite an initial adjustment period, external providers are starting to communicate with them through the software platform:

"Once they catch up with how this is supposed to work and they get into the swing of it. The couple of Allied Health people that have now received quite a few referrals along those lines from us, they're into a good routine and things are flowing smoothly." [GP, Practice 9, interview, R2]

"Yes, we're getting stuff back...We don't get emails, I think we get faxes usually. But sometimes they just accept it in the [shared care planning tool] that they'll do the deeds for us that we need, and then we don't get an email. I can't remember getting emails, unless admin gets them." [Practice manager, Practice 16, interview, R2]

"...I did have to ring quite a few of them here and in the other [practice] just to...Can you check in your emails please, for the [shared care plan notification], because we have done the referral? This is the way we have to do it and try and explain the program. And once I explained it, that was fine. They were quite happy to use it, but it's just one more thing for them to think about as well." [Practice nurse, Practice 1, interview, R2] Despite some movement towards electronic communication between providers, many practices stated that the process of creating care plans for their HCH patients is largely the same as before. This includes how they create the care plan with the patient, the information that they input, and the way patients access the plan:

"...it's really not that much different than what we were already doing with the care planning part." [Practice nurse, Practice 6, interview, R2]

"we've sort of been often doing care plans how we used to do them." [Practice nurse, Practice 10, interview, R2]

Multiple practices reported providing patients with a paper-based copy of their care plan. Often this was due to consumer preference and ease, reflecting the age of the target population and concerns around patient security:

"The patient having it in their hand, they feel a lot more secure with that, a lot of the patients aren't of my generation, they are of 60 plus. Having a login to a health system and understanding that, and where to access it, they just won't. That's where it's a nice idea in theory, but we're probably about 15 years too early for implementing it." [GP, Practice 7, interview, R2]

"the issue with patients has been around the use of digital health, that's probably been another barrier in the questions they ask is oh, so who's going to be able to see this information? Those are probably the two main barriers to engage with them. In getting Health Care Homes up and running." [Clinical pharmacist, Practice 11, interview, R2]

A few practices stated that their more 'tech savvy' patients were accessing their care plans through the user interface of their shared care planning tool, but this represented a minority of patients:

"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, interview, 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, interview, R2]

Other patients were more comfortable with paper-based methods or the phone as they were not comfortable using computers or shared care planning software:

"We haven't got on the email bandwagon just yet, we are on the phone bandwagon...Email, again based on the patients that we have, I don't know if a lot of them will actually use email..." [Practice nurse, Practice 15, interview, R2] To combat some of these issues, practices suggested additional education and training around shared care planning and team-based care arrangements. Some practices felt that this training should be extended beyond practices, to allied health and other providers:

"I think the education has been good for general practice and very comprehensive. I think it hasn't been so good for the rest of the community, specialists and pharmacies and allied health people. They don't really know what it means and what difference does it make. For the allied health people, it doesn't really make a difference. We've got a care plan. We're including them in the care plan which is what we've always done." [Practice manager, Practice 18, interview, R2]

"[External providers] don't know what they're doing and particularly, I think, here like in [state]...there's no real understanding of what team care arrangement was...Probably because they didn't educate us as well about it to start with." [GP, Practice 10, interview, R2]

"So, that's where I found that there were certain areas where maybe I'm lacking or didn't get enough training on it and then she spoke about [the new shared care planning tool] and where their shared care plan goes to. And, I was like, I don't even know what you're talking about. So, there are certain areas that are still a bit grey to me." [Practice nurse, Practice 3, interview, R2]

Community pharmacy in HCH

As discussed in Chapter 2, The Community Pharmacy in HCH was a component added to the HCH trial in August 2018. The initiative is auspices under the Sixth Community Pharmacy Agreement and in managed by the Pharmacy Guild. Under the arrangement, an HCH patient may be referred to a community pharmacy of their choice. The community pharmacy can offer a range of additional medication management services, including the development of a medication management plan (MMP). The initiative intends 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 can be offered include:

- 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 Pharmacy Guild is managing a data collection related to these services with community pharmacists. Data to the end of June 2019 was provided to the evaluation team. At that time the initiative was still developing. Educational sessions had been provided in the 10 PHNs in which HCH is operating, but awareness of the initiative amongst GPs and pharmacies is still growing.

The data collated by the Pharmacy Guild related to 468 patients. The patients were referred from a small number of practices with 399 (85%) referred from seven practices. At this stage most of the patients have only had an initial review and this report concentrates on data from that review. However, 141 (30%) of the patients have had a second review.

Table 48 provides some basic characteristics of the 468 patients who had an initial review. 9% were in Tier 1, 50% in Tier 2, and 40% in Tier 3. The characteristics of patients were similar across tiers; 58% were female, 90% were English speaking at home, and patients scored relatively high on the MedsIndex score, a measure of medication adherence (74% scored above 80). Patients in Tier 3 were slightly younger, with 53% of patients being less than 65 years old compared with 41% in Tier 1 and 35% in Tier 2. Patients in Tier 3 were more likely to have attended hospital in the past 6 months (26% compared with 11% in Tier 1 and 9% in Tier 2).

Table 48 – Characteristics of patients receiving an initial community pharmacy review, medication adherence

	Total	HCH risk tier			
Characteristic	(n = 468) 1 44 (9.4%)	1 44 (9.4%)	2 235 (50.2%)	3 189 (40.4%)	
Hospitalised in the last 6 months	75 (16.0%)	5 (11.4%)	21 (8.9%)	49 (25.9%)	
Medication adherence (MedsIndex score)					
0 to <50	21 (4.5%)	2 (4.5%)	8 (3.4%)	11 (5.8%)	
50 to <80	99 (21.2%)	6 (13.6%)	54 (23.0%)	39 (20.6%)	
80 to <85	59 (12.6%)	5 (11.4%)	37 (15.7%)	17 (9.0%)	
85 to <90	58 (12.4%)	6 (13.6%)	29 (12.3%)	23 (12.2%)	
90 to <95	89 (19.0%)	14 (31.8%)	42 (17.9%)	33 (17.5%)	
95 to 100	142 (30.3%)	11 (25.0%)	65 (27.7%)	66 (34.9%)	
Patients MedsIndex score					
Median (Range)	89.0 (0.0, 100.0)	90.0 (1.0, 100.0)	87.0 (0.0, 100.0)	90.0 (0.0, 100.0)	

Source: Community Pharmacy in HCH trial Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2019.

Patients were taking medicines for a wide range of conditions. The most commonly prescribed medicines were antihypertensives (72% of patients) and lipid lowering drugs (54%). Medicines prescribed for these conditions were similar across tiers. Medicines were also commonly prescribed for: diabetes (44%); heart disease (41%); arthritis (32%); respiratory conditions (32%); depression or anxiety (27%); pain (26%); and digestive disorders (25%). Prescriptions of medicines for depression and anxiety increased with tier, as did prescriptions for diabetes, kidney disease, respiratory disease, and the category of 'other conditions'.

The most common goals agreed to in the patients' MMP were 'Improved medication adherence' (42%) and 'Improved patient knowledge about their medicines leading to improved medication use and disease self-management' (51%), but these varied substantially between tiers. Patients in tiers 1 and 2 were much more likely to have the goal of 'improved patient knowledge' than patients in Tier 3 (73% in Tier 1, 63% in Tier 2 and 30% in Tier 3), but patients in Tier 3 were far more likely to have the goal of 'Improved medication adherence' (68% in Tier 1, 32% in Tier 2 and 61% in Tier 3s). The goals of 'Improved technique/usage of medication devices' (15%), 'Optimise the medication dose' (18%), and 'Reduced medication side effects' (8%) were less common.

For most conditions, at least two people were responsible for the patient achieving their goals and in general it was most likely to be the carer/patient and pharmacist (See Volume 3 Appendix 6). For the five pre-defined patient goals, both carer/patient and pharmacist were reported as being responsible in over 60% of cases. Pharmacists were considered responsible for improved medication adherence for 88% of patients who set this goal and responsible in 84% of cases where the goal was to improve technique of medication devices. Although GPs were less likely to be considered responsible for a goal, GPs were considered responsible for goals relating to optimising dose (57%) and reducing side effects (61%).

	Total	HCH risk tier		
Goals	(n = 468)	1 44 (9.4%)	2 235 (50.2%)	3 189 (40.4%)
Improved medication adherence	195 (41.7%)	3 (6.8%)	76 (32.3%)	116 (61.4%)
Improved patient knowledge about their medicines leading to improved medication use and disease self- management	238 (50.9%)	32 (72.7%)	149 (63.4%)	57 (30.2%)
Improved technique/usage of medication devices	69 (14.7%)	5 (11.4%)	33 (14.0%)	31 (16.4%)
Optimise the medication dose and/or number or type of medicines	83 (17.7%)	7 (15.9%)	40 (17.0%)	36 (19.0%)
Reduced medication side effects	38 (8.1%)	4 (9.1%)	14 (6.0%)	20 (10.6%)
Other	87 (18.6%)	10 (22.7%)	40 (17.0%)	37 (19.6%)

Table 49 – Goals identified in medications review

Source: Community Pharmacy in HCH trial Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2019.

Patients were offered services to assist them in achieving the goals they agreed to in the MMP. The most common service offered was blood pressure monitoring (31% of patients), followed by dose administration aid (25%).

Table 50 – Support services provided by community pharmacist

Support service provided	Patients	%
Asthma management plan	20	4.3%
Blood glucose monitoring	40	8.5%
Blood pressure monitoring	144	30.8%
Dose administration aid	115	24.6%
Medical device usage training/education	33	7.1%
Other	64	13.7%

Source: Community Pharmacy in HCH trial Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2019.

Outcomes of the MMP ((i.e. what the pharmacist did) are shown in Table 51. The most common outcomes for the first review included: the pharmacist updating reconciled medication list (98%), the pharmacist providing the patient with medicine education (89%), and the pharmacist providing the patient with disease state information (75%). The same goals were also commonly reported at the second review.

	Session			
Outcome	Initial (n = 468)	2nd (n = 141)	3rd (n = 2)	
M01 Pharmacist updated and reconciled medication list	460 (98.3%)	138 (97.9%)	2 (100.0%)	
M02 Pharmacist provided patient with medicine education	416 (88.9%)	123 (87.2%)	1 (50.0%)	
M03 Pharmacist provided patient with disease-state information	352 (75.2%)	98 (69.5%)	1 (50.0%)	
M04 HCH/GP advised of issues identified through other communication	140 (29.9%)	26 (18.4%)		
M05 Pharmacist used technology-assisted follow-up reminders (e.g. text messages, email messages)	108 (23.1%)	35 (24.8%)		
M06 Health Care Home/GP verbally consulted about patient	66 (14.1%)	19 (13.5%)		
M07 Pharmacist suggested patient referred to other health provider (e.g. allied health)	51 (10.9%)	14 (9.9%)		
M08 Pharmacist participated in HCH team care meetings	11 (2.4%)	1 (0.7%)		
M09 Pharmacist referred patient for an additional medication management service	56 (12.0%)	35 (24.8%)		
M10 Other	31 (6.6%)	6 (4.3%)		

Table 51 – Outcomes of the medication management plan (MMP)

Source: Community Pharmacy in HCH trial Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2019.

The Community Pharmacy in HCH trial is still developing, and the data presented here are preliminary. Recent interviews with PHNs indicate that in some PHNs relationships been GP practices and community pharmacies are being fostered through initiatives sponsored by the PHN. The next round of case studies will aim to obtain perspectives from community pharmacists and practices on the initiative.

Patient and carer experiences

This Chapter discusses patient, family and carer early experiences of being enrolled in the HCH program. The descriptions and experiences are drawn from interviews with patients, carers, and family members conducted between September and November 2018, and patient surveys conducted shortly after patents were enrolled (see Volume 4).

Experience of the primary care practice

Length of relationship with practices

As discussed above (Table 23), the patient survey revealed that the majority of HCH patients (65%) have been attending their HCH practice for five or more years, with further 16% attending three to five years.

The patient interviews also suggested patients had strong, long-standing relationships with their GP and practices. Several interviewees stated that they had been attending their practice for over 15 years, with one patient even reporting that he had been going the same practice for over 30 years. Due to these long standing relationships, some patients reflected on how their practices had changed over the years, including ownership and staff turnover.

Frequency of visits to their practices

Patients were asked how often they attended the practice in the last six months. Similar data are available (for a more recent period) from the practice extracts (Table 24), although in these data, the measure is of the number of GP consultations. Overall, the mean number of GP consultations was 6.92 over six months and 13.41 over 12 months. The patient data suggest that around half of patients have attended less than five times in the last six months, 29.5% attended between five and nine times and 28.1% attended 10 or more times,

The patient survey (Table 25) and practice data suggest (Table 24) HCH patients attend their practices frequently (an average of 13.41 GP consultations per year), and that those in Tier 3 are more frequent attenders compared with those in Tier 1. However, these data also showed variability in the frequency of attendances. The patient interviews suggested frequency was related to the severity of their conditions. More frequent visits were usually for routine blood tests, weight management, blood pressure checks, INR tests, and prescription refills:

"...I suppose I would see [my GP] three or four times a year. Yes, I mean because he has the regular sort of taking blood to just make sure...he's been watching the diabetes problem obviously, and the kidney problem that I developed after my heart attack. But he's been keeping an eye on those. So, about every three months, it depends on what the results are. If the results are good he'll spin it out another maybe six months until the next one." [Practice 1, Patient 1, interview, R2]

"Lately every three weeks or there abouts. Mainly to check my diabetes. I've had a number of problems with my eyes..." [Patient 1, Practice 18, interview, R2]

Reasons for coming to the practice

Most interviewees discussed the importance of the relationship with their GP. The strength of this relationship was often the main reason that patients had longstanding 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, interview, 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, interview, 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, interview, 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, interview, 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, interview, R2]

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, interview, R2])

- additional services and specialists practicing 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.

Access

The patient survey provided some insights into patient experience with primary care in the period before enrolling in HCH. Table 52 shows patients' responses to questions related to being able to get appointments when needed for urgent care ('care needed right away') and routine care. For urgent care, 83.8% of patients reported being able to get an appointment when they needed it 'most of the time' or 'always'. For 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'.

Questions	Appointment for urgent care ('care needed right away')	Appointments for a check-up or routine care	All attendances	
Needed this type of appoir	ntment over the last 6 months			
Yes	973 (48.2%)	1,521 (75.4%)	na	
No	1,022 (50.6%)	460 (22.8%)	na	
Don't know	23 (1.1%)	37 (1.8%)	na	
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%)	

Table 52 – Appointments over last six months

Sources: CATI surveys conducted by The Social Research Centre between December 2017 and March 2019.

Through the patient interviews 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, interview, R2]

"[The] GP, he's just easy to talk to, and also he keeps an appointment." [Patient 5, Practice 5, interview, R2]
Other patients reported issues with waiting times prior to a consultation or difficulties seeing their GP on short notice. Several patients often felt reflected their doctor's attentiveness and diligence in caring for their patients, but other described this as a drawback in attending their practice:

"You will have an appointment at 9 o'clock and [the GP will] be here at 11. But he will do the same for the next person ... You don't mind waiting, you know, because he looks after you. He's really good, very thorough." [Patient 6, Practice 4, interview, R2]

"...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, interview, R2]

Patient experience of chronic illness care

In the survey, patients were also asked questions that are part of the Patient assessment of chronic illness care (PACIC) instrument (Gibbons, Small, Rick et al., 2017; Glasgow, Wagner, Schaefer et al., 2005; Schmittdiel, Mosen, Glasgow et al., 2008). The responses to these questions are summarised in Figure 15. HCH patients reported that features of care that most commonly occurred 'always' or 'most of the time' were that the patient was:

- 'Sure that my doctor or nurse thought about my values, beliefs, and traditions when they recommended treatments to me'
- 'Shown how what I did to care for myself influenced my condition'
- 'Satisfied that my care was well organised'.

Features of care that were not reported to occur commonly included that the patient was:

- 'Given a written list of things I should do to improve my health'
- 'Contacted after a visit to see how things were going'
- 'Encouraged to attend programs in the community that could help me'
- 'Asked how my visits with other doctors were going'.



Patient assessment of chronic illness care (PACIC)

Figure 15 – Patient responses to specific questions from the PACIC instrument

Source: CATI surveys conducted by The Social Research Centre between December 2017 and March 2019.

There was no statistically significant difference in the dimensions between tiers, except for 'Follow-up and coordination', where the means were 2.3, 2.7 and 3 for tiers 1, 2 and 3 respectively, that is, Tier 3 patients generally reported better experience than the other tiers.

Experience of recruitment to HCH

Patient motivations and expectations

Many patients had limited to no expectations about the program. Some were curious about HCH and others trusted their doctor who recommended that they participate in the initiative:

"I didn't really have any thoughts on it at all. No, I just thought, well, if [my GP] wants me in it...I trust him." [Patient 1, Practice 1, interview, 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, interview, R2] "I was curious more than anything else I think, you know. And then they had an information evening or afternoon." [Patient 4, Practice 4, interview, R2]

"We'd got no expectations, because we've never heard of anything like this before. So, it was our first go." [Patient 3, Practice 16, interview, R2]

Other patients were motivated by easier access to team members beyond the GP to receive more information, guidance, and education regarding about their condition:

"Easier access...sometimes you get information that you want to know about and sometimes the doctors are not open enough to tell you about it. They want to find out what's going on and when you ask [GP1] sometimes, he says, yes, I'll fix it. And that's it. I just want to get a proper answer sometimes...What this is all about." [Patient 2, Practice 3, interview, R2]

"...What I expected [was]...that I'm not going to have to be making as many visits to the doctor, to tie her up. That I...can ring a nurse and say: Oh look, this is happening and she could talk me through things and so forth..." [Patient 1, Practice 4, interview, R2]

"Because, if I have any worries now, I can ring up that nurse, you know...Take the pressure off myself. And ask them, what do you they think I should do...so I think, yes, that would be a good thing. Because she said, we're here all the time, any day. Just ring if you've got any queries or worries." [Patient 6, Practice 4, interview, R2]

Other components of access that patients were attracted by included priority (e.g. some practices allowed HCH patients to see someone at the practice without having to wait), and the ability to get routine prescriptions and referrals without visiting the practice:

"I just see it [as] getting the prescriptions and being a priority patient. [Patient 3, Practice 3, interview, R2]

"[The] first thing I thought...was I don't have to pull [my son] out of the Cerebral Palsy League for an entire day just to get him a script. That was a total waste of time because he enjoys the Cerebral Palsy League so much and gets so much out of it. He has grown so much since he has been in it." [Patient 1 & Carer, Practice 6, interview, 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, Practice 5, interview, R2]

Patients also felt that they would receive more personalised care. The idea of better monitoring of their conditions and having a support team was comforting to patients and their carers:

"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, interview, R2] "I thought, you know, [the practice will] just keep an eye on her, that her medication and her health is going all right. Because...if I dropped off the perch...she'd need someone to look after her." [Patient 7 & Carer, Practice 16, interview, R2]

Greater involvement in their care and self-management were other motivators for patients:

"That's why I thought, well, losing a bit of weight, it might help a bit too, you know, be more flexible." [Patient 2, Practice 1, interview, R2]

How practices recruited patients to HCH

The methods used to recruit patients into HCH varied across practices. Many patients and carers reported that their doctor had a discussion with them at one their routine visits. This conversation often involved the GP explaining the program and its potential benefits and suggesting that the patient join the program:

"I don't remember it being very long and involved. [My GP] just said to me, you know...I'll recommend it...and I said all right I'm in it." [Patient 1, Practice 1, interview, R2]

"Well, [my GP]...mentioned it and then explained what it was about and she said...[we are] initially selecting you because you've...got a chronic problem...she wanted to see how the program went..." [Patient 3, Practice 5, interview, R2]

"[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, interview, R2]

"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, interview, R2]

Though many patients reported that their GP had an introductory discussion about the HCH, there were patients who said a practice nurse mostly explained it:

"Yes, [the nurse] I think done most of the explanation for [Patient 1], but [the GP] told us about it a bit." [Carer, Practice 10, interview, R2]

To recruit multiple patients to HCH and use time effectively, some practices organised an information forum. 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:

"[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, interview, R2]

"[The forum] was alright but the people were more concerned about the electronic medical records." [Patient 5, Practice 4, interview, R2]

"Yes, we attended the forum. But as I said, because it was so packed that day...And I found I really had to try and pick up a lot of ...what they were saying. I mean I got the gist of the thing, but I think I would still have liked to have known a bit more." [Carer, Practice 4, interview, R2]

"...I'm not saying how many there was, but there were people there that could not hear." [Patient 1, Practice 4, interview, R2]

Regardless of the recruitment methods, some patients reported that they had trouble understanding the program objectives and how it would work. This often reflected confusion amongst the practice staff explaining the program:

"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]

"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, interview, R2]

The GP-patient relationship seemed paramount in 'selling' the program to patients. Trust and confidence in the judgement of their GP and practice persuaded many patients to join HCH. They stated that GPs and staff members described various reasons why they should participate in the program, including:

Feature of HCH	What patients reported attracted them to join the program		
Alternative ways of accessing services	 Better access to practice via telephone and email. Regular contact with the patient via telephone to better monitor their conditions. The ability to request prescriptions over the phone without visiting the doctor face-to-face 		
Better access to a broader health team	 Ability to see the nurse without seeing the doctor, which may improve access. Team based care approach to managing chronic conditions. More coordination and sharing between practice team members and providers. Potential access to additional services and groups. 		
Chronic disease management	Better management of their chronic condition(s).Patient interest in tracking or monitoring conditions.		
Patient activation	Additional motivation and help to achieve health goals.		
Other	Their current lack of support (i.e. family or health support).Program takes pressure of the doctors and saves time.		

Table 52 Patient methyations for joining UCU

Source: Patient interviews, R2.

Early experiences with HCH

Patient surveys were conducted shortly after patients enrolled, and hence don't provide insights into patient experiences with HCH – this will be a focus in surveys conducted in Rounds 4 and 5. Patient interviews were conducted between September and October 2018, and provide some, but only early insights into patients' experiences of HCH. At that time

many practices were in the early stages of the HCH implementation and were focussing on patient enrolment. As a consequence, interviewees' reflections about the differences in their care under the HCH model were limited.

Despite many patients reporting that little had changed, some practices were further along in implementation and had made more noticeable developments that were apparent to patients. These are outlined in Table 54 and backed up by specific examples following the Table.

Feature of HCH	What patients reported attracted them to join the program
Alternative ways of accessing services	 Better access to practice via telephone. The ability to request prescriptions over the phone without visiting the doctor face-to-face.
Better access to a broader health team	 Priority for HCH patients. Increased access to care. Connected patients to additional services both inside and outside the practice.
Chronic disease management	 More proactive management/ better monitoring of chronic condition(s). Patient groups. 'Whole team' approach to care.
Coordination	• More effective management of correspondence with external providers via shared care planning platform.
Patient activation	Greater involvement of patient in their own care.Promotion of patient activation.
Other	 More holistic approach to care. More administratively organised with care and follow up.

Table 54 – Early changes patients observed with HCH implementation
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Interviewees cited the ability to obtain new prescriptions without seeing the doctor as a common new development associated with the HCH program. This was a positive change for many patients and carers:

"...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, interview, R2]

"One month I see [my doctor], the next month I just ring up and talk to the nurse and she gets the medications for me. I just go and pick up the script and go outside and [don't] have to waste [my doctor's] time and my time." [Patient 1, Practice 3, interview, R2]

"I rang up and I told him what I was doing, that I was a Home Care patient...They put the message through to her and sent them a fax number for the chemist...When I was ready I went to the chemist. [My son] stayed at the Cerebral Palsy League and I kept my visit...It was so easy, and I thought I don't know if people realise what a big difference this makes." [Patient 1 & Carer, Practice 6, interview, R2]

Some patients reported that they noticed a positive change in the practice approach to managing their chronic conditions. There was a feeling amongst some interviewees that they

were receiving more support and that their practices were monitoring their conditions more closely and efficiently:

"Well I've been on a trial for my glucose and blood pressure. I had to do that every weekday for about three and a half months...Well it was the best thing that happened to me in a long time because I've lost weight, I've eaten correctly, I'm doing everything I'm supposed to do because it was being monitored." [Patient 5, Practice 4, interview, 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, interview, R2]

Case study

Patient A describes himself as 'tech savvy'. He has coronary artery disease, diabetes, neuropathy, and asthma. To monitor his conditions in the past, he would record health measurements in an Excel spreadsheet and send the data to his GP. Since enrolling in HCH, he is enjoying managing his conditions and communicating with the doctor directly through the shared care planning platform. It has allowed him to reduce the time he spends at the practice and put all of his important health information into his care plan. Though he identified some minor shortfalls with the technology, he is excited about this advance and feels that the introduction of the program has been extremely beneficial in the management of his conditions.

In addition to better monitoring, patients described how their practice had become more proactive and comprehensive in the care they delivered since HCH started:

"...once a year you get checked in with your oncologist and they track you for a lifetime, whereas people with disabilities don't have that. They don't have someone following them for a lifetime, which is where the idea of Healthcare Homes becomes important... [the practice] liaises if he has to go in for a general anaesthetic, they will liaise with say the oncologist, the endocrinologist and find out what bloods need to happen so they can all be done while he's under that general anaesthetic. So, that sort of stuff is really important, because if I'm sitting in the hospital with him in emergency or something, I then have to ring all these people...But if I can just ring the GP and say can you speak to x, y and z and make sure that we've got everything we need covered." [Carer, Practice 5, interview, 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, interview, 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, interview, R2]

Involvement with care planning

Through the survey, patients were asked about their awareness of a treatment or shared care plan prior to enrolling in HCH, whether they had received a copy of the plan in the last six months and whether a copy of the plan was available on My Health Record (Table 55). Around 57% of patients surveyed reported being aware of a treatment or shared care plan. 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 56). Surveys in Round 4 and 5 will explore whether there are changes in these responses. This could be expected, as the development of a share care plan is a requirement for the HCH program¹².

Response	Patient had a treatment/ shared care plan	Patient was given a copy of treatment/ shared care plan in the last 6 months (1)	Patient has registered for My Health Record	Copy of the treatment/ shared care plan included in My Health Record (2)	
Yes	1,159 (57.4%)	850 (73.3%)	1,449 (71.8%)	420 (47.4%)	
No	747 (37.0%)	260 (22.4%)	338 (16.7%)	59 (6.7%)	
Don't know	112 (5.6%)	49 (4.2%)	231 (11.4%)	408 (46.0%)	

Table 55 – Patient responses related to treatment/ shared care which the GP or practice staff developed with the patient prior to enrolling in HCH

Source: CATI surveys conducted by The Social Research Centre between December 2017 and March 2019. (1) Reported for patients who reported that has a treatment plan/shared care plan. (2) Reported for patients who reported that has a treatment plan/shared care plan AND were registered for My Health Record.

Table 56 – Frequency with which treatment /shared care plan was discussed with the GP or practice staff over the last six months

		HCH risk tier			
Response ¹	Total	1	2	3	p value
At most or all consultations	485 (41.8%)	90 (41.7%)	244 (43.3%)	130 (53.3%)	
It was sometimes discussed	500 (43.1%)	105 (48.6%)	274 (48.6%)	103 (42.2%)	0.020
It was never discussed	79 (6.8%)	21 (9.7%)	46 (8.2%)	11 (4.5%)	0.030
Don't know	95 (8.2%)				

Source: CATI surveys conducted by The Social Research Centre between December 2017 and March 2019; ¹Reported for patients who reported that has a treatment plan/shared care plan.

The patient interviews indicate that patient involvement in care planning varied between practices. Some patients reported they were not aware of a 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, interview, R2]

"No, definitely he hasn't done [a care plan]...I take in a record for him every, when I see him, every three or six months, give him a look at it, and he'll pass on what he needs to the cardio guy. And so I know he's got the

¹² Some caution will be required in interpreting these responses, as some studies have shown that patients may have limited awareness of 'care plans'. They may also confuse the HCH 'shared care plan' with other 'care plans', such as for aged care and disability services.

record in his system. Where it goes from there, I don't know..." [Patient 1, Practice 1, interview, R2]

"I don't really need [a care plan] at the minute I'm kind of switched on with it all, I know what I'm doing. But they did emphasise any issues at all to contact them." [Patient 2, Practice 5, interview, R2]

Others reported they were actively engaged with their primary care providers when creating the plan and updating it online:

"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, interview, R2]

"Yes, they have a care plan, and I have seen a dietician..." [Patient 2, Practice 6, interview, R2]

"I think it's easier to identify what's going on for you and the doctor. I suppose, because at least it's in a plan. It's not just scrolling through notes on the computer...and see what's going on. At least you've got a plan there that's identifiable..." [Patient 1, Practice 18, interview, R2]

"[The care plan is] handy to keep track. If I go to the nurse and say: I need to see the eye specialist today, then I'll be able to look back on that and go oh yes, it's 12 months down the track, I need to go again. Good for keeping a track of that." [Patient 4, Practice 5, interview, R2]

Patients that were aware that they had a care plan mentioned discussing issues such as their medical history, functional status at home, diet, activity, emotional support, hobbies and personal health goals when the plan was developed. Most stated that they received a copy of it once it was completed or were confident that they could request one from their practice:

"I have a copy of the original plan. So, I presume once she's done the one for today then they'll update it." [Patient 6, Practice 16, interview, R2]

"I don't think so...I can't remember, but I'm sure I could access it on email." [Patient 4, Practice 5, interview, R2]

Patients sometimes accessed their care plan online:

"Well you can, now with this new care plan, we can e-mail [the practice nurse]...I think it's really good. Because like we have a caravan and we trot around. And like if you go to another state...we take our history with us. But now they don't have to, it's all on [the] computer..." [Patient 6, Practice 4, interview, R2]

The frequency of care plan reviews reported by patients ranged from yearly to every time the patient visited the practice:

"...[The GP] said she'd review it every six months...she said it was up to me. Like if I'm happy with the way things are going there's no need to interfere with anything..." [Patient 1, Practice 16, interview, R2]

"I think it's revised every three months...and they just make sure that everything hasn't changed, or if it's changed." [Patient 7, Practice 4, interview, R2]

"Every 12 months we sit down, or every six months at the moment...it has been." [Patient 1, Practice 9, interview, R2]

"[We discuss the plan with the GP]...Every time I'm here...Every four weeks we see him." [Patient 1, Practice 10, interview, R2]

My Health Record

At the time of interviews, HCH patients were still required to have a My Health Record to join the program, which was subsequently lifted. As discussed elsewhere, practices reported that concern about the security of their personal information was a common reason that patients chose not to enrol in HCH. The patient survey suggests around 72% of HCH patients had a My Health Record (Table 55).

Some patients were sceptical about the security of their personal information, but still enrolled:

"My friend rang me today and said...she felt a bit threatened about sharing all her medical information with other people. And she was a nurse...There's been a lot of publicity about that in the newspapers about medical information being shared and whether it's a good idea. People are very anxious about it." [Patient 1, Practice 8, interview, R2]

"...it's not something that concerns me...You have to sign up for the health record don't you which I've done and a lot of people aren't happy about that I understand...Hey look I've got nothing to hide, you know, if they really want to know." [Patient 2, Practice 5, interview, R2]

"Yes, I decided I wasn't going to be on it, and I thought, to hell with it. Because I think it's an open door, I don't think that it's going to be private, but at my age, who cares? But if I was younger..." [Patient 5, Practice 5, interview, R2]

One interviewee 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 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, interview, R2]

In some instances patients were not aware of their My Health Record or tended not to go online:

"I do, but we haven't got online, so it don't appeal to us." [Patient 3, Practice 16, interview, R2]

"I don't know that much about it...I haven't checked it." [Patient 4, Practice 5, interview, R2]

Improved access

Some HCH practices promoted improved access (via telephone, mobile, and email) as a benefit of enrolling. Where patients reported improved access since joining HCH, this was mainly through being able to phone or email the practice for a repeat prescription:

"I can ring up and the nurse organises one for me. She'll organise a prescription for me if I need it." [Patient 3, Practice 4, interview, R2]

Case study

Patients B and C are a couple who have several chronic diseases between them: cancer, coronary heart disease, bursitis, and arthritis. They both find their GP extremely thorough. Since joining the program, they have enjoyed the access to the HCH coordinator. She has become their "go-to person". They can request prescriptions over the phone, and the coordinator calls every month to check in on them and see if they need anything. Though they were pleased with the care that they were receiving prior to the initiative, they have found this extra support very helpful and noticed a big difference in their care.

Some practices have provided additional access to HCH patients by allowing them to contact the nurse with any questions or concerns:

"...it's very nice to have an email contact if you need a prescription you can just email and ask do I need to come in. I couldn't remember when I had to have my next blood test and I just emailed and you get an answer straight away. So, you're not worried should I go in, shall I not go in, shall I make an appointment. You know, it's more efficient." [Patient 2, Practice 5, interview, R2]

"Well, they certainly emailed, I received email updates, for instance, and then they ask you about the initial test and meetings with my doctor and the nurse, they sent me a summary, they in fact emailed me a summary." [Patient 4, Practice 5, interview, R2]

"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, interview, R2]

Some patients reported that practice nurses have increased the level of chronic disease management and support that they provide by regularly contacting patients via phone or email to check in or remind them about upcoming appointments:

"We've had phone calls to see...What was going on, and I said, we're fine." [Patient 3, Practice 4, interview, R2] "If I don't answer my phone, she will ring the management at the [town]. Can you please do me a favour and check on [the patient]? So the staff would come and say, are you okay [patient's name]? I say, yes I am okay." [Patient 2, Practice 6, interview, R2]

"[The nurse has] been very helpful. When I ring up she's always available. If she's not she calls me back and I'll... Why are you calling? I'm calling about my medication and things like that and she says to me, okay. She takes down everything and then she calls me or she sends me a text either the same day..." [Patient 2, Practice 3, interview, R2]

"...I'll just say, [HCH coordinator's name], flu injections nearly time? I'll ring you, [patient's name], as soon as they're due, and she does. And we'll get in and..." [Patient 6, Practice 16, interview, R2]

Some practices gave their HCH patients priority access so that they wouldn't have to wait when they turned up at the practice, or they could get a priority appointment if something urgent came up:

"It's much easier for me to do all the bits and pieces and because there's always the understanding that if it's something urgent you can still get in because they leave a spot each day where anyone from this system can come in and see on that day. So that's good. So it can't be any better than that." [Patient 1, Practice 9, interview, R2]

"See I wouldn't be able to see a doctor straight away, but they'd attend to me at the reception and send me round to the nurse if necessary ..." [Patient 3, Practice 4, interview, R2]

Although a few practices have made HCH patient a priority, some interviewees reported that their access and contact with the practice had not changed or that they expected better access:

"I usually, if I see the doctor, then they make an appointment in a fortnight, or if I have something urgent I just get on the phone and ring up, and they book you in... No, [it is] about the same, about the same, yes." [Patient 2, Practice 1, interview, R2]

"I thought I'd be more of a priority patient as I said we still wait maybe 20 minutes some times... but then I guess maybe if there are other people who are their priority you still got to wait." [Patient 3, Practice 3, interview, R2]

Experience of specific clinician types at the practices

Making the best use of the whole primary care team is central to HCH. Several practices focused on making their practice nurses more central to patient care and chronic disease management. Many patients interviewed were comfortable with this:

"I personally probably wouldn't have a problem with [the nurse replacing part of the doctor's job]. I mean I'd still very much like to have a regular contact with my doctor. There's a list of things where unless it's really necessary, I'm fine seeing the nurse..." [Carer, Practice 4, interview, R2]

"So, you know, it's a busy practice and I think if you can see a nurse and relieve the doctors a bit it's good." [Patient 3, Practice 4, interview, R2]

"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, interview, R2]

Case study

Patient D suffers from chronic pain and depression. He has a longstanding relationship with the practice and his doctor. They know his history and manage his multiple medications. Recently, he experienced his doctor as having poor 'bedside' manner. He considered leaving the practice, but was hesitant to do so because of his long relationship with the practice. His doctor convinced him to join HCH and, since enrolling, he primarily engages with the nurse. He finds her helpful, caring, and "always available." He feels that he has a much better relationship with the nurse than his GP and that she has been the biggest benefit to him since joining the program.

Some patients went further to say that having the nurse more involved in their care helped them manage their conditions more effectively and provided some additional support and motivation:

"...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 14, interview, 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, interview, R2]

"[The practice nurse and I] keep track of that and if it's up or down we know what to do, but we'll chat about the bits and pieces and it's great, it works really well. In the past, before we started this system because of the workload of the doctors you could see people sitting there for half, three quarters of an hour. I'm lucky if I'm in there for more than 15 minutes now...So it's a lot quicker, it's moving people through the system, it's not clogging people up. So, if you have...the practice on this sort of system you'd be able to actually work through a lot of people and be able to pick up things." [Patient 1, Practice 9, interview, R2]

"But it has come to the stage where I am bedridden so when I am in trouble, I have got someone to talk to, I can ring [the nurse] up. That is the best thing that has ever happened to me. They [are] so helpful, always worried, caring. How are you [patient]? Are you okay? They are awesome." [Patient 2, Practice 6, interview, R2]

Some practices established a specific 'HCH coordinator' role, and patients were equally pleased with this:

"[The HCH coordinator] rings up at least once a month. Oh... just ringing, do you need any prescriptions written out? So can't ask for any more than that." [Patient 6, Practice 16, interview, R2]

"So, now if I've got just a little problem that I don't really need a doctor, but I need some advice I can ask to see [the HCH Coordinator] and she'll set me straight. But it's not something that needs a doctor." [Patient 1, Practice 16, interview, R2]

Nevertheless, some patients were not comfortable with transfer of aspects of their care to a nurse:

"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, interview, R2]

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

"...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, interview, 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, interview, 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, interview, 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, interview, 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, interview, R2]

Patient activation

Some practices focussed on encouraging patients to take control of their health as part of the changes they made as an HCH. A few patients 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:

"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, interview, R2]

This was working out for some patients:

"[The GP] sort of will work on me to try and get me to do something. Then when he says, you know, look this is happening. He won't sledgehammer me, he'll just gradually manoeuvre me and manoeuvre me and suddenly I realise, ah yes, okay...But no, so they've both been good. Particularly the diabetes and the dietician and really sort of...it took [the dietician] I think, it wasn't till the second time that I was there, that I really sort of started thinking to myself, well, I should do something here." [Patient 1, Practice 1, interview, R2]

"I think it's good, yes. Because especially [the dietician]...getting back to 100 kilos. So, I've got a goal to work on. So, I want to prove to myself, and to someone else, even to my son too, I can do it." [Patient 2, Practice 1, interview, R2]

Experience of groups

Case study

Patient E has had two heart operations. Since these procedures, she has been depressed and anxious and has been nervous to walk and exercise alone. She felt she had, "lost her self-esteem." She joined HCH so that she could engage in group related activities and get additional support in managing her health conditions. Since enrolling, she has joined the walking, dietician and psychologist groups. She is enjoying listening to other patients and learning about her diet as well as engaging in routine exercise. Her blood pressure has come down. She enjoys the social aspect of the groups. She feels that she has gotten back her self-esteem and that people are looking out for her.

Some practices introduced group sessions for patients as part of the changes that they made as an HCH. One practice implemented three different groups: walking, dietician, and psychology group. Patients participating in these reported positive experiences. They also commented on the social aspect of the groups, which provided them additional emotional support and improved their quality of life:

"[The dietetics group] has made in a difference in how I exercise and how I try to stabilise any emotional problems. I had been a counsellor for 30 odd years and I still see a lot of my former clients, and unfortunately quite a few of my former clients have died recently, so I've been up and down a few times, it makes it pretty tough." [Patient 1, Practice 18, interview, R2]

"Well I joined it help myself...to try and help myself because I was going through a rut. I was going through depression and anxiety and stuff like that

and I thought that all this would do me good which I find it has helped me...I think my blood pressure's come down a lot, I'm still under a specialist and, yes, I think that every practice should have this... It's good to talk to people and it's good to relax for that session even if it is walking." [Patient 3, Practice 18, interview, R2]

"...there's other different things there that you can learn like you pick up off other people. No, I think it's good to hear what other people have to say. It helps you in ways....Well, it's got my self-esteem back a bit. Like before I was too frightened to go out and walk and stuff like that where knowing that you're walking with a group, that you've got people around you, it just makes you feel that little bit better and supportive a lot." [Patient 3, Practice 18, interview, R2]

"It makes you want to live a lot longer by coming here, you know." [Patient 2, Practice 18, interview, R2]

Other things patients would like

When asked about additional services or benefits that patients would like, most were largely content with the care that they were receiving and did not have any suggestions for their practices:

"No, not really, no. I mean, at this stage of my life we're pretty sweet, you know." [Patient 1, Practice 1, interview, R2]

"I'm just happy with the way things are going. Very happy." [Patient 5, Practice 16, interview, 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, interview, R2]

Others gave a few suggestions. One was around additional support that the practice could provide:

"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, interview, R2]

"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, interview, R2]

"You need to have somebody you can ring up and say, could I come and do, or can you come to me...I'm sure you'll meet a lot of people who find it

very hard to cope with how to, what to do with this and this and this or whatever." [Patient 1, Practice 14, interview, R2]

"There is one thing I guess when you have the test which I seem to be having loads of it would be nice to have some maybe an email back saying... rather than getting called in if there's an issue, it would be nice to just have a positive email. You know, everything okay, you know, to know it's being addressed rather than the onus being on you to find out, yes." [Patient 2, Practice 5, interview, R2]

Another was improving the overall integration of services:

"What would make life so much easier is if everything in the medical system worked together, interleaved together...I don't know how long it would take us to come to it, but they could be linked and then you've just got all the information and you put [in]...their Medicare number in and it pops up what their conditions are and you've got a better idea of how to treat them." [Patient 1, Practice 9, interview, R2]

Yet another was information on what services they could access:

"I think that one of the things that we need more of...I don't know what I'm entitled to..." [Patient 5, Practice 5, interview, R2]

Coordination with other providers

An objective of the HCH program is to promote and improved coordination between practices and other health care providers.

The patient surveys, specifically the PACIC items, provide some insights into patient perceptions of coordination of care (see Figure 15). Three questions are particularly relevant:

- Patients were asked how frequently they were 'satisfied that my care was well organised', with 90% of patients responding that this occurred always or most of the time.
- Patients were also asked how frequently they were 'Encouraged to attend programs in the community that could help me'. The responses to this question suggest that patients feel this does not occur frequently, with 40% indicating that this happens "none of the time".
- Patients were also asked how frequently they were 'Asked how my visits with other doctors were going'. The responses to this question suggest that patients feel this does not occur frequently, with 36% indicating that this happens "none of the time".

These responses reflect patient experiences in the six months prior to enrolment in HCH, and will be tracked through follow-up interviews in Round 4 and 5. However, they highlight some of the areas in which improvements may be expected through the HCH implementation.

Most patients interviewed felt there was good communication between their primary care practice and other providers:

"...I mean from my point of view it works well, you know. He seems to know what's going on." [Patient 1, Practice 1, interview, R2]

Case study

Patient F has Parkinson's disease. She joined the program after hearing that she may be able to access additional services to help manage her condition and that she would be more involved in her care. Since joining HCH, she has been attending a physiotherapy rehabilitation program specifically for people with Parkinson's disease. She recommended that other patients struggling with chronic conditions join the program as it promotes a proactive rather than reactive approach to care.

Since enrolling in the program, some patients discussed additional external allied health services that their GPs connected them with. 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, interview, 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, interview, R2]

"We've got...the dietician and the diabetes consultant, I think she's called. We've got in touch with those two. They've sort of, or got in touch with us, and said look you've been, your name's been put up to this and so we've started with them, which has been good." [Patient 1, Practice 1, interview, 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, interview, R2]

Pharmacists

Some patients reported having medication reviews involving a community pharmacist outside of the HCH practice. Some of these reviews took place prior to the introduction of HCH:

"I had a medication review at home, what, a couple of years ago? Couple of years ago before I had my knees done. Because I was in such pain the doctors were giving me all these opioids and patches...And we went and saw the doctor. And she arranged for a pharmacist to come out to the house." [Patient 5, Practice 16, interview, R2]

A few patients reported that their practices had a part-time pharmacist. This was beneficial as they were more likely to have had a medication review since joining the program:

"...I had a session with [the pharmacist] and he reviewed the tablets that I was taking and we managed to cut one out and he's cut a few others back, so that's the sort of practice that it is and, you know, the benefit that you get from it, because I was shovelling pills down like there was no tomorrow." [Patient 3, Practice 5, interview, R2]

Some patients were not sure if their GP had any contact with their pharmacists, and they had not had a medication review in the past:

"Well, [the GP] knows [the pharmacist]...because they're only about physically fifty yards apart. But whether he actually talks to him about me or whatever, I don't know. Possibly." [Patient 1, Practice 1, interview, R2]

"No, I haven't heard of that at all. And I do take... there are 12 prescriptions...But no, because I've always had to say could you check with the doctor if there's anything conflicting there. Doctors know straightaway if it conflicts, but no-one's mentioned a pharmacist might want to review it, no." [Patient 1, Practice 8, interview, R2]

"No, they don't go through it...But they're there, and someone puts them in the box and they have a look over, because when you ask any questions, they always seem to know." [Patient 5, Practice 5, interview, R2]

Carers and family members

In interviews with patients, several carers shared the struggles that they have faced in this role and lack of services and support available:

"If he sees me angry, he gets angry. Don't forget, you have two people in the house with temporal lobe epilepsy and that means they get very aggressive. That's what you have to keep under control. Once you start getting angry, you can get very angry." [Carer & Patient 1, Practice 6, interview, R2]

"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, Practice 5, interview, 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, interview, R2]

Some carers discussed the benefits of HCH, including feeling that they're been listened to, and better coordination of care and advocacy for the person that they're caring for:

"Yes, it is probably still early, but I mean, I'm great with it. And, well we have spoken to other people around here, you know...And you can see that they're actually like, yes they're really listening." [Carer, Practice 4, interview, R2]

"...that's a really important message, that advocacy role that the GP can play. And that's some experience with the practice probably before the Health Care Homes, but Health Care Homes is probably enabling that a little bit." [Carer, Practice 5, interview, R2]

Case study

A mother is the primary carer for her teenage son who has severe intellectual and physical disabilities, partly related to a brain injury. He is nonverbal and hearing impaired. She described her family's difficult journey to ensure that her son gets adequate care in the long term. Prior to HCH, she reported that the practice she attends was incredibly helpful in supporting the family and coordinating her son's care with other providers. But she feels that the structure of the HCH program and the whole team care approach has provided additional support which is helping her family manage her son's care and advocate for adequate care. The ability to request prescriptions over the phone has been extremely helpful as undertaking a consultation in person with her son is difficult and stressful. Though she sees this program as a step in the right direction, she would love to see a stronger focus on providing better long-term support and care coordination for patients with disabilities and their families in all areas of the health system.

Patient suggestions for HCH

Most patients interviewed recommended that other individuals join HCH due to better information about their condition, more seamless care within the practice amongst other reasons:

"I'd recommend it, no trouble at all...I think the more informed you are about...the conditions you've got, if you've got a chronic condition, the more informed you are, the better off you are." [Patient 1, Practice 18, interview, R2]

"...I think, that's what makes it so easy now. Because before there might have been...just the doctor and maybe one or two of the nurses. But it's now at the point where, even if [the patient] can't see his regular doctor, he has to see someone else, they all pretty much know now, you know, [the patient's] situation, because it's clearly up on their computer..." [Carer, Practice 4, interview, R2]

One patient commented that it is too early to say whether HCH is the right model, but that the program suffers from lack of awareness:

"I tell everyone. No-one knows. I don't know how many people with disabilities are using the service, but I don't know a single other person that even knows about Health Care Homes. And they're like, what is that? I'm like, well, it's this really great... And again, I don't really know if it's the right model for long-term, because it's only the beginning but we just need someone to pull it together, that's the key message. Whether this is it, I don't know...it might need tightening up a bit." [Carer, Practice 5, interview, R2] Some patients and carers were concerned about the continuity of the program:

"Yes. I've thought about it and it can be good if it keeps going. That's what I thought, I hope they're not going to pull the rug from under us because I see it can be good, especially with...having a disabled son." [Patient 1 & Carer, Practice 6, interview, R2]

Conclusion

General findings

The HCH program went 'live' in late 2017, when practices who had formally signed up to the program could enrol patients. Most practices were slow doing this, and it wasn't until June 2019 that they ramped it up as the deadline for enrolments (end of 2018) got closer. When an extension of the program was announced – in December 2018 – enrolments continued to increase steadily through to the end of the revised deadline (mid-2019).

Many practices were slow in enrolling patients initially as they hadn't yet worked out what they were offering as an HCH. They struggled to articulate the value proposition for patients specifically for their practice. This was sometimes because they thought that they were already providing good quality care and/ or their approach was consistent with the HCH model. Another issue for GPs in particular was their perception that their patients expected to see them, and thus they were reluctant to delegate tasks to other staff.

Patients that were approached to enrol in HCH had concerns around the security and confidentiality of their personal and medical information, in particular, the requirement to have a My Health Record. This requirement was lifted in the latter part of the 2018. Sometimes patients were confused explanation of HCH provided by about practice staff. They were also concerned that being in HCH might impact their relationship with their doctor. Though most who took it up did so because their doctor, whom they trust, suggested it.

For most practices, enrolling patients took time.

Parallel to enrolling patients, practices were working out what they were going to do as an HCH. In doing this, they had access to program information, training resources and facilitators based in the PHNs. In using these resources practice staff struggled with time: program information (e.g. practice handbooks) was difficult to digest, the training resources were lengthy and sometimes unsuitable for individual staff's needs, and they had to find time to spend with PHN practice facilitators. To reduce overwhelm, PHN practice facilitators produced more accessible resources and presented information only when practices needed it and/ or were ready for it. Change leaders, peer-to-peer engagement and sequencing change were key enablers for practices transitioning to an HCH.

Practices identified teamwork and delegation, more regular follow-up with patients and enhanced access for patients as key initiatives that they were focusing on as an HCH.

However, there were practices that were yet to make changes. Low enrolments affected practices' ability to make any significant changes, as did other barriers such as lack of GP-engagement and physical space.

Practices that had made changes reported that the program was already impacting positively internally (improved processes of care and increased staff satisfaction) and on their patients. Where patients noticed differences to their care since joining HCH, it was mainly being able to contact a nurse via phone or email with any questions or for a repeat

prescription. Patients also reported follow up by the practice by phone or email to check in or remind them about upcoming appointments.

Some practices established groups on specific health issues. Patients not only reported positive experiences with these groups in relation to their health issue, they also noticed positive changes emotionally due to the social aspect.

The HCH model provides the opportunity for GPs to delegate responsibilities to other team members. As mentioned earlier, this was an issue for some GPs who were reluctant to share responsibility for the care of their patients with others. Time to foster teamwork and develop trust will potentially help, as GPs that were comfortable delegating had been exposed to HCH-like models in other countries. Some GPs recognised that the HCH model can take pressure off them.

In some instances practices introduced new roles as part of HCH. These included a dedicated nurse for HCH patients and medical practice assistants. There were financial barriers for other practices in doing this and in some instances they problems with recruiting and holding on to staff.

The Community Pharmacy program was introduced in the HCH trial in August 2018. It is too early to draw any conclusions about the initiative, but in mid-2019, just under 500 patients had been referred to community pharmacists by their HCH, and just less than a third had already had a second review by the pharmacist.

Other key components of the HCH program are risk stratification, shared care planning and the bundled payment.

The RST commissioned by the Department of Health for the program was initially one of the biggest challenges for practices in their implementation of HCH. Technical issues were a major cause of practices withdrawing, and continued for many of the practices that remained. There were also concerns about the validity of the tool. However, GPs could override the tool to select patients that they thought would benefit from the program, and they did so for about a third of the patients selected. Training in the tool (particularly in the assessment that formed the second part of the risk stratification process) and in the meaning of the tiers were identified as priorities for future rollout of the program.

Practice had until the end of 2018 to implement an electronic shared care planning tool. Practices reported initial issues in implementing a tool, which were subsequently resolved, but problems with the usability continued. Another concern for both practices and PHNs was the potential lack of compatibility of tools used by providers within any one region, threatening the goal of improved coordination.

The bundled payment was also a focus for many practices in the early stages of implementation. It was both what attracted practices to join the program and a reason that they withdrew. The latter was due to issues with working out tax and how to share the payment within the practice, and the perception that individual GPs had about the payment approach.

The financial impact of the bundled payment compared with fee-for-service has been a concern for practices more generally. Many reported comparing the two. Some practices deliberately only enrolled a small number of patients to do so, but it is too early to tell.

Overall, it has been important for Australia to trial HCH. The implementation of the program has identified many areas that need greater attention in a wider rollout. It has also shown that HCH could not have been mandated – not as a concept and definitely not as a formula for how practices should do it; practices have needed to experience it for themselves or learn from others. So far it is acceptable and resulting in positive experiences for practices that have persevered and for their patients.

Emerging lessons

While the evaluation and the program are still in progress, lesson are emerging in several areas. These are summarised below.

Emerging lessons

Overall implementation

1. For complex programs such as HCH, allow sufficient time for implementation.

Practice set-up

2. For programs such as HCH, allow time for practices to prepare for practice change prior to enrolling patients

Patient enrolment

- 3. Exploit multiple avenues to build patient awareness of programs such as HCH, including the benefits.
- 4. Provide additional practical guidance to practices on how to communicate the benefits of programs such as HCH succinctly to patients and their carers/ families.
- 5. In future, for programs such as HCH, allow sufficient time to implement processes for enrolling patients.
- 6. Streamline enrolment processes, whereby relevant information is recorded once and used for multiple purposes. In the HCH program this included registration with the Department of Human Services, flagging enrolled patients within the clinical management software, risk stratification, shared care planning and evaluation.

Changes within practices

- 7. Use peer-to-peer approaches to raise awareness of initiatives such as HCH amongst GPs.
- 8. Practices to identify key people to facilitate the change process. 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 as a team.
- 9. Create more opportunities for peer-to-peer engagement of clinicians involved in implementation.

Patient experience

- 10. Develop succinct messages that communicate the benefits of the initiative to the patient and address their concerns.
- 11. Use multiple avenues to communicate these messages to patients, their families and careers, and the broader community.
- 12. Develop the capacity of practices to engage with patients, families and carers in designing and implementing change.

13. Patients, families and carers need time to build confidence in a wider primary care team.

Practice facilitation

- 14. External practice facilitation is valuable for practices to achieve the level of transformation needed to operate as an HCH.
- 15. Rapport and trust between the practice facilitator and practice staff are foundations for practice facilitation.
- 16. A key to facilitation is assessing each practice's readiness, culture, and environment, and tailoring changes to the unique needs of the practice.

Training

17. Shorten and sharpen training materials: identify opportunities to reduce their length, reduce repetition, make them more practical, and subset them further so that staff can focus on segments based on their level of knowledge and their role.

Risk stratification and shared care planning

- 18. Allow time for developing and implementing new information technology.
- 19. Explore opportunities for better integration of functionality (e.g. risk stratification and shared care planning) within practice management software.
- 20. Invest in understanding how new technology will integrate into clinical processes and use these lessons to enhance tools.
- 21. Develop further training for clinicians in risk stratification tools, including improving their understanding of how the tools work and how they should be interpreted for consistent application.
- 22. Use quantitative and qualitative findings from the HCH evaluation to improve the current RST.
- 23. In promoting shared care planning, consider how solutions will be taken up by health care providers across a region.

Bundled payment

- 24. Guidance and tools to help with practical implementation of payment reform amongst practices with different revenue sharing schemes for their GPs are necessary.
- 25. The information required to manage a bundled payment within a practice should be captured in the practice management software.

Practice recruitment

- 26. For programs such as HCH, allow time and invest in developing and communicating information about the program during the EOI process or equivalent. This should include providing information sessions about the program for interested practices.
- 27. Make greater use of PHNs in any assessment process involving primary care practices.
- 28. In assessing applications, ensure there is evidence that GPs within the practice have been adequately informed about the program and a sufficient number support its implementation.
- 29. In funding agreements, set out clear expectations for practices and their staff in working with external facilitators.
- 30. Ensure funding contributions meet the costs of participation.

Evaluation questions

The HCH evaluation aims to answer the key question described on page 3.

The Interim report 2019 has made significant progress in answering question 1: How was the HCH model implemented and what were the barriers and enablers? Chapter 2 of this volume describes the program's implementation and other sections address specific aspects of program implementation. In Table 57, we summarise our emerging understanding on the enablers and barriers to the program's implementation. In the Interim report 2020 and the Final Report, this understanding may be further refined and extended reflecting additional evidence gained over the next eighteen months.

Enablers	Challenges				
Policy settings					
 Policy reform to allow voluntary enrolment by patients with a practice and a GP and to bundle payments made to GPs for services provided to chronically ill patients. PHNs have implemented readiness programs and other initiatives that align with the principles and goals of HCH. State/ territory initiatives are being pursued in parallel under the COAG Bilateral Agreements. 	 There is uncertainty about the future beyond the HCH program 				
Funding reform	and incentives				
 The bundled payment is intended to move the focus away from atomic service interactions and encourage flexibility and innovation in the way that practices deliver care to patients with chronic illness. The initial HCH grant incentivised practices to participate and prepare for the program. 	 Stakeholders are concerned that the costs of initial implementation and transformation are not sufficiently recognised. Stakeholders are concerned that the bundled payment may not be sufficient remuneration for the services provided to HCH enrolees. Practices invested initial efforts in working out the tax implications of the bundled payment and how to distribute the payments internally. This continues to be an issue for some practices. At the level of patient enrolments, many practices will not have sufficient resources to invest in new staffing. 				
Transformation and c	hange management				
 Training, resources and services have been developed to help practices with the transformation process. A new workforce of practice facilitators has been established to support practices' transformation to HCH. PHNs contributed their existing infrastructure/ supports (e.g. data sharing agreements with the process). 	 Information provided to practices prior to signing up for HCH was insufficient for them to understand the transformation that the model is requiring. Not enough time was available for practices to get ready prior starting to operate as an HCH: Time was needed to develop and implement infrastructure (e.g. new IT/ processe), achieve huw in from key practice. 				

Table 57 – Enablers for HCH implementation and current and ongoing challenges

Enablers	Challenges			
communities of practice) and provided additional supports in the change process.	 staff and implement changes to clinical processes. Some practices changed owners and/ or had staff turnover, which slowed implementation or caused them to withdraw. Not all GPs within practices participated in HCH. Uptake of online training has been low. It needs further refinement. Practices have struggled with how to 'sell' HCH to their patients. Patient enrolment is labour intensive. Public debate around My Health Record meant patients were more sensitive to privacy and confidentiality issues. 			
Care coo	ordination			
 Shared care planning is a key feature of HCH aimed to increase the involvement of patients in their care and improve the coordination of the services they receive inside and outside the HCH. Web-based approach allows providers external to the HCH to access patients' care plans without the need to install software or infrastructure other than an internet connection. 	• Lack of a regional approach to shared care planning or interoperability of shared care planning platforms means that sharing plans with other health care providers in the health care neighbourhood may be difficult.			
Health informa	tion technology			
 The program introduced new technology to identify high-needs patients that can benefit from the new model. The program is driving the uptake of IT for shared care planning. Some vendors of primary care practice system responding to the needs of the practices by building additional functionality into their software related to HCH. 	 Practices had insufficient time to learn the new tools to use them effectively before they were implemented. The time and resources associated with implementing new technology meant some practices withdrew from the trial. 			
Data and performance measurement				
 The HCH program has strengthened data sharing between PHNs and practices, enhancing the scope for benchmarking amongst practices, which has the potential to improve chronic disease management. HCH encourages practices to improve the completeness and quality of their data (e.g. the RST highlighted data quality issues, the benchmark reports will provide comparisons with similar practices that may help identify quality improvement priorities for practices). The evaluation of the trial has established infrastructure and processes (e.g. extracts 	 Practice data may be incomplete or not of sufficient quality for effective use of the RST and/ or for effective chronic disease management. There is no national minimum data set for primary care on which to build the data provision, feedback and development of common quality measures. 			

Enablers	Challenges
from practice clinical management systems,	
data linkage, surveys) that can be used for	
ongoing evaluation of the model.	
The evaluation specified clinical process	
indicators which align closely with the PIP-	
Quality Improvement (QI) indicators which	
had been subsequently adopted.	

The second key evaluation question concerns how the HCH model changed the way practices approach chronic disease management. In Chapter 8 of this report we have described changes that practices have made. In subsequent reports we will describe these in more detail, and use practice data extracts to track how these changes may have impacted selected clinical processes and changes in patient experiences of the chronic illness care they receive. A challenge for answering this evaluation question is that many participating practices have already adopted good chronic disease management approaches and have applied the elements of the health care home model over many years. Some stakeholders suspect that the evaluation will struggle to identify major changes in clinical processes or patient experience. The next report will seek to explore changes in chronic disease management and also whether HCH supports practices to strengthen chronic disease management and provides a more appropriate financial basis for quality care.

The third key evaluation question concerns whether patients enrolled in HCH experience better quality care? Chapter 12 of this report has reported on a baseline for patient experiences. The second and third rounds of patient surveys and interviews will provide insight into whether patient experiences have changed.

The fourth key evaluation question related to the financial effects of HCH for governments, providers and individuals? Answering this question will require analysis of linked data related medical benefits, pharmaceutical benefits, hospital and emergency department care, and residential care. This will principally occur in the final evaluation report. One aspect of this question related to patient co-payments. The evidence to date suggests that co-payments directly related to the HCH have been minimal. However, a full picture of the impact for patients will require analysis of co-payments related to all MBS items and a comparison with similar patients receiving usual care.

The remaining key evaluation questions related to the Community Pharmacy in HCH. As this component of HCH was implemented later, the answers to these questions will be mainly address in the next two reports.

Table 58 summarises the reports in which the key questions will be partially or fully addressed. Appendix 3 to Volume 3 lists the detailed questions identified for the evaluation and cross references the sections in this report at which these detailed questions are addressed.

			Evaluation reports			
Key question		2019 Interim report	2020 Interim report	Final report (late 2021)		
1.	How was the HCH model implemented and what were the barriers and enablers?	(ſ			
2.	How does the HCH model change the way practices approach chronic disease management?	•		•		
3.	Do patients enrolled in HCH experience better quality care?		ſ	•		
4.	What are the financial effects of the HCH model on governments, providers and individuals?			•		
5.	Is the community pharmacy component a beneficial component of the broader HCH coordinated care model and should it be included as part of any future roll out?		(•		
6.	Do patients who received medication management services as part of the HCH trial experience better health outcomes than patients who did not?		(•		
7.	What was the level of engagement between HCH practices and community pharmacy (care coordination)?		(•		
8.	Is the inclusion of a pharmacy component in HCH financially viable?		ſ			
	I = Partially addressed; = Fully a	ddressed.				

Table 58 – Key questions for the HCH evaluation and the evaluation reports in which these will be addressed

Evaluation of the Health Care Homes program – Interim report 2019 – Vol 2 Main report

References

AGPAL. (2018). Interim Project Progress Report for Health Policy Analysis September 2018. Brisbane: AGPAL Australian Association of Practice Management. (2017a). Health Care Home Activity Monitoring Guide October 2017. Melbourne: AAPM. Australian Association of Practice Management. (2017b). Webinar: AAPM Health Care Homes Activity Monitoring Guide. Retrieved 13 September, 2018, From https://www.aapm.org.au/Knowledge-Hub/Healthcare-Homes Australian Government Department of Health. (2016a). Factsheet: Patient eligibility Australian Government Department of Health. (2016b). Factsheet: Stage one modelling Australian Government Department of Health. (2016c). Health Care Homes announcement media release [Press release]. Retrieved from http://pandora.nla.gov.au/pan/154649/20160508-0839/www.pm.gov.au/media/2016-03-31/healthier-medicare-chronically-illpatients.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 Australian Government Department of Health. (2017b). Minimum requirements of shared care plans Australian Government Department of Health. (2017c). Patient Handbook Australian Government Department of Health. (2018a). Health Care Home Funding Assurance Toolkit March 2018. Canberra. Australian Government Department of Health. (2018b). Health Care Homes Clinical Reference Group Q&As. Australian Government Department of Health. (2018c). 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-carehomes-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. Berwick, D. M., Nolan, T. W., & Whittington, J. (2008). The triple aim: care, health, and cost. Health Aff (Millwood), 27(3), 759-69. Bodenheimer, T., Ghorob, A., Willard-Grace, R., & Grumbach, K. (2014). The 10 building blocks of high-performing primary care. Ann Fam Med, 12(2), 166-71. Bodenheimer, T., & Sinsky, C. (2014). From triple to quadruple aim: care of the patient requires care of the provider. Ann Fam Med, 12(6), 573-6. 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. 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). Medical Care, 43, 436-44. HARP. (2009). Summary: HARP risk calculator. Retrieved 10 September, 2018, From https://adma.org.au/download/western-harp-risk-calculator/

- Health Policy Analysis. (2019). Evaluation of the Health Care Homes program Evaluation plan (Updated 2019). Canberra: Department of Health.
- Herdman, M., Gudex, C., Lloyd, A., Janssen, M., Kind, P., Parkin, D., et al. (2011). Development and preliminary testing of the new five-level version of EQ-5D (EQ-5D-5L). *Qual Life Res, 20*(10), 1727-36.
- 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), 1918-30.
- Hippisley-Cox, J., & Coupland, C. (2013). Predicting risk of emergency admission to hospital using primary care data: derivation and validation of QAdmissions score. *BMJ Open*, 3(8), e003482.
- Khanna, S., Rolls, D. A., Boyle, J., Xie, Y., Jayasena, R., Hibbert, M., et al. (2019). A risk stratification tool for hospitalisation in Australia using primary care data. *Sci Rep*, 9(1), 5011.
- MacColl Center for Health Care Innovation at Group Health Research Institute, Qualis Health, WentWest, & AGPAL. (2017). Health Care Home Assessment. Brisbane.
- Medical Software Industry Association. (2017). Healthcare homes. Retrieved 20 September 2018, From https://www.msia.com.au/healthcare-homes/
- 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*. Adelaide: Primary Health Care Research & Information Service.
- Precedence Health Care. (2017). Health Care Home Risk Stratification Tool Training. Primary Health Care Advisory Group. (2015). Better Outcomes for People with Chronic and
- Complex Health Conditions: Final Report: Department of Health.
- Ramaswamy, V., & Ozcan, K. (2014). The Co-Creation Paradigm: Stanford Business Books. 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.

Appendix 1

Practice eligibility criteria

Only practices in the 10 selected PHN regions were eligible to apply for the trial. The other requirements were that the practice must:

- Be a legal entity, able to enter into a legally binding agreement, and must have an Australian Business Number, be registered for the purposes of GST, be a permanent resident of Australia and have an Australian bank account.
- Be accredited and maintain accreditation as a general practice or an AMS, assessed against the Royal Australian College of General Practitioners Standards, or be registered to be accredited. If the practice is registered for accreditation, full accreditation must be obtained within 12 months of executing the grant agreement.
- Maintain current insurance, including public liability insurance, ensure all health professionals maintain current professional indemnity cover.
- Have access to, or be prepared to obtain access to, the Department of Human Services' Health Professional Online Services (HPOS) by the date of executing the grant agreement.
- Participate in, or be prepared to participate in, the Practice Incentives Program eHealth Incentive by the date of executing the grant agreement.

(Australian Government Department of Health, 2016d, pp. 6-7).

Incentive grant

Practices were to be paid a one-off \$10,000 incentive grant (GST exclusive) (Australian Government Department of Health, 2016d). The amount was "intended to incentivise participation and facilitate readiness for a program" (p. 3), and could be used for:

- Supporting the recruitment of personnel.
- Training and educating practice personnel.
- Establishing new service delivery processes.
- Establishing new billing processes.
- Establishing information technology systems.
- Identifying a patient cohort to assess for eligible patients that would benefit from the HCH model of care.
- Participating in the evaluation.

It could not be used for:

- Capital works, e.g. the purchase of land or the purchase, construction or renovation of premises.
- The purchase or repair of equipment or motor vehicles.
- Retrospective items or activities.

- Lobbying and activities which support political parties or campaigns.
- Activities which subsidise commercial activities.
- Clinical trials.

(Australian Government Department of Health, 2016d, p. 7).

Practices that withdraw from the program are required to either repay the full amount of the grant or complete a statutory declaration to say how much they have spent against the eligible uses and repay the balance.

HCH assurance and compliance

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

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

The Department has stated that its compliance approach is focussed on education and support. It developed a Health Care Home Funding Assurance Toolkit (Australian Government Department of Health, 2018a) 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 contains:

- strategies for minimising incorrect billing
- an HCH funding assurance manual template including examples of policy statements and operational guidelines that HCHs can use to develop their own MBS billing manual
- an HCH self-assessment checklist
- pre- and post-participation questionnaires for HCHs to rate their HCH funding assurance approach (e.g. "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 (Australian Government Department of Health, 2018c) states 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.

Although the Department has developed criteria for appropriate delivery of HCH services (see box below), it will not audit or review the quality of clinical care provided. For this, it is deferring to existing mechanisms such as requirements established by professional associations, regulatory frameworks and clinical standards.

Appropriate delivery of HCH services

The Health Care Home Funding Assurance Toolkit (Australian Government Department of Health, 2018a) defines '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.
- 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.

(pp. 7-8)

Practice staff and PHN practice facilitator training

The Department of Health engaged AGPAL to support the implementation of HCH through:

- developing online training modules for HCHs
- developing handbooks for patients and for HCHs explaining the model
- supporting PHNs to support HCHs through train-the-trainer workshops, a dedicated
 national practice facilitator to support practice facilitators in their work through
 "providing practical, responsive implementation support as required via phone, email
 and teleconferencing, as well as organising and hosting a series of coaching
 webinars utilising expert guest speakers" (AGPAL, 2018, p. 31).

AGPAL based its training on the '10 building blocks of high performing primary care' (Bodenheimer et al., 2014) and the 'co-creating health' philosophy (Ramaswamy & Ozcan, 2014).

AGPAL developed 11 online training modules:

• Module 1: Introduction to the HCH

- Module 2: Engaged leadership
- Module 3: Patient enrolment and payment processes
- Module 4: Data-driven improvement
- Module 5: Team-based care
- Module 6: Developing and implementing the shared care plan
- Module 7: Patient-team partnership
- Module 8: Comprehensive and coordinated care
- Module 9: Prompt access to care
- Module 10: Population management
- Module 11: Quality primary care into the future

The first six modules were released in August 2017, and the remaining by December 2017.

AGPAL designed and delivered two train-the-trainer workshops for PHN practice facilitators. The first workshop, covering the initial six modules, was held on 14-16 August 2017. The second workshop, covering up to module 10, was held on 9-10 November.

Individuals completing the training modules can claim continuing professional development points from the following organisations:

- Australian Association of Practice Management (AAPM)
- Australian College of Rural and Remote Medicine (ACRRM)
- Australian Practice Nurse Association (APNA)
- Royal Australian College of General Practitioners (RACGP).

AGPAL will to continue to support the HCH implementation to the end of December 2019 through continuing the national practice facilitator role and ongoing coaching webinars. Its goals are:

- Increased engagement with the training modules via facilitating more flexible access to content.
- Developing a suite of practical education and training templates to support HCH implementation activities.
- Improved contribution and access to practice facilitator's webpage.
- Facilitating increased sharing of case studies, barriers, implementation challenges and success stories between practice facilitators.

(AGPAL, 2018).

Preparation and training of facilitators for the role

Train-the-trainer workshops

AGPAL collected data from participants at both the train-the-trainer workshops. Participants scored various dimensions of the sessions on a seven-point Likert scale where 1 was 'Extremely unhelpful/valuable' and 7 was 'Extremely helpful/ valuable'. Feedback indicated that all sessions were effective in increasing practice facilitators' HCH knowledge and skills.

Qualitative data from interviews with the PHNs identified that what practice facilitators liked most about the workshops was sharing information with other facilitators:
"the thing, for me, that was really good, was, actually, the conversations that we had afterwards, about how we would do it differently." [PHN 8, interview, R1]

This was supported by the analysis of participant feedback provided by AGPAL. The most highly rated sessions were the two additional sessions delivered at Workshop 2, which amongst other objectives aimed to encourage sharing of implementation experiences amongst the facilitators and provided opportunities for establishing learning collaboratives and partnership building. Nevertheless, practice facilitators said that they would have liked more sharing, particularly:

"...what are likely to be the challenges and barriers... you are going to encounter...then have more of a workshop discussion... when you have people round a table together it's a different dynamic." [PHN 5, interview, R1]

"more open forum/discussions as opposed to only presentations." [PHN 2, survey, R1]

They also wanted the workshops to better prepare them for their role, and to do this, they would have liked them to be more practical:

"So, understanding of the program, yes, that was very good but putting it into practice and applying it is ... the next step, which I don't think it fully met...." [PHN 1, interview, R1]

"More instruction on how to get in and do." [PHN 9, survey, R1]

Facilitators commented that the workshops repeated the content of the online modules, and that the time could have been used to:

"...delve deeper into some of the things which are going to be very new." [PHN 5, interview, R1]

Another issue was timing. Facilitators thought that the August and November 2017 workshops were too close together. Practices weren't ready to receive the information that the facilitators learned at the November workshop until well into the following year:

"Because people's head space wasn't in ... those topic areas, those last few modules." [PHN 5, interview, R1]

They also thought that the workshops were trying to cover too much information, and that instead they would have benefited from having more workshops further apart, aligned with practices' stages of implementation. This was borne out in the PHN survey which also identified the need for the training to be more practical and to reduce duplication with the online module material and aim for depth rather than breadth:

"decrease the quantum of the content and aim for depth instead." [PHN 8, survey, R1])

The most commonly identified improvement for the workshops through the survey of PHNs was use of presenters (including clinicians) from Australian practices that had already implemented HCH-like models, or from countries that have more in common with the

Australian healthcare system (e.g. New Zealand). While some liked hearing from the American experts, many thought that their health system was too different to Australia's for the presentations to be useful:

"...I found the American guests and speakers and facilitators, while good, weren't necessarily in tune with the Australian context.' [PHN 1, interview, R1]

Practice facilitators identified networking with other facilitators across the PHNs as a key enabler for their roles. They particularly enjoyed this aspect of the train-the-trainer workshops and would have liked more sharing at those workshops, as well as more interactive webinars.

Other changes suggested in the PHN survey were:

- acknowledgment of current skill level of facilitators
- better understanding of Commonwealth's direction and expectations of HCH
- workshops delivered in a more iterative way
- grouping PHNs into like groups to tailor training to their needs.

Other support for practice facilitators offered through the program

AGPAL analysed feedback from 22 practice facilitators on the HCH Handbooks. The results were that:

- 45% of facilitators accessed the Handbook for general practices and ACCHS frequently or very frequently.
- 68% somewhat agreed, agreed or strongly agreed that 'the content of the Handbook was appropriate, comprehensive, and increased end users HCH knowledge'.
- 23% accessed the Patient Handbook frequently or very frequently.
- 29% accessed the Care Team Handbook frequently or very frequently.

According to the AGPAL analysis, practice facilitators who responded were generally satisfied with the support provided by the national practice facilitator (89% of practice facilitators somewhat agreed, agreed or strongly agreed) and agreed that their learning experience was enhanced through the coaching webinar curriculum (84% of facilitators somewhat agreed, agreed or strongly agreed).

In interviews, practice facilitators also reported that they found the coaching webinars useful but would like them to be more interactive. Another was to schedule topics to reflect what was happening in the program. For example, it was mentioned that the webinar on the HCH-A tool was held about a week before the results of the tool were due for the evaluation (Part B of the practice survey). Facilitators also suggested interactive live webinars might have been useful for practices to participate in.

Responses to the Round 1 PHN survey offered the following as the top changes that would improve the development of skills and capabilities of practice facilitators:

• More practical support. Practice facilitators thought that the webinars and coaching could have been more action and/ or solution-based, using practical examples from the Australian context and working through solutions to these.

- Provide face-to-face support/mentoring and on-the-ground training for PHN facilitators. Facilitators suggested individual PHN support, for example, through the appointment of a PHN liaison officer at the national level. This would help to focus training to PHNs based on the skills and experiences, where their practices are in terms of readiness and tailored to local issues (e.g. nature of population, rurality/ remoteness).
- Improved sharing of resources between PHNs and between practices. Facilitators thought that there could have been better mechanisms to share experiences and resources developed during the implementation. One suggestion was for increased face-to-face meeting opportunities.
- Practice facilitators having access to the various HCH software platforms (e.g. 'sandpit'), in advance of their implementation, so that they can learn to use them and be better equipped to help practices.

Suggestions for additional topics of training for practice facilitators

Practice facilitators identified additional topic areas that they thought were missing from the suite of training products or not given enough emphasis in those products. These included:

- The practice facilitation role.
- Working as a team for practice facilitators ("then we can understand... some of the struggles that [practices] are having with that" PHN 5, interview, R1].
- Practical training, particularly having "*dummy access*" to the RST and other software [PHN 6, interview, R1] or a "*sandpit*" [PHN 10, survey, R1] that facilitators could experiment with before they went into practices to help them with applying the tools.
- Change management taught "in a practical way. Not out of a textbook" [PHN 6, interview, R1].
- How alternatives to face-to-face appointments might work (e.g. texting, teleconferencing, shared medical appointments).
- Motivational interviewing.
- Triaging.
- Building and managing a community of practice.
- Building a health care neighbourhood.

Minimum requirements for shared care planning software

In a document outlining the minimum requirements for shared care planning (Australian Government Department of Health, 2017b), the Department provided a link to the Medical Software Industry Association's website listing vendors that self-declared as meeting the minimum requirements, as well as showing compatibility with the range of practice clinical management systems (Medical Software Industry Association, 2017).

The minimum requirements included a capacity to:

- Create, view and change a shared care plan in real time.
- Create a shared care plan which includes core elements required to coordinate chronic disease care, including:

- target goals and, if appropriate, measurable success criteria for each goal
- activities and timeframes to achieve each goal
- roles and responsibilities of members of the care team in order to help achieve goals
- care plan conditions, i.e., clinical reasons or concerns for the care plan, including comorbidities
- the ability to review the status of a shared care plan.
- Give patients and external healthcare providers access to view the entire shared care
 plan. HCHs will also be able to assign role-based permissions that allow patients and
 external healthcare providers to edit and upload to specific elements of the plan.
 Patients and external healthcare providers should have access to the shared care plan in
 real time via a web portal (optional apps/programs are also appropriate).
- Send patients and providers reminders and notifications regarding follow-up referrals or reviews of specific goals.
- Audit and track the creation and modification of each care plan goal; and review the progress of each goal.
- Track usage, reviews of shared care plans and clinical metrics over time.
- Extract data from existing clinical management systems to produce a shared care plan.
- Secure all information so that the privacy of patients is maintained. Controls allow access to authorised persons only. The creation, deletion and accessing of clinical information and documentation can be tracked to individual users.
- Access vendor support and training for the practice.

(Australian Government Department of Health, 2017b)



Australian Government Department of Health

Evaluation of the Health Care Homes program

Interim evaluation report 2019

Volume 3: Evaluation methods and evaluation progress

Revision history

Version	Date	Modification
0.1	13 December 2019	Initial draft.
0.2	14 February 2020	Minor edits to resolve discrepancies in data reported for different time points.

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Acronyms and initialisms

AAPM	Australian Association of Practice Management
ACCHS	Aboriginal Community Controlled Health Service
AGPAL	Australian General Practice Accreditation Limited
AIHW	Australian Institute of Health and Welfare
CATI	Computer assisted telephone interview
CBDRH	Centre for Big Data Research in Health (University of New South Wales)
CHERE	Centre for Health Economics Research and Evaluation (University of Technology Sydney)
EWG	Evaluation Working Group
EQ-5D-5L	5-level EQ-5D version (quality of life instrument)
FTE	Full time equivalent
GP	General practitioner
HARP	Hospital Admissions Risk Program (tool)
НСН	Health Care Homes
HCH-A	Health Care Homes Assessment (tool)
HPA	Health Policy Analysis
HPOS	Health Professionals Online Services
HREC	Human Research Ethics Committee
IAG	Implementation Advisory Group
IT	Information technology
LHN	Local Hospital Network
MBS	Medical Benefits Schedule
MMM	Modified Monash Model (remoteness categorisation)
NPS	National Prescribing Service
PACIC	Patient Assessment of Chronic Illness Care instrument
PAM	Patient Activation Measure
PBS	Pharmaceutical Benefits Schedule
PHN	Primary Health Network
POLAR	Population Level Analysis and Reporting
PRM	Predictive risk model

- R1 Round 1 of the evaluation. R2, R3, R4, R5 refer to rounds 2-5 respectively.
- RST Risk stratification tool
- SURE Secure Unified Research Environment

Introduction

The Health Care Homes (HCH) trial is being evaluated by a consortium led by Health Policy Analysis. The consortium includes the Centre for Big Data Research in Health (University of New South Wales), the Centre for Health Economics Research and Evaluation (University of Technology Sydney) and other Australian and international experts. The researchers are listed in Appendix 1.

This document is the **Interim evaluation report 2019**, **Volume 3: Evaluation progress**. It is one of four volumes featuring the findings of the evaluation of the HCH trial up to 31 August 2019¹. The volumes are described in Table 1.

Volume	Description				
Volume 1: Summary report	Summarises the findings of the interim evaluation.				
Volume 2: Main report	Presents the findings from the interim evaluation.				
Volume 3: Evaluation progress	Describes progress for the evaluation to September 2019, including progress with acquiring evaluation data and approaches for analysing qualitative and quantitative data.				
Volume 4: Evaluation data supplement	Includes supplementary data to support the findings reported in Volume 2.				

Table 1 – Interim evaluation report 2019: Description of volumes

A detailed description of the evaluation methods is in the HCH Evaluation plan (Health Policy Analysis, 2019). Briefly, the evaluation is seeking to answer the following key questions:

- 1. How was the HCH model implemented and what were the barriers and enablers?
- 2. How does the HCH model change the way practices approach chronic disease management?
- 3. Do patients enrolled in HCH experience better quality care?
- 4. What are the financial effects of the HCH model on governments, providers and individuals?

Additional key questions relating to the community pharmacy component are:

- 5. Is the community pharmacy component beneficial to the broader HCH coordinated care model and should it be included as part of any future roll out?
- 6. Do patients who received medication management services as part of the HCH trial experience better health outcomes than patients who did not?
- 7. What was the level of engagement between HCH practices and community pharmacy (care coordination)?
- 8. Is the inclusion of a pharmacy component in HCH financially viable?

These questions have many dimensions. Therefore, more detailed questions have been developed for each key question. The detailed questions are listed in Appendix 3 of this volume.

The evaluation is using mixed methods. Data sources are described in Table 4. Qualitative data are being collected through interviews and focus groups with patients and patient's

¹ This is the latest date for which findings are reported. Some data end earlier.

carers/ families, GPs, other primary care staff, pharmacists and others. The interviews and focus groups are being undertaken in 20 locations across Australia. Quantitative data are also being used to investigate how things have changed for patients enrolled in HCH (using before/after and interrupted time series analysis) and to compare patients enrolled in HCH with similar patients receiving usual care (quasi-experimental analysis). These are also described in Table 4.

For practical purposes, data collection for the evaluation is organised into 'rounds'. The time frames for these are shown in Table 2. The patient survey was organised into 'waves'. The time frames for the waves are shown in Table 3.

Table 2 Bala concentritorias for the evaluation and time traines					
Data collection round	Time frame				
Round 1 (R1) data collection	1 October 2017 to 30 June 2018				
Round 2 (R2) data collection	1 July to 31 December 2018				
Round 3 (R3) data collection	1 January to 30 June 2019				
Round 4 (R4) data collection	1 July 2019 to 30 June 2020				
Round 5 (R5) data collection	1 July 2020 to 30 June 2021				

Table 2 – Data collection rounds for the evaluation and time frames

able 3 – Patien	t survey	'waves'	and	time	frames
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Wave	Time frame
Wave 1	December 2017 to March 2019
Wave 2	December 2019 to March 2020
Wave 3	December 2020 to March 2021

	Kev	Collection	Report in v data co	Chapter in which			
Data source	questions	type	Interim 2019	Interim 2020	Final report 2021	data are presented in Vol. 4	
Patient surveys	3	Primary	Wave 1	Wave 2	Wave 1, 2 and 3	4	
Practice surveys	1, 2, 4	Primary	R1 R2	R1 R2 R4	R1 R2 R4 R5	2	
Practice staff surveys	1, 2, 4	Primary	R1 R2	R1 R2 R4	R1 R2 R4 R5	2	
PHN surveys	1, 2, 4	Primary	R1 R2	R1 R2 R4	R1 R2 R4 R5	3	
PHN interviews	1, 2, 4	Primary	R1 R2	R1 R2 R4	R1 R2 R4 R5	NA	
Case studies ¹	2, 4	Primary	R2	R1 R2 R4	R1 R2 R4 R5	NA	
HCH program data ²	1, 4	Secondary	Oct 2017- Aug 2019	Oct 2017- Jun 2020	Oct 2017- Jun 2021	NA	
Community Pharmacy in HCH	5, 6, 7, 8	Secondary	July 2018- June 2019	July 2018- June 2020	July 2018- June 2021	7	
Risk stratification	2	Secondary	July 2018- June 2019	July 2018- June 2020	July 2018- June 2021	6	
Practice extracts	2, 3	Secondary	Various- June 2019	Various - June 2020	Various - June 2021	5	
Linked data ³	3, 4	Secondary	NA	Jul 2015 – June 2019	Jul 2015 – June 2021	NA	

Table 4 – Evaluation data sources

¹Case studies include patient interviews/ focus groups, practice interviews, related provider interviews (e.g. pharmacists, allied health), PHN interviews, LHN/ state & territory health authority interviews; ²Includes, amongst other issues, data on registrations, utilisation of training modules; ³Includes MBS, PBS, hospital, emergency department, aged care, and fact of death data.

Structure of this report

This volume is structured as follows:

- Chapter 2 describes progress with the implementation of evaluation infrastructure including research ethics.
- Chapter 3 describes progress with each of the evaluation data sources.
- Chapter 4 describes the benchmark reports developed by the evaluation team. These reports have been provided to HCH practices and Primary Health Networks (PHNs).
- Chapter 5 summarises the progress on the evaluation.

Evaluation infrastructure

This Chapter describes the evaluation infrastructure, including research ethics.

HCH evaluation plan

Health Policy Analysis developed an initial evaluation plan in January 2017. This was refined following consultation with stakeholders and working closely with the Evaluation Working Group (EWG). The list of stakeholders consulted in the development of the plan is at Appendix 2. The Implementation Advisory Group (IAG) endorsed the plan in December 2017. Minor refinements continued to be made until March 2018.

The evaluation plan was disseminated both through the Department of Health's website (http://www.health.gov.au/internet/main/publishing.nsf/Content/health-care-homesinformation) and Health Policy Analysis' HCH evaluation website (https://hchevaluation.com/).

The plan was revised in 2019 to incorporate the Community Pharmacy in HCH initiative and the extension of HCH through to June 2021. The updated plan was approved by the ACT Human Research Ethics Committee (HREC) in October 2019.

Evaluation resources and website

Resources were developed for practices to understand the data that they would need to provide for the evaluation. These were disseminated online via a site built specifically for the evaluation (<u>https://hchevaluation.com/</u>). In addition to the Evaluation plan, an 'Evaluation guide' and 'Quick guide' were developed (and later updated when the HCH trial was extended).

In addition, a 'HCH-A staff consensus tool' was developed. This is a Microsoft Excel tool that helped practices compile assessments from individual staff members towards completing the Health Care Home Assessment (HCH-A). HCH-A was initially used by practices to assess the extent to which they were operating as an HCH and to identify and prioritise changes that they would make as an HCH. Later it will be used for sites to measure their progress. HCH-A was part of the training materials provided to practices for the HCH trial, and is part of the practice survey for the evaluation (see Practice surveys, p. 9). A 'Quick guide' to the tool and instructional video were also developed and included on the site.

The evaluation website is also the portal to an 'online evaluation app' that has allowed practices to:

• Record basic information about enrolled patients: name, address, age, sex, risk tier, telephone and email. This information was used to invite patients to participate in surveys and interviews/ focus groups. For patients that opted out of the primary data

collection, practices recorded basic demographic information but no contact details.

- Provide secure links to surveys.
- Receive benchmark reports tailored to the practice.

A 'Quick guide' and an instructional video was developed describing the app.

PHNs also had access to the online evaluation app to complete the PHN survey and to receive PHN-level benchmark reports.

The instructional videos on the evaluation website were from webinars that Health Policy Analysis delivered to practice facilitators through Australian General Practice Accreditation Limited's (AGPAL's) training platform.

Research ethics

The Department of Health Ethics Committee (DEC) approved the evaluation of HCH (excluding the components related to linked data and the case studies in the NT Aboriginal Community Controlled Health Services – ACCHS) in September 2017.

In August 2018 the DEC wrapped up its operations and ethical oversight for the project was transferred to the ACT Health HREC.

The ACT Health HREC later approved amendments to incorporate the evaluation of the Community Pharmacy in HCH Trial Program (June 2019) and to extend the evaluation as a result of the extension of the HCH trial (October 2019).

The Australian Institute of Health and Welfare (AIHW) HREC approved data linkage for the evaluation in March 2018. The application was for the creation of a de-identified linked data set (the 'Bilaterals data set') to support initiatives under the Bilateral Agreements as well as for the evaluation of HCH. Data sets to be linked are: Medicare Benefits Schedule (MBS); Pharmaceutical Benefits Schedule (PBS); National hospital morbidity data – hospital separations; National non-admitted patient emergency department care data – emergency department presentations; National aged care data – residential aged care admissions, community aged care packages and Fact of death data (from the National Death Index).

Case studies of two ACCHS were approved by the Central Australian HREC and the Menzies School of Health Research HREC (July and September 2019 respectively).

Data security

A key risk of the evaluation that was identified upfront was data security. To address this, the Department of Health and Health Policy Analysis agreed to store the secondary data obtained for the evaluation (i.e. practice extracts, linked data, HCH program data) in the Secure Unified Research Environment (SURE) administered by the SAX institute. SURE is a remote-access computing environment. It is accessible over encrypted Internet and AARNet connections, replacing the need for investigators to use their local computing environment.

Maintaining the security of the data compiled for the evaluation: the Secure Unified Research Environment (SURE)

SURE aims to protect the privacy and confidentiality of data. System protocols require that:

- All files moved in and out of SURE go through a portal called the Curated Gateway, which involves review for compliance with ethics committee approval and data custodian requirements by a member of the SURE operations team.
- Within SURE, a user cannot access the internet or email, there is no print function, and no ability to copy data to removable media.
- Outbound files uploaded to the Curated Gateway for use outside SURE are reviewed by the study's chief investigator or their nominated representative.
- All files that pass through the Curated Gateway are logged and may be subject to audit by the Sax Institute.

Progress with evaluation data

Practice surveys

Surveys of HCH practices were conducted in Round 1 and Round 2. Further surveys will be conducted in Round 4 (late 2019) and Round 5 (late 2020). The surveys aim to capture:

- baseline information about the practice
- key features of the practice relevant to HCH approach
- the capabilities of the practice prior to joining the program (e.g. participation in other chronic disease management and related initiatives)
- changes implemented as a result of participation in HCH
- practice experience of and feedback on HCH
- practice perspectives on the effectiveness of HCH.

The questions included in each survey are in Appendix C of the Evaluation plan. The surveys are administered online using the Qualtrics application, through the evaluation app (see Chapter 2 Evaluation infrastructure). To accompany the survey in Round 1, Health Policy Analysis developed a Microsoft Excel tool that practices could use to compile assessments from individual staff members towards the HCH-A. The intention was for practices to use the tool as a basis for discussing individual staff members' scoring and achieving a consensus response for the practice.

The practice survey was introduced to practices (along with other evaluation requirements, including the practice staff survey) through a letter from Health Policy Analysis issued in January 2018. The HCH-A tool was also covered in the training modules, and an instructional video was developed.

Health Policy Analysis worked with the PHNs to provide logins to the evaluation website to all practices, to enable them to complete the whole-of-practice survey and the individual staff surveys.

For practices that were participating at 31 August 2019, the response rates were 91.6% for Round 1 Part A (120 responses), 90.1% for Round 1 Part B (118 responses) and 70.2% for Round 2 (92 responses). Including practices that withdrew: 171 practices completed surveys for Round 1 Part A, 147 for Round 1 Part B and 92 Round 2. Further details of response rates are in Volume 4 (Chapter 2).

Practice staff survey

The experience component of the practice staff survey is based on the Medical Home Care Coordination Survey (Zlateva et al., 2015). In addition, the survey aims to measure individual practice staff's assessment of where their practice is at on key features of HCH. This information is being used to moderate the self-assessment submitted by practices. Staff

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surveys were initially conducted in Round 1. They will be repeated in Round 5. Five hundred and twenty nine staff responded in Round 1, of which 425 were in practices that were continuing to participate in HCH at 31 August 2019.

PHN surveys

These surveys are collecting information on PHNs' roles in facilitating practices in the transformation to HCH as well as their perspectives on various aspects of implementation (e.g. governance, training, RST). In Round 2, practice facilitators were also asked to score each practice on the high-level dimensions of the HCH-A as an additional moderator of the self-assessment by practices.

PHNs will be surveyed again in Round 4 and Round 5.

Patient surveys

The patient survey aims to obtain perspectives on patients' relationship with their HCH, addressing the key evaluation question: "Do patients enrolled in HCH experience better quality care". The more detailed questions it seeks to answer are:

- Did patients enrolled in the HCH program have improved access to primary care services, including alternates to face-to-face contacts?
- 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?
- 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?
- Did patients enrolled in HCH report improved experiences of primary care, including coordination of their care and communication with their primary care providers?

The survey also incorporated items from the following instruments:

- Patient Assessment of Chronic Illness Care (13-item version) (Gibbons et al., 2017)
- Patient Activation Measure (PAM) (13-item version) (Hibbard, Mahoney, Stockard, & Tusler, 2005)
- EQ-5D-5L (Herdman et al., 2011)
- Consumer Assessment of Healthcare Providers and Systems (CAHPS) Clinician and Group adult survey (CG-CAHPS) (Agency for Healthcare Research and Quality, 2015) – selected items only
- Care Coordination Quality Measure for Primary Care (CCQM-PC) (Agency for Healthcare Research and Quality, 2016) selected items only.

PAM and EQ-5D-5L are proprietary tools for which Health Policy Analysis has obtained licenses for the HCH evaluation. The survey is in Appendix F of the Evaluation plan.

The survey was translated into five languages: Arabic, Italian, Greek, Chinese and Tamil. The first four languages were chosen as they are the most common in Australia according to Australian Bureau of Statistics data as well as advice from a culturally and linguistically diverse public relations specialist. Tamil was nominated by one of the PHNs due to a particular cluster of Tamil speakers in its region. These five languages were the same as those into which the patient information and consent form was translated.

To preserve the psychometric properties of the tools, Health Policy Analysis obtained official translations of tools where available (e.g. PACIC, EQ-5D-5L). For others, a translation service was used.

Only patients aged 18 years and over were invited to be surveyed. This is because additional ethical and legal issues apply to children, and the costs of addressing these were estimated to be greater than the benefits for the evaluation, as children were expected to be a small proportion of HCH enrolees. Patients of the NT ACCHS were not surveyed (see 'Case studies' below).

Health Policy Analysis subcontracted The Social Research Centre (a business unit of the Australian National University) to administer the surveys via a computer assisted telephone interview (CATI).

The patient surveys are being conducted in three waves. The time frames for these were outlined in Table 3. In Wave 1, patients were approached to complete a survey around four to six weeks following enrolment. In Wave 2, patients surveyed during Wave 1 will be followed up. Wave 2 will also include an additional cohort of patients not surveyed in the first round. The additional cohort will target patients referred to community pharmacy as part of the HCH trial. Wave 3 will follow up patients interviewed in the previous rounds.

The targets were to interview 2,000 patients in wave 1 and 2,500 in waves 2 and 3. In the Wave 1, 2,018 interviews were completed out of 3,125 randomly selected patients (crude response rate of 64.6%). Further details of the methods and results from the patient survey are in Volume 4.

Practice extracts

Practice extracts were identified as a key requirement for the evaluation by the IAG and EWG. Several options were explored for how these extracts could be supplied. Criteria that were used to decide on the approach included:

- Leveraging existing arrangements for data sharing with PHNs or other organisations. This was important so as not to introduce new processes for practices, and to use existing licences for data extraction where available so as not to add cost.
- Creating infrastructure/ processes beyond the evaluation.
- Selecting an approach that is compatible with most of clinical management systems used by practices.

The Department of Health and Health Policy Analysis collaborated on a survey of PHNs to explore the extent to which the practices were already sharing data with their PHN. This was administered in early 2017. The finding was that most were, and that the PHNs were covering the licensing costs for the extraction software. Also, nine out of the 10 PHNs were using PEN CS software for the extracts. South East Melbourne PHN uses the Population Level Analysis and Reporting (POLAR) tool. Therefore, these processes were leveraged for the evaluation. The approach also meant maintaining the close involvement of the PHNs and creating infrastructure for data sharing between practices and PHNs beyond the evaluation.

An alternative option was for the data to be provided by NPS MedicineWise, as approximately 600 practices were participating in NPSs' MedicineInsight Program (a quality improvement program). After exploration, it was found that about 25 practices participating in MedicineInsight were also participating in HCH. Therefore, the Department negotiated with NPS to instead use its data to draw comparator practices for the evaluation. Comparator practices will be drawn based on the sampling frame established for the HCH trial, which includes practice size, type and location.

Flagging of HCH patients in the practice extracts

Since the practice extracts were to relate to all patients – not just HCH enrolees – and practice data were not to be linked with any other data source, a mechanism was needed to flag HCH patients in practices' clinical management systems and record their tier for the extraction software to pick up this information. Due to the disparate clinical management software used by practices, the Department engaged the Australian Association of Practice Management (AAPM) to develop a consistent approach for each of the major systems. However, it became apparent that in most systems, the place available to record this information (i.e. mostly free-text commentary fields) could not be used without additional work. Alternatives were explored, and the best option was for practices to create the flags in the extraction software. For practices using the PEN software, this was in the CAT4 or Topbar tools. The POLAR vendor Outcome Health created a similar mechanism. Some vendors of clinical management systems elected to build a mechanism directly into the software.

Capturing information on services provided to HCH patients

A key objective of the evaluation is to assess the financial impact of the HCH model on governments, providers and patients. To assess the impact on practices, ideally, the revenue that the practice receives for each enrolee under the bundled payment would be compared with the fee-for-service amount that they would have received. However, with practices not submitting claims for individual MBS items, this is not available to the evaluation. Also, some stakeholders thought that this type of recording maintains a 'fee-for-service' mentality, which HCH is aiming to move away from.

Therefore, where practices are using the approach suggested by AAPM for recording data for revenue sharing and where the data are in fields in the practice clinical management systems that would come through the extracts being provided for the evaluation, then Health Policy Analysis will request these data. If not, Health Policy Analysis will request data from each practice on services/ activities recorded for a small sample of patients. This approach is also being used to ensure that the measures derived from practice data extracts are accurate. Health Policy Analysis is planning to provide the data obtained from practices and derive measures for a sample of HCH patients back to each practice. Practices will be invited to review the data and identify corrections where these are necessary and re-submit the data to the evaluation team.

Case studies

The case studies will provide a more comprehensive view of the implementation of HCH, including how the program interacted with other initiatives that the practice/ region might have been involved in.

The case studies involve visits to selected locations within each of the 10 participating PHNs, studying two practices in each location. The following groups are being interviewed:

- Patients and their carers and family, and where appropriate, community members (involving enrolees of the practices being interviewed).
- Staff of the selected practices, speaking on behalf of the practice as well as the individual perspectives of GPs, nurses, allied health professionals and technical and administrative staff employed by the practice.
- External allied health and other service providers that the practices being interviewed refer patients to.
- PHN representatives.
- Local Hospital Network (LHN) and state/territory health authority representatives (associated with all 10 PHNs).

Practices included in the case studies were selected to maximise diversity across the dimensions of the sampling frame established for the HCH trial (which include practice size, location and type). PHNs reviewed the practices selected by Health Policy Analysis, and in some cases suggested alternatives to better fit the strata features. Practices that withdraw from HCH in subsequent interview rounds will be replaced by an alternative from within the PHN.

The first round of visits was between September and October 2018. A second round will occur in late 2019/early 2020, and the third in early 2021.

Incentive payments for participation include:

- Patients and their carers/ family a \$30 gift voucher for participation in an interview or focus group.
- Practices \$1,000 per round.
- Allied health and other related providers \$160 for participation in a one-hour interview or focus group.

Table 5 summarises details of interviews conducted for the case studies in Round 2, which were mostly conducted between September and October 2018.

Informants interviewed or participating in focus group	Round 2
Practices interviewed	
Active at 31 August 2019	14
Withdrawn at 31 August 2019	4
Total	18
Practice staff interviewed	
GPs	24
Nurses	13
Practice managers	14
Receptionist	6
Other	8
Total	65
Patients and carers	·
Patients	42
Carers	4
Total	44

Table 5 – HCH evaluation case studies: Interviews for Round 2

Linked data

The Commonwealth and state and territory governments have entered into *Bilateral Agreements on Coordinated Care*, which set out reforms to improve patient health outcomes and reduce avoidable demand for health services. HCH is a key Commonwealth activity under these Agreements. The Commonwealth and jurisdictions also agreed to share data and develop a linked data set to contribute to the evidence base for improving primary care, including through the evaluation of initiatives set out in the Bilateral Agreements, such as HCH.

The Department of Health commissioned the AIHW to create the Bilaterals data set linking MBS, PBS, hospital (emergency attendances and admissions) fact of death and aged care data. Following ethics approval, the evaluation team worked with the Department of Health and the AIHW to agree on the number of non-HCH patients for which data would be obtained, from which to draw comparator patients. A sample of 100,000 patients from each PHN was settled on as the minimum required to evaluate HCH.

A propensity scoring approach will be used to match HCH enrolees with comparators. One of the challenges is stratifying HCH enrolees and comparators into risk groups. To do this, Health Policy Analysis obtained a license from Johns Hopkins University for the Adjusted Clinical Group® (ACG®) system.

An issue for the evaluation is that limited follow-up data may be available for the final report of the evaluation. Table 6 shows the current timeline of when these data will be available. Options are being explored to reduce the time lag for linked data to be available.

Expected date of data drop	HCH patients	MBS/PBS data²	Hospital data ²	Aged care ²	National Death Index ²
October 2019	Enrolled to 30	July 2015 -	July 2015 -	July 2015 - June	July 2015 - June
	June 2019 ¹	June 2017	June 2017	2017	2018
Mid-2020	Enrolled to 30	July 2017 -	July 2017 -	July 2017 - June	July 2017 - June
	June 2019 ¹	June 2019	June 2019	2019	2019
Mid-2021 ³	Enrolled to 30	July 2019 -	July 2019 -	July 2019 - Dec	July 2019 - Dec
	June 2019 ¹	Dec 2021	Dec 2021	2021	2021

Table 6 – Plan for linked data being available for the evaluation

¹ This will be for all patients enrolled in HCH. ² Each subsequent data drop incorporates data in scope of previous drop in case of any updates. ³ The third data drop is yet to be negotiated.

MBS quarterly extracts

It was initially planned for the evaluation to have access to quarterly extracts of MBS and PBS data for enrolled HCH patients and comparator patients. Although this information was to be available in the linked data, the time lag in receiving the linked data was one of the considerations in requesting it separately. This decision to request it was revisited following further information on the HCH program data that would be provided for the evaluation, which contains some MBS data for HCH enrolees. One of the arguments around timelines was to include some of these data in the benchmarking reports to be provided to practices and PHNs (see below). However, it was decided subsequently that the benchmarking reports

would be based on the practice extracts (drawing some comparisons with the HCH program data). Therefore, the quarterly MBS and PBS extracts were not pursued.

HCH program data

The Department of Health maintains a database of participating practices that includes geographic location, type of practice (i.e. independent, corporately owned, or ACCHS), information technology (IT) systems used, and other characteristics to assess eligibility for the program. These data been provided for the evaluation.

The Department of Health also negotiated with the Department of Human Services to receive the following data related to the administration of HCH:

- Summary of enrolments by practice and risk tier. These data are derived from the HCH registrations in the Health Professional Online Services (HPOS) system.
- Claims made by enrolled patients separate to the bundled payment from HCH and non-HCH practices (by MBS Item No.).
- MBS claims by practices for HCH enrolees.
- Demographic and socio-economic characteristics of enrolled patients (HCH start and end dates, age, sex, SEIFA, concession card status, risk tier over time).

These data are being used for the evaluation.

Risk stratification data

The RST generates a de-identified data set to be used for refining the tool containing the following variables:

- creation date
- expiry date
- patient hash (anonymous ID)
- organisation ID (practice ID)
- risk stratification score (score generated by PRM)
- HARP score
- HCH risk tier
- reason (if not determined 'at risk').

These data have been made available for the evaluation.

Practice exit interviews/ surveys

Practices' reasons from withdrawing from HCH provide valuable insights. For practices withdrawing prior to 1 December 2017, Health Policy Analysis analysed email exchanges between the practice and the Department of Health of reasons for withdrawal. For practices withdrawing subsequently, Health Policy Analysis created a short open-ended survey exploring the reasons for withdrawal and conducted interviews with practices. In August 2018, the survey was implemented online. The Department provided a link to practices withdrawing from HCH. Where practices agree to it, Health Policy Analysis has interviewed them to ask about their reasons for withdrawing.

Training uptake and evaluation

AGPAL collected statistics on the individuals and practices accessing the online learning modules, including how many modules were started and completed, and before-and-after knowledge. AGPAL also evaluated the workshops and coaching webinars. AGPAL compiled a report which it made available for the evaluation.

Other information sources for the evaluation

The Department of Health and Health Policy Analysis meet regularly (approximately every three weeks) to manage the evaluation. The meetings are minuted and these records have been used towards the descriptions of the implementation in this report, and will continue to be a source of information for the evaluation.

Health Policy Analysis also interviewed Department staff in October 2017 to obtain information in relation to specific aspects of the implementation, such as the RST and the practice recruitment process. The interviews were recorded and transcribed, and also used towards the evaluation.

Benchmark reports

This Chapter describes the benchmark reports that have been provided to HCH practices and PHNs.

Aims

The benchmark reports were initially proposed by the EWG as a way of giving something back to the practices for supplying practice data extracts for the HCH evaluation. They were also aimed at helping practices identify areas for improvement in their data, such as the completeness and quality of data collected.

The practice and PHN benchmark provide the following information to practices:

- An assessment of completeness of practice data, including the recording of HCH enrolled patients.
- An indication of quality of care processes, that is, whether the practices have recorded key health measures (e.g. smoking status, body height, body weight) and timeliness of patient examinations and tests (e.g. blood pressure, pulse, lipids, kidney function, HbA1c).
- An understanding of the profile of HCH patients, such as the distribution of patient age, sex, risk tier, diagnoses, and recording of key health measures in the practice (or in the PHN) in comparison to HCH patients in other practices (or other PHNs).

Contents

A sample practice benchmark report is at Appendix 4. The reports have three sections:

- a summary of background information (e.g. purpose and data sources used) and key findings
- a profile of HCH patients based on Health Professionals Online Services (HPOS) registration data (i.e. the Medicare web-based portal)
- a profile of HCH patients based on the practice data extracts.

In each report, data are presented for HCH patients in the practice, HCH patients in similar practices (i.e. practices of similar size and geographic remoteness), and HCH patients in all other HCH practices. The practice size is based on the number of full-time equivalent (FTE) GPs working in the practice (excluding GP advanced trainees/registrars), while practice remoteness uses the Monash Modified Model (MMM) categories.

In the PHN report, data are presented for practices in the PHN and all other PHNs combined.

Data from HPOS include patient demographic characteristics (age, sex) and enrolment characteristics (date of patient enrolment and risk tier). The number of HCH patients, timing of patient enrolment and risk tier identified in practice data extracts are compared with HPOS data. This informs the practice whether HCH patients have been accurately flagged in their local systems.

For HCH patients identified in the practice extracts, further information is presented, including:

- recording of patient clinical assessments (e.g. smoking status, height, weight)
- patient measurements (e.g. blood pressure, cholesterol, HbA1c)
- presence of various patient health conditions.

Prior to the initial set of reports, PHNs were consulted on their design. The practice and PHN surveys and interviews for rounds 4 and 5 will also include questions about the contents, structure and utility of the reports.

Delivery

Practice and PHN benchmark reports have been distributed to practices and PHN twice, in March 2019 and September 2019 (Table 7). The first round of the reports was for the period February 2018 to December 2018. They were provided to 94 HCH practices and nine PHNs. Where practices or PHNs did not receive the reports, it was because they did not supply the practice extracts or had too few enrolments for the report to be meaningful. The second round of the reports was for the period February 2018 to June 2019. They were provided to 132 HCH practices (including 12 ACCHS) participating in HCH as at 31 July 2019 and the 10 PHNs.

Table 7 – Dissemination of practice and PHN benchmark reports in 2019

Month and year of distribution	Number of practice reports	Number of PHN reports	
March 2019	94	9	
September 2019	132 [†]	10	

⁺ Practices participating in HCH as at 31 July 2019.

Summary of evaluation progress

Table 8 summarises the progress of obtaining data for the evaluation up 31 August 2019.

Table 8 – Evaluation progress, by data source

Key:	C - Complete IP – In progress TC – To commence No planned activity in the round								
Data source					Evaluation round				d1
							3	4	5
Patient surveys: Wave 1 started in December 2017 and was completed in March 2019.						C		TC	TC
There we	re 2,018 completed	l surveys with a raw resp	ponse rate of 64.6%.						
Practice s	s urveys: Round 1 su	rveys completed (Part	A: 171 responses in tota	II, with 120 from					
practices continuing in the program. Part B: 118 responses from practices continuing in								TC	TC
the progr	am). The Round 2 s	urveys completed with	105 responses (92 from	practices					
Continuin	g in the program).								
	staff responded fro	an surveys were comple	eled belween March a	na Augusi					
2010. 529	sian responded inc	21 receptionists and 12	Pincipalea Tou GFS, T25		С				TC
from staff	of practicos contir	ning in the UCU trial	o practices managers.	423 SUIVEYS CIE					
Practice	vit interviews/surv	ave: Methods for condu	icting exit interviews an						
changed	over time By Sent	ember 2018 interviews	had been conducted y	with eight					
individua	ls covering 17 prac	tices (some individuals	spoke on behalf of mult	tinle					
practices) Written reasons fo	or withdrawal were pro	vided by three other pr	actices These	С	С	С	TC	TC
responses	s have been incorp	orated into this report.	An online exit survey is r	now being					
used, alth	ouah responses to	this have been low (7 g	oractices).						
PHN surve	ev: Round 1 surveys	were completed in Au	aust 2018 (all 10 PHNs re	esponded).	С			TC	TC
PHN inter	views: Round 1 inte	rviews occurred betwe	en January and June 2	.018. Round 2					
interviews	occurred betwee	n November and Dece	, ember 2018. Round 4 int	erviews started	с	с		с	TC
in July 20	19 (and continued	through to October 20	19).						
Case stud	dies: Round 2 patie	nt and carer/ family int	erviews/ focus groups c	and practice					
interview	s were undertaken	between September a	Ind October 2018, with [•]	the exception		~		ID	TC
of ACCH	S in the NT. Ethics a	pproval has now been	obtained for the case s	studies of the				IF	
NT ACCH	S and interviews ho	ave just commenced.							
Practice of	data extracts: Arrar	ngements have been fi	nalised with practices u	sing Pen CS					
and Pola	GP, the corporate	groups and NT ACCHS	S. Data for comparator	practices is					
from NPS.	Ongoing data ext	racts are being receive	ed from Pen CS, Polar G	P practices	С	С	С	IP	TC
and NT A	CCHS. A once-off e	extract has been obtair	ned from one of the cor	rporate groups					
and arrar	nged with another.	NPS has supplied two e	extracts.						
HCH prog	ram data: Weekly i	reports on HCH enrolme	ent numbers have beer	n provided to					
the evalu	ators. Approval to	access the more detail	ed specified data was	obtained in		С	С	IP	TC
October 2018, and data to 30 June 2019 has been supplied.									
Linked data. Three rounds of data will be supplied. An initial round is scheduled for								IP	TC
October 2019, a second mid-2020 and a final supply in mid-2021.									
Other dat	a sources: De-iden	titled risk stratification c	ata from Precedence,	and data on		С		С	TC
participation and evaluation of training activities collected by AGPAL. These data have									
orq neeq	viaea and incorpo	ratea into this report.							

'See Table 2, p. 4.

References

- Agency for Healthcare Research and Quality. (2015). CAHPS® Clinician & Group Survey: Overview of the Questionnaires: AHRQ.
- Agency for Healthcare Research and Quality. (2016). Care Coordination Quality Measure for Primary Care (CCQM-PC). Retrieved 1 February 2017, from <u>https://www.ahrq.gov/professionals/prevention-chronic-</u> <u>care/improve/coordination/ccqmpc/index.html</u>
- AGPAL. (2018). Interim Project Progress Report for Health Policy Analysis September 2018. Brisbane: AGPAL
- Anderson, G. F., Ballreich, J., Bleich, S., Boyd, C., DuGoff, E., Leff, B., et al. (2015). Attributes common to programs that successfully treat high-need, high-cost individuals. *Am J Manag Care*, 21(11), e597-600
- Australian Association of Practice Management. (2017a). Health Care Home Activity Monitoring Guide October 2017. Melbourne: AAPM.
- Australian Association of Practice Management. (2017b). Webinar: AAPM Health Care Homes Activity Monitoring Guide. Retrieved 13 September, 2018, from https://www.aapm.org.au/Knowledge-Hub/Healthcare-Homes
- Australian Government Department of Finance. (2014). Commonwealth Grants Rules and Guidelines.

Australian Government Department of Health. (2016a). Factsheet: Patient eligibility

Australian Government Department of Health. (2016b). Factsheet: Stage one modelling Australian Government Department of Health. (2016c). Health Care Homes announcement

media release [Press release]. Retrieved from

http://pandora.nla.gov.au/pan/154649/20160508-

0839/www.pm.gov.au/media/2016-03-31/healthier-medicare-chronically-illpatients.html

- Australian Government Department of Health. (2016d). Health Care Homes Grant Guidelines 4 November 2016
- Australian Government Department of Health. (2016e). Health Care Homes information booklet
- Australian Government Department of Health. (2017a). Health Care Homes Handbook for general practices and Aboriginal Community Controlled Health Services Version 1.2 December 2017
- Australian Government Department of Health. (2017b). Health Care Homes Patient Information Statement
- Australian Government Department of Health. (2017c). Minimum requirements of shared care plans
- Australian Government Department of Health. (2018a). Enrolment of patients is now underway from http://createsend.com/t/r-F3382E21D97069B52540EF23F30FEDED
- Australian Government Department of Health. (2018b). First Health Care Homes consultation: An enrolment checklist for clinicians March 2018.
- Australian Government Department of Health. (2018c). Health Care Home Funding Assurance Toolkit March 2018. Canberra.
- Australian Government Department of Health. (2018d). Health Care Homes Clinical Reference Group Q&As.
- Australian Government Department of Health. (2018e). Health Care Homes Handbook for general practices and Aboriginal Community Controlled Health Services Version 1.3 January 2018
- Australian Government Department of Health. (2018f). Health Care Homes Handbook for general practices and Aboriginal Community Controlled Health Services Version 1.4 August 2018
- Australian Government Department of Health. (2018g). Patient Enrolment key messages (March 2018).

Australian Government Department of Health. (2018h). SA information session draws 180 patients from <u>http://createsend.com/t/r-1121D8909176A6332540EF23F30FEDED</u>

Australian Taxation Office. (2017). Health practitioners and medical practices - the Health Care Home approach. Retrieved 13 September, 2018, from

https://www.ato.gov.au/law/view/document?DocID=AFS/HealthCareHome

- 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. Ann Fam Med, 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
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). Internet, Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Method (4th ed.). Hoboken, New Jersey: Wiley.
- 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), *6*1
- HARP. (2009). Summary: HARP risk calculator. Retrieved 10 September, 2018, from <u>http://www.google.com.au/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja</u> <u>&uact=8&ved=0CB0QFjAA&url=http%3A%2F%2Fwww.adma.org.au%2Fclearinghouse</u> <u>%2Fdoc_download%2F13-rationale-for-western-risk-</u> <u>calculator.html&ei=7_8HVIG7D4KVuATs54LgAw&usg=AFQjCNExOILbjlxul2Xb1FnCYEG6</u> Fr91xg&bvm=bv.74649129,d.c2E
- Health Policy Analysis. (2017). Evaluation of the Health Care Homes program Evaluation plan. Canberra: Department of Health.
- Herdman, M., Gudex, C., Lloyd, A., Janssen, M., Kind, P., Parkin, D., et al. (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
- Hippisley-Cox, J., & Coupland, C. (2013). Predicting risk of emergency admission to hospital using primary care data: derivation and validation of QAdmissions score. *BMJ Open*, 3(8), e003482
- Janamian, T., Jackson, C. L., Glasson, N., & Nicholson, C. (2014). A systematic review of the challenges to implementation of the patient-centred medical home: lessons for Australia. *Med J Aust*, 201 (3 Suppl), S69-73
- Kahn, K., Timbie, J., Friedberg, M., Lavelle, T., Mendel, P., Ashwood, J., et al. (2015). Evaluation of Centers for Medicare and Medicaid Services federally qualified health centres advanced primary care practices Demonstration - Second Annual Report. In P. f. t. C. f. M. M. Services (Series Ed.) R. Corp. (Ed.)
- Kahn, K., Timbie, J., Friedberg, M., Mendel, P., Hiatt, L., Chen, E. K., et al. (2016). Evaluation of Centers for Medicare and Medicaid Services federally qualified health centres advanced primary care practices Demonstration - Final Report. In P. f. t. C. f. M. M. Services (Series Ed.) R. Corp. (Ed.)
- KPMG. (2017). Payments under the Health Care Home program: Application of Employment Taxes.
- MacColl Center for Health Care Innovation at Group Health Research Institute, Qualis Health, WentWest, & AGPAL. (2017). Health Care Home Assessment. Brisbane.
- Medical Software Industry Association. (2017). Healthcare homes. Retrieved 20 September 2018, from https://www.msia.com.au/healthcare-homes/
- Pearse, J., & Mazevska, D. (2018). The Patient Centered Medical Home: barriers and enablers: an Evidence Check rapid review brokered by the Sax Institute for COORDINARE. Sydney: Sax Institute.
- Precedence Health Care. (2017). Health Care Home Risk Stratification Tool Training.
- Primary Health Care Advisory Group (Ed.). (2015). Better Outcomes for People with Chronic and Complex Health Conditions: Final Report: Department of Health.
- Ramaswamy, V., & Ozcan, K. (2014). The Co-Creation Paradigm: Stanford Business Books.

Zlateva, I., Anderson, D., Coman, E., Khatri, K., Tian, T., & Fifield, J. (2015). Development and validation of the Medical Home Care Coordination Survey for assessing care coordination in the primary care setting from the patient and provider perspectives. BMC Health Serv Res, 15, 226

Appendix 1 – HCH evaluation team

Health Policy Analysis

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Appendix 2 – Stakeholders interviewed for the Evaluation plan

Stakeholder organisation/ representation	Individuals involved	Date of interview
GP expert	Tony Lembke	28 February 2017
Royal Australian College of General Practitioners	 Josephine Raw, Deputy CEO/ General Manager (6 March 2017) Roald Versteeg, Manager, Advocacy and Policy (6 March 2017 and 7 December 2017) Stephan Groombridge, Acting General Manager (7 December 2017) 	6 March 2017 and 7 December 2017
Consumers Health Forum	• Jan Donovan	6 March 2017
Australian College of Rural and Remote Medicine	 Marita Cowie, CEO Jenny Johnson, Senior Policy and Development Officer Vicki Sheedy, General Manager, Quality and Safety in Practice 	13 March 2017
National Aboriginal Community Controlled Health Organisation*	Dawn Casey, Chief Operating OfficerBronwyn Vincent	14 March 2017
Australian Medical Association	Warwick Hough, Director, General Practice, Legal Services and Workplace Policy	14 March 2017
Regional Coordination Working Group	• CEOs of 10 participating Primary Health Networks and state and territory health authority representatives involved in Commonwealth and state relationships	14 March 2017
GP expert and former Chair of the Primary Health Care Advisory Working Group	Steve Hambleton	17 November 2017
GP expert	• Walid Jamal	17 November 2017

* Declined to comment on the HCH implementation or evaluation. Instead provided information about concurrent issues impacting ACCHS and Aboriginal Medical Services.

Appendix 3 – Progress with evaluation questions

Key question 1

Key question 1: Detailed questions	Key question 1: Measures	Progress (C=completed; P=partially covered in this report; N=not yet covered)	Reference in Vol 2
Level: Program			
1.01 What program level activities were undertaken to assist implementation, including program governance, planning, risk management, stakeholder engagement, development of policies and procedures, and HCH model development?	1.01.01 Description of program implementation activities undertaken.	С	Chapter 2, Appendix 1
	1.01.02 Opportunities for improving program-level activities in subsequent rollouts of the program most frequently identified by stakeholders.	Р	Chapters 2 & 8
1.02 How were practices recruited to participate in the HCH program? What were the characteristics of practices that were accepted to participate in the HCH program? Did this yield an appropriate mix of practice types and settings for testing the first stage of the program's rollout? Did the practices recruited enrol a sufficient number and mix of patients to demonstrate HCH program viability?	1.02.01 Description of practice recruitment activities undertaken.	С	Chapter 3
	1.02.02 Number of practices applying and recruited by the study strata, including Modified Monash (remoteness) categories, practice type (i.e. corporate, independently owned, ACCHS), practice size and staff categories (GP only, GP + practice nurse, GP + practice nurse + other clinical staff).	С	Chapter 3
	1.02.03 Number of practices recruited is at least 10 for each of the study strata.	С	Chapter 3
	1.02.04 Number of patients enrolled from HCH practices is at least 100 for each of the study strata.	С	Chapter 3
	1.02.05 Frequency of categories of factors influencing the practice to participate in the HCH program.	С	Chapter 3
	1.02.06 Proportion of HCH practice populations by Modified Monash (remoteness) categories.	С	Chapter 3
	1.02.07 Opportunities to encourage wide recruitment of practices in subsequent rollouts of the program most frequently identified by stakeholders.	Ρ	Chapter 3

Key question 1: Detailed questions	Key question 1: Measures	Progress (C=completed; P=partially covered in this report; N=not yet covered)	Reference in Vol 2
1.03 How was HCH training strategy implemented at the national level? What training was provided to HCH practices? What was the level of participation by practice staff in training? How effective was HCH training in enhancing practice staff knowledge and understanding of the HCH program, the patient centred medical home, and the approach for implementing change within the practice? Which approaches to training were most successful?	1.03.01 Description of activities undertaken and arrangements put in place for HCH training.	С	Chapter 6, Appendix 1
	1.03.02 Number of HCH practice staff who participated in PHN-delivered training, by staff category.	С	Chapter 6
	1.03.03 Proportion of HCH practice staff (based on head count) who participated in PHN-delivered training, by staff category.	С	Chapter 6
	1.03.04 Number of HCH practice staff who completed the online HCH training program modules, by staff category (by module and overall).	С	Chapter 6
	1.03.05 Proportion of HCH practices from which practice staff participated in PHN-delivered training.	С	Chapter 6
	1.03.06 Tools most frequently identified by practice staff as being the most helpful in the HCH implementation.	С	Chapter 3
	1.03.07 Training modules most frequently identified by practice staff as being the most helpful in the HCH implementation.	С	Chapter 6
	1.03.08 Improvements in HCH training most frequently identified by practices and PHNs.	С	Chapter 6, Appendix 1
1.04 What infrastructure and processes were commissioned to support processes for risk stratification and patient enrolment? In what ways could processes and infrastructure for risk stratification and enrolment of patients be improved? How well did the risk stratification model and processes predict hospitalisation and use of other health care services? Was there sufficient information available in practice data and other sources to allocate to risk categories? What are the implications of applying the risk stratification and patient selection processes more broadly across Australian primary care practice populations? What improvement would be expected if the risk stratification process included additional data sources?	1.04.01 Description of activities undertaken and arrangements for risk stratification and patient enrolment.	С	Chapters 4 & 7
	1.04.02 Performance of risk stratification model in predicting fact of hospitalisation (AUC), number of hospitalisations/bed days (RMSE) and level of health expenditure (RMSE) (AUC-Area under the curve, RMSE- Root mean square error).	Ρ	Chapter 7
	1.04.03 Variation in predictive performance of risk stratification models across practice types/categories (reflecting quality of practice information).	Ν	
	1.04.04 Improvement in predictive performance measures when adding additional data from linked source.	Ν	

Key question 1: Detailed questions	Key question 1: Measures	Progress (C=completed; P=partially covered in this report; N=not yet covered)	Reference in Vol 2
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?	1.05.01 Description of administrative arrangements.	С	Chapters 3 & 4
	1.05.02 Proportion of HCH claims processed within specified time frames.	N	
	1.05.03 Proportion of practices agreeing that the HCH processes reduced administrative burden for the practice compared with usual MBS processes.	Ν	
	1.05.04 Program and administrative improvements most frequently identified by practices and other stakeholders.	Р	Chapters 3 & 4
	1.05.05 Description of compliance issues that emerged during the trial and how these were addressed.	Ν	
Level: Primary Health Network/Regional			
1.06 What roles did PHNs play in the HCH implementation? What existing PHN/ state/territory/ Local Hospital Network (LHN) quality improvement/ chronic disease management initiatives were leveraged to assist the HCH implementation?	1.06.01 Support activities most frequently identified by practices, PHNs and other stakeholders.	С	Chapter 6
	1.06.02 Description of quality improvement/ chronic disease management initiatives by PHNs, LHNs, and state and territory health authorities leveraged during HCH implementation.	Ν	
	1.06.03 Quality improvement/ chronic disease management initiatives most frequently identified by practices, PHNs and other stakeholders.	Р	Chapter 3
	1.06.04 Opportunities for improvement in support provided to practices by PHNs, LHNs, and state and territory health authorities most frequently identified by practices and PHNs.	Р	Chapter 6

Key question 2

Key question 2: Detailed questions	Key question 2: Measures	Progress (C=completed; P=partially covered in this report; N=not yet covered)	Reference in Vol 2
Level: Practice			
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?	2.01.01 Most frequent changes to policies, procedures and systems as a result of HCH implementation (together with descriptions).	С	Chapter 3
	2.01.02 Proportion of practices that reported changes to administrative processes (grouped to categories) to manage payments as a result of HCH implementation (together with descriptions of processes).	С	Chapter 3
	2.01.03 Proportion of practices that reported undertaking activities (grouped to categories) for risk stratification and patient enrolment processes (together with descriptions of processes).	С	Chapters 3 & 7
2.02 How did practices approach provision of chronic disease care prior to 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?	2.02.01 Most frequent chronic disease management/quality improvement initiatives and processes that were a focus during the trial. Initiatives will be assigned to categories based on coding of textual descriptions.	С	Chapter 3
	2.02.02 Proportion of practices that reported focussing on specific categories of chronic disease management/quality improvement initiatives.	С	Chapter 3
2.03 How did the mix, roles and activities of primary health care staff change following the HCH program implementation?	2.03.01 Mean number of staff (head count and FTE) by staff type (GP, practice nurse/other nurse, nurse practitioner, allied health staff, Aboriginal Health Worker, administrative staff) at commencement and at the end of the trial.	Ρ	Chapter 3
	2.03.02 Proportion of practices that reported undertaking changes in staff roles (grouped to categories) following HCH commencement (together with descriptions of changes).	Р	Chapter 3
	2.03.03 Proportion of practices that reported undertaking changes in staff activities (grouped to categories) following HCH commencement (together with descriptions of changes).	Р	Chapter 3

Key question 2: Detailed questions	Key question 2: Measures	Progress (C=completed; P=partially covered in this report; N=not yet covered)	Reference in Vol 2
2.04 How did the relationship between the practice and other health care and service	2.04.01 Most frequent changes in care coordination reported by external health service providers with which HCH practices interact (together with descriptions).	ealth service N ions).	
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?	2.04.02 Proportion of practices that reported changes in relationship between the practice and other health care and service providers (grouped to categories) following HCH commencement (together with descriptions of changes).	Ν	
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?	2.05.01 Proportion of practices that reported undertaking specific changes (grouped to categories) due to the additional flexibility that the bundled payment provided for the practice (together with descriptions of processes).	Ρ	Chapter 3
2.06 How did practices change from prior to the HCH program implementation to the end of the trial in implementing the dimensions of the patient centred medical home?	2.06.01 Proportion of practices with improved overall score, scores on each dimension, and scores for individual items, on the HCH-A tool, from between HCH commencement and at the end of the trial. (Change in mean scores will also be analysed.) The following dimensions will be highlighted in the analysis: organised/evidence based care, continuous and team based healing relationships, patient centred interactions, and care coordination.	Ν	
	2.06.02 Change between HCH program commencement and at the end of the trial in the proportion of practices by after-hours arrangement categories.	Ν	
	2.06.03 Change between HCH program commencement and at the end of the trial, in practice operating hours by day of week and public holidays.	Ν	
2.07 Which practice level approaches to implementation worked well, and in what contexts?	2.07.01 Rating of effectiveness of implementation strategies by practices (together with descriptions).	Ν	
2.08 How did the impact of HCH vary across practices with different characteristics (e.g. across different remoteness areas and ownership arrangements)? How did these	2.08.01 Proportion of patients enrolled in HCH by risk tier and other selected characteristics, compared across HCH practice strata.	С	Chapter 5
	2.08.02 Patients enrolled in HCH as a proportion of the total practice population, compared across HCH practice strata.	Ν	
Key question 2: Detailed questions	Key question 2: Measures	Progress (C=completed; P=partially covered in this report; N=not yet covered)	Reference in Vol 2
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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?	2.08.03 Multiple: Comparison of patient level outcomes, including access (see key question 3) compared across HCH practice strata and assessment of implications for equity in access and outcomes.	Ν	
2.09 How did the HCH implementation change provider experiences of delivering primary care services?	 2.09.01 Proportion of practice staff who report that following the HCH implementation they experienced improvements in selected aspects of their job, including: (a) having clear planned goals and objectives; (b) having an interesting job; (c) developing their role; (d) working to the full scope of their practice; (e) having adequate resources to do their job. 	Ν	
	2.09.02 Change in proportion of staff who left the service in the year prior to HCH vs. the final year of HCH.	Ν	

Key question 3

Key question 3: Detailed questions	Key question 3: Measures	Progress (C=completed; P=partially covered in this report; N=not yet covered)	Reference in Vol 2
Level: Patient			
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? Was there an improvement in the provision of preventive services (e.g. influenza vaccination). Was there an improvement in the level of medications review and quality use of medicines?	3.01.01 Change in the proportion of HCH patients with a diagnosis of Type 2 diabetes recorded in the practice system/inferred from other practice system data, for whom the results of a HbA1c test were recorded at least once in the previous six and in the previous 12 months compared with the change for comparator patients. (See Note 1) (See Note 2)	Ν	
	3.01.02 Change in the proportion of HCH patients for whom a diagnosis of diabetes can be inferred from MBS/PBS claims, for whom a claim for a HbA1c test was made at least once in the previous six and in the previous 12 months compared with the change for comparator patients. (See Note 2)	Ν	
	3.01.03 Change in the proportion of HCH patients for whom the results of a blood pressure assessment were recorded at least once in the previous six and in the previous 12 months compared with the change for comparator patients. (See Note 2) Patients with a diagnosis of Type 2 diabetes will be analysed separately. (See Note 1)	Ν	
	3.01.04 Change in the proportion of HCH patients or whom the results of a lipid test were recorded in the practice system at least once in the previous six and in the previous 12 months compared with the change for comparator patients. (See Note 1) (See Note 2)	Ν	
	3.01.05 Change in the proportion of HCH patients with a diagnosis of Type 2 diabetes and patients who had a cardiovascular disease diagnosis recorded in the practice system/inferred from other practice system data, for whom the results of a kidney function test (estimated glomerular filtration rate (eGFR) and/ or an albumin/creatinine ratio (ACR) or other micro albumin test result) was recorded at least once in the previous 12 months compared with the change for comparator patients. (See Note 1) (See Note 2)	Ν	
	3.01.06 Change in the proportion of HCH patients for whom a claim for a lipid test was made at least once in the previous 12 months compared with the change for comparator patients. (See Note 1) (See Note 2)	Ν	

Key question 3: Detailed questions	Key question 3: Measures	Progress (C=completed; P=partially covered in this report; N=not yet covered)	Reference in Vol 2
	3.01.06a Change in the proportion of HCH patients whose smoking status has been recorded. (See Note 1) (See Note 2)	Ν	
	3.01.06b Change in the proportion of HCH patients for whom information has been recorded in the practice clinical management system to enable calculation of BMI. (See Note 1) (See Note 2)	Ν	
	3.01.06c Change in the proportion of HCH patients who are immunised against influenza. (See Note 1) (See Note 2)	Ν	
	3.01.06d Change in the proportion of HCH patients who have had the necessary risk factors assessed to enable cardiovascular disease assessment (including age, smoking status, cholesterol and blood pressure). (See Note 1) (See Note 2)	Ν	
	3.01.07 Change in the proportion of patients for whom a claim for a GP management plan or review (MBS items 721) was made in the previous 24 months (with additional analysis conducted on previous 12 months), compared with the change for comparator patients. Note: HCH patients will not be eligible to claim item 721. However, the development of a GP management care plan is a requirement for enrolment in HCH. Therefore, it can be assumed that 100% of HCH patients have a GP management plan prepared. (See also Note 1 and Note 2)	Ν	
	Additional analysis will be conducted to assess trends for Reviews of a GP Management Plan (Item 732) and contribution to a Multidisciplinary Care Plan, or to a Review of a Multidisciplinary Care Plan (item 729), and Health Assessment for Aboriginal and Torres Strait Islander People (MBS item 715).		
	3.01.08 Change in the proportion of patients for whom a claim for the development of Team Care Arrangement (TCA) service (MBS item 723) was made in the previous 24 months (with additional analysis conducted on previous 12 months), compared with the change for comparator patients. Note: HCH patients' eligibility for item 721 for services delivered by the HCH practice will change, therefore assessment of these changes will require analysis and modelling based on practice data extracts. (See also Note 1 and Note 2).	Ν	

Key question 3: Detailed questions	Key question 3: Measures	Progress (C=completed; P=partially covered in this report; N=not yet covered)	Reference in Vol 2
	3.01.09 Change in the proportion of patients who can be classified as meeting the criteria for psychotropic polypharmacy, polypharmacy or hyperpolypharmacy compared with the change for comparator patients. (See Note 2) Psychotropic polypharmacy is defined as two or more psychotropic medicines 'taken' at the same time. Polypharmacy is defined to five to 10 medicines 'taken' at the same time. Hyperpolypharmacy is defined as 10 or more medicines 'taken' at the same time.	Ν	
	3.01.10 Change in the proportion of patients who can be classified as meeting the criteria for psychotropic polypharmacy, polypharmacy or hyperpolypharmacy for whom a medication review claim was made in the previous 12 months compared with the change for comparator patients. (See Note 2) See definitions above.	Ν	
	3.01.11 Change in the proportion of patients who exceed thresholds for potential inappropriate drug use (based on Beers criteria (American Geriatrics Society Beers Criteria Update Expert Panel, 2015) and/or Drug Burden Index (Hilmer, Mager, Simonsick et al., 2007)) compared with the change for comparator patients. (See Note 2)	Ν	
3.02 Did patients enrolled in the HCH program have improved access to primary care services, including through alternate ways of	3.02.01 Proportion of patients who increased their assessment of access to care items on the patient survey (aggregated across dimensions and individual item scores) between baseline and final patient survey. (Change in mean scores will also be analysed.)	Ν	
accessing the service? How did the use of primary care services change for HCH patients compared with similar patients	3.02.02 Most frequent improvements in access to care reported by consumers, families and carers (together with descriptions).	Ν	
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?	 3.02.03 Change in the mean number of services for which unreferred MBS claims have been made in the previous 12 months compared with the change for comparator patients. (See Note 2) (Note: for HCH patients, levels of service will be estimated by using practice data extracts to identify equivalent services claimable under MBS.) 	Ν	
	3.02.04 Change in the proportion of primary care services delivered across modalities (face-to- face, telemedicine, email) and staff type (GP, practice nurse, nurse practitioner, allied health, Aboriginal Health Worker) in the previous 12 months between: (a) entry to the HCH program; and (b) the anniversary of entry to the program.	Ν	
	3.02.05 Change in non-referred services delivered by HCH practices as a proportion of all primary care providers. (An additional formulation of this measure will include emergency department presentations in the numerator of total non-referred services.)	Ν	

Key question 3: Detailed questions	Key question 3: Measures	Progress (C=completed; P=partially covered in this report; N=not yet covered)	Reference in Vol 2
	3.02.06 Change in indices of care continuity and care density for the previous 12 months compared with the change for comparator patients. (Note for HCH patients, levels of service will be estimated by using practice data extracts to identify equivalent services claimable under MBS.) Indices include: usual provider of care (UPC) index (Saultz, 2003), Bice Boxerman Continuity of Care (COC) index (Bice and Boxerman, 1977), and Care Density Index (Pollack, Weissman, Lemke et al., 2013). (See Note 2)	Ν	
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?	3.03.01 Change in the mean number of claims for allied health services available under MBS for people with chronic diseases (MBS Items 10950-10970;81100-81125) in the previous 12 months compared with the change for comparator patients. (See Note 2)	Ν	
	3.03.02 Change in the mean number of specialist, pathology and imaging services for which MBS claims have been made in in the previous 12 months compared with the change for comparator patients. (See Note 2) (Note for HCH patients, levels of service will be estimated by using practice data extracts to identify equivalent services claimable under MBS.)	Ν	
	3.03.03 Most frequent changes in referral pathways and improvements in integration of care reported by practices, PHNs and other stakeholders (together with descriptions).	Ν	
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	3.04.01 Proportion of patients with improved assessment of engagement, including increased involvement in care planning (aggregated across dimension and individual item scores) and activation between baseline and final survey. (Change in mean scores will also be assessed).	Ν	
greatest impact on patient activation?	3.04.02 Most frequent changes in patient engagement and activation reported by patients (together with descriptions).	Ν	
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	3.05.01 Proportion of patients with an improved rating of their primary care provider between the baseline and final patient survey. (Change in mean scores will also be assessed.)	Ν	
	3.05.02 Proportion of patients with an improved assessment of the communication items (aggregated across dimension and individual item scores) between the baseline and final patient survey. (Change in mean scores will also be assessed.)	Ν	

Key question 3: Detailed questions	Key question 3: Measures	Progress (C=completed; P=partially covered in this report; N=not yet covered)	Reference in Vol 2
patients, carers and families in care planning?	3.05.03 Proportion of patients with an improved assessment of the coordination of care items (aggregated across dimension and individual item scores) between the baseline and final patient survey. (Change in mean scores will also be assessed.)	Ν	
	3.05.04 Most frequent improvements in communication and coordination of care reported by consumers, families and carers (together with descriptions).	Ν	
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?	3.06.01 Change in the mean number of emergency department presentations (total and by episode end status) per patient in the previous 12 months compared with the change for comparator patients. (See Note 2)	Ν	
	3.06.02 Change in the mean number of emergency admitted patient care episodes per patient in the previous 12 months compared with the change for comparator patients. (See Note 2)	Ν	
	3.06.03 Change in the mean number of total admitted patient care episodes per patient and bed days per patient in the previous 12 months compared with the change for comparator patients. (See Note 2)	Ν	
	3.06.04 Change in the mean number of total admitted patient care readmissions per patient in the previous 12 months compared with the change for comparator patients. (See Note 2)	Ν	
	3.06.05 Change in the proportion of acute bed days occurring in a hospital that is located close to the patient's residence.	Ν	
	3.06.06 Change in the mean number of potentially preventable admitted patient care episodes (overall and by type) per patient in the previous 12 months compared with the change for comparator patients. (See Note 2)	Ν	
	3.06.07 Change in the mean number of potentially preventable admitted patient care bed days (overall and by type) per patient in the previous 12 months compared with the change for comparator patients. (See Note 2)	Ν	

Key question 3: Detailed questions	Key question 3: Measures	Progress (C=completed; P=partially covered in this report; N=not yet covered)	Reference in Vol 2
	3.06.08 Change in the mean National Weighted Activity Units (NWAU) (admitted and emergency care) per patient in the previous 12 months compared with the change for comparator patients. (See Note 2)	Ν	
	3.06.09 Proportion of patients admitted to a residential aged care facility compared with proportion for comparator patients.	Ν	
	3.06.10 Mean/ median time for HCH patients admitted to a residential aged care facility compared with the mean/ median time for comparator patients (using time-to-event analysis).	Ν	
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?	3.07.01 Multiple: Comparison of patient level outcomes (each of the indicators) compared across selected patient characteristics including: remoteness area of residence, Indigenous status, selected cultural and linguistic diversity (CALD) categories, categories of risk, including assessment of implications for equity in access and outcomes.	Ν	
	3.07.02 Proportion of patients who leave the program categorised by reason for leaving.	Ν	
3.08 What preliminary evidence is there of the impact of the HCH program on health outcomes?	3.08.01 Change in the proportion of HCH patients with a diagnosis of Type 2 diabetes recorded in the practice system/inferred from other practice system data, whose last HbA1c measurement result was within specified levels (less than or equal to 7%; greater than 7% but less than or equal to 8%; greater than 8% but less than 10%; greater than or equal to 10%), compared with the change for comparator patients. (See Note 1) (See Note 2)	Ν	
	3.08.02 Change in the proportion of HCH patients with a diagnosis of Type 2 diabetes or cardiovascular disease recorded in the practice system/inferred from other practice system data, who had a kidney function test within the last 12 months and an eGFR result recorded, with results within specified levels (greater than or equal to 90; greater than or equal to 60 but less than 90; greater than or equal to 45 but less than 60; greater than or equal to 30 but less than 45; greater than or equal to 15 but less than 30; less	Ν	

Key question 3: Detailed questions	Key question 3: Measures	Progress (C=completed; P=partially covered in this report; N=not yet covered)	Reference in Vol 2
	than 15), compared with the change for comparator patients. (See Note 1) (See Note 2)		
	3.08.03 Change in the proportion of HCH patients with a diagnosis of Type 2 diabetes recorded in the practice system/inferred from other practice system data, whose last blood pressure measurement result was less than or equal to 130/80 mmHg, compared with the change for comparator patients. (See Note 1) (See Note 2)	Ν	
	3.08.04 Median time to event reflecting onset of serious acute cardiovascular event or death. Composite index of hospital admission for selected serious conditions (e.g. acute coronary syndrome, stroke) and death. Median time to event for HCH patients compared with comparator patients (using survival analysis).	Ν	
	3.08.05 Median survival (time to death). HCH patients compared with comparator patients (using survival analysis).	Ν	

Key question 4

Key question 4: Detailed questions	Key question 4: Measures	Progress (C=completed; P=partially covered in this report; N=not yet covered)	Reference in Vol 2
Level: Program			
4.01 What is the cost to governments of care for HCH enrolled patients?	4.01.01 Difference in mean government payments in the previous 12 months between (a) entry to the HCH program; and (b) the anniversary of entry to the program, HCH patients vs. comparator patients.	Ν	
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?	4.02.01 Difference in mean per patient total of government MBS/HCH payments and cost to government of hospital services in the previous 12 months between: (a) entry to the HCH program; and (b) the anniversary of entry to the program, HCH patients vs. comparator patients. Cost to government of hospital services will be based on the total NWAUs related to use of public hospitals, multiplied by the National Efficient Price.	Ν	
4.03 Is the current HCH model financially sustainable?	4.03.01 Mean government cost (including of hospital services) per patient is less for HCH patients vs. comparator patients.	Ν	
4.04 What resources are required to make HCH succeed, and how can these be efficiently used?	4.04.01 Estimated cost of improvements to the design and payment arrangements for the HCH model and the impacts these will have on program outcomes.	Ν	
4.05 What will be the financial impact of extending the model to practices across Australia?	4.05.01 Estimated cost to government of extending the HCH to all other practices across Australia.	Ν	
4.06 Does the HCH program deliver value for money?	4.06.01 Cost consequence analysis: Mean government cost per patient is less for HCH patients vs. comparator patients and there is evidence that HCH delivers equivalent or superior outcomes for patients. Alternatively, mean government cost per patient is greater for HCH patients vs. comparator patients and there is evidence that HCH delivers superior outcomes for patients.	Ν	
Level: Practice			
4.07 What are the costs to practices of delivering HCH programs? Is this matched by HCH	4.07.01 Per patient practice revenue for HCH patients compared with continuation of usual MBS payments.	Ν	
payments? Is the current HCH model financially sustainable for practices?	4.07.02 Change in net cost to practices per patient resulting from changes in the mix of services delivered to HCH patients.	Ν	
Level: Patient			
4.08 What is the impact of HCH enrolment on patient, carer and family out-of-pocket costs?	4.08.01 Difference in the mean out-of-pocket payments for HCH patients in the previous 12 months between: (a) entry to the HCH program; and (b) the anniversary of entry to the program, HCH patients vs. comparator patients. Out-of-pocket costs will be	Ν	

Key question 4: Detailed questions	Key question 4: Measures	Progress (C=completed; P=partially covered in this report; N=not yet covered)	Reference in Vol 2
	estimated from MBS and PBS data, analysis of hospital data and analysis and modelling of practice policies relating to co-payments for HCH patients.		

Key questions – Community Pharmacy in HCH

Measures	Level PR=Program PH/C= Pharmacist/ practice PT=Patient	Progress (C=completed; P=partially covered in this report; N=not yet covered)	Reference in Vol 2
5.01 Description of program activities undertaken.	PR	Р	Chapter 11
5.02 How did pharmacists prepare for delivering medication management services to patients?	PH/C	Ν	
5.03 Number of pharmacists completing the online training and attending the training workshops.	PR	Ν	
5.04 Pharmacists' satisfaction with online training and training workshops.	PR	Ν	
5.05 Nature of pharmacy integration initiatives, including related to medication reconciliation/ review, that HCH practices and community pharmacists had in place prior to the commencement of the community pharmacy component of the HCH trial.	PH/C	Ν	
5.06 What features of the program worked and what features need to be improved?	PR	Ν	
5.07 Number and proportion of HCH patients (by tier) receiving Trial Program services and comparison with HCH population.	PR	Р	Chapter 11
5.08 Distribution of patients across self-reported chronic conditions, and comparison with HCH population.	PH/C	Р	Chapter 11
5.09 Distribution of patients across practice types and geographic regions, and comparison with HCH population.	PR	Р	Chapter 11
5.10 Number and proportion of patients that completed follow-up reviews.	PT	N	
5.11 How adequate was the number of sessions for patients' needs?	PT	N	
5.12 Number and proportion of Tier 2 and Tier 3 patients receiving supporting services.	PT	Р	Chapter 11
5.13 Types of supporting services provided by pharmacists to Tier 2 and 3 patients and changes at follow-up review.	PH/C	Ν	

Measures	Level PR=Program PH/C= Pharmacist/ practice PT=Patient	Progress (C=completed; P=partially covered in this report; N=not yet covered)	Reference in Vol 2
5.14 Under what circumstances do Tier 1 patients benefit from supporting services?	PT	Ν	
5.15 Was patient participation in the program maintained throughout the trial?	PT	Ν	
5.16 What were the types of goals identified for patients during the development of the MMP? Which were the most common?	PH/C	Ρ	Chapter 11
5.17 What were the type of outcomes reported in patients' MMPs? Which were the most common?	PH/C	Ρ	Chapter 11
5.18 Which patients benefited from the Trial Program and how did they benefit?	PT	Ν	
5.19 Are the benefits of the program similar for patients across categories of disadvantage? What strategies are required to ensure disadvantaged groups benefit from the program?	PT	Ν	
5.20 How were medications reviewed for patients who did not receive services from community pharmacists?	PT	Ν	
5.21 Opportunities for improving program-level activities in subsequent rollouts of the program most frequently identified by stakeholders.	PR	Ν	
6.01 What criteria did practices use to select patients who could benefit from community pharmacist input?	PH/C	Ν	
6.02 Change in patients' self-reported (to the pharmacist) attendance at an emergency department and/ or hospitalisation in the last 6 months – initial assessment compared with follow-up review.	PT	Ν	
6.03 Change in MedsIndex score - initial assessment compared with follow-up review.	PT	Ν	
6.04 Change in patients' adherence to medication (pharmacists' assessment) - initial assessment compared with follow-up review.	PT	Ν	
6.05 Change in the proportion of patients who can be classified as meeting the criteria for psychotropic polypharmacy ¹ , polypharmacy ¹ or hyperpolypharmacy ¹ - initial assessment compared with follow-up review.	PT	Ν	
6.06 Change in pharmacist's observation of the patient's achievement of each of the agreed medication management goals at the follow up review.	PT	Ν	

Measures	Level PR=Program PH/C= Pharmacist/ practice PT=Patient	Progress (C=completed; P=partially covered in this report; N=not yet covered)	Reference in Vol 2
6.07 Patients' assessment of community pharmacy service in gaining knowledge, improving confidence and competence with medications.	PT	Ν	
6.08 Themes identified in qualitative analysis of reports from patients, carers and families on their experiences in receiving the services of the community pharmacist.	PT	Ν	
6.09 Did patients referred to community pharmacists report an improved experience of care overall, including coordination of their care and communication with their HCH?	PT	Ν	
7.01 Number of pharmacists verbally consulting HCH/ GP about the patient, participating in team care meetings/ case conferences with patients' HCH, or advising the HCH/ GP of issues through other communication.	PH/C	Ν	
7.02 What approaches were implemented to facilitate collaboration between pharmacists and HCH practices/ GPs?	PH/C	Ν	
7.03 How successful were these models from the perspective of pharmacists and HCH practices/GPs? What factors contributed to or detracted from successful collaboration? What needs to change to improve the level of interprofessional collaboration between pharmacists and HCH practices/GPs?	PH/C	N	
8.01 What is the cost of the community pharmacy component of the HCH trial?	PR	Ν	
8.02 Do the fees paid to pharmacists compensate for the time spent with HCH patients during the trial?	PH/C	Ν	
8.03 What is the evidence that the program will lead to cost savings through quality use of medicines?	PR	Ν	

Appendix 4 – Sample practice benchmark report

Health Care Homes Practice Benchmark Report: February 2018 - June 2019 Sample Medical Centre







Health Care Homes Practice Benchmark Report

For: Sample Medical Centre

Reporting period: February 2018 - June 2019

This report provides information about patients enrolled in the Health Care Homes (HCH) program in your practice and other practices participating in the HCH. It also describes the completeness and timeliness of clinical assessments and measurements as recorded in the practice management systems for HCH patients. The information presented could be useful to inform areas for quality improvement. Results presented in this report are drawn from two data sources, including HCH registrations with the Department of Human Services' Health Professional Online Services registration (referred to as "HPOS registration") and patient records extracted from the practice clinical management systems through PENCS or POLAR extraction software (referred to as "practice data"). The HPOS registration and practice data are provided for the HCH evaluation in a confidential and de-identified form. It is not possible to ascertain patient clinical information that is not included in the practice data extracts.

Information about your practice

Practice size	Between 1.6 and 5 full-time equivalent GPs
Practice location	Small rural towns, remote, very remote communities (Modified Monash categories 5-7)
Practice ownership	Corporate

Practice size is based on the number of full-time equivalent GPs in the practice which may change over time.

Key findings from this report

- * By the end of June 2019, your practice had 300 patients enrolled in the HCH program within the HPOS registration system.
- * The number of enrolled patients identified in your practice data extracts over the same period was 295.
- * In the last year, recording of clinical assessments and measurements in practice extracts for 259 patients ranged from 0% (physical activity), 53% (waist), 96% (body weight), 99% (smoking status) to 100% (pulse) and 100%(cholesterol). In patients with diabetes, 99% had a HbA1c test recorded in the last year.
- * The top five health conditions flagged in practice extracts for 295 patients are high blood pressure (73%), high cholesterol (63%), osteoarthritis (48%), type 2 diabetes (48%) and coronary heart disease (39%). It is likely that patient health conditions may be underascertained.

Section 1: HCH enrolments and patient characteristics based on the HPOS registration

This section presents the number of HCH patients enrolled in the HPOS registration in your practice and other similar practices by the end of June 2019 as well as patient characteristics such as age, sex and risk tier.

Table 1: Number of HCH enrolm	ients and risk tier in you	ir practice, as at June 2019
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	HPOS registration
Time of enrolment commencement	May 2018
Number of total enrolments [*]	300
HCH risk tier	
Tier 1	50
Tier 2	200
Tier 3	50

* Enrolled patients who subsequently withdrew are not included.

Table 2: Demographic characteristics and risk tier of patients in the HPOS registration: your practice versus other practices, as at June 2019

		Statistics from	n other HCH p	ractices
	Your practice	Similar location	Similar size	All others
	Number of enrolm	ents (persons)		
Total enrolments	300	6000	4000	9700
Mean (median)		70 (40)	50 (35)	65 (35)
Enro	olments by age, sex and risk	k tier (% of all enr	olments)	
Age group				
Under 25	0	4	4	5
25 to 44	3	11	11	13
45 to 64	16	28	31	29
65 to 74	35	29	25	26
75 to 84	36	22	24	21
85 and older	10	6	5	6
Sex				
Female	56	59	60	53
Male	44	41	40	47
HCH risk tier				
Tier 1	29	27	26	27
Tier 2	48	45	40	42
Tier 3	23	28	34	31

Notes: Results are drawn from HPOS registration data.

- Percentage is not shown when there are fewer than ten patients.

Section 2: HCH patient health profile based on practice data extracts

In Section 2, HCH patients are identified in practice data extracts and the number of patients identified is compared to the HPOS registration. This section also reports the completeness and timeliness of patient clinical assessments, measurements and patient health conditions. It is not possible to examine patient health profile when practice data extracts are not available or contain no flags for HCH patients.

Recording of HCH patient enrolments in practice data

Table 3: Number of HCH patients and risk tier identified in your practice data, as at June 2019

	Practice data
When the first patient was recorded	July 2018
Number of patients identified in practice data*	295
HCH risk tier	
Tier 1	47
Tier 2	198
Tier 3	50

* Enrolled patients who subsequently withdrew are not included.

Figure 1: Monthly cumulative patient enrolments in your practice: practice data versus HPOS registration



HPOS registration -- - Practice data

Completion and timeliness of recorded clinical assessments and measurements

Table 4: Recording of clinical assessments and whether an assessment was recorded in the previous year: your practice versus other practices

		Statistics for other HCH practices		
	Your practice	Similar location	Similar size	All others
Number of enrol	ments recorded in	practice data (pe	rsons)	
All patients	295	5300	3600	9005
Patients who have a	an assessment re	corded (% of all p	atients*)	
Smoking status [†]				
Ever recorded	100	93	95	95
Recorded in previous year	99	66	57	68
Alcohol consumption amount				
Ever recorded	100	81	79	78
Recorded in previous year	100	60	49	60
Physical activity [†]				
Ever recorded	0	5	10	17
Recorded in previous year	0	2	4	7
Body height				
Ever recorded	100	92	95	94
Body weight				
Recorded in previous year	96	77	80	80
Ever recorded	100	88	92	91
Waist				
Ever recorded	82	51	59	57
Recorded in previous year	53	29	30	31

Notes: Results are drawn from practice data extracted by Pen CS or POLAR software.

 Percentage is not shown when either: there are fewer than ten patients; practice extracts are not available; practice extracts are available but flags for HCH patients or data for an assessment are absent.

* Denominator includes only patients in practices that have data for an assessment.

* Smoking status is coded in Pen CS data as smoker (daily, weekly, irregular), ex-smoker and never smoked; in POLAR data as smoker, ex-smoker and non-smoker.

⁺ Physical activity is coded in Pen CS data as sufficient, insufficient and sedentary.

Table 5: Recording of clinical measurements and whether a measurement was recorded in the previous year and previous six months: your practice versus other practices

		Statistics for other HCH practices		
	Your practice	Similar location	Similar size	All others
Number of enrolm	ents recorded in	practice data (pe	rsons)	
All patients	295	5300	3600	9005
Patients with diabetes	130	2700	1500	4300
Patients with asthma or COPD*	110	2200	1300	4100
Patients who have a	measurement re	corded (% of all p	atients†)	
Blood pressure*				
Ever recorded	100	95	96	97
Recorded in previous year	100	87	89	90
Recorded in previous six months	93	75	77	79
Pulse				
Ever recorded	100	94	95	95
Recorded in previous year	100	82	84	84
Recorded in previous six months	93	67	70	70
Cholesterol				
Ever recorded	100	91	94	93
Recorded in previous year	98	76	78	76
Recorded in previous six months	73	55	55	54
Kidney function ¹				
Ever recorded	100	93	96	95
Recorded in previous year	99	81	84	83
Recorded in previous six months	79	62	65	64
Patients who have a Hb/	1c test recorded	l (% of patients w	ith diabetes)	
HbA1c				
Ever recorded	100	99	98	99
Recorded in previous year	99	91	91	92
Recorded in previous six months	79	76	75	77
Patients who have a spirometry test recorded (% of patients with asthma or COPD*))PD*)	
Spirometry**				
Ever recorded	88	20	22	19
Recorded in previous year	13	8	7	5
Recorded in previous six months	7	5	5	3

Notes: Results are drawn from practice data extracted by Pen CS or POLAR software.

 Percentage is not shown when either: there are fewer than ten patients; practice extracts are not available; practice extracts are available but flags for HCH patients or data for a measurement are absent.

* Patients with asthma or COPD in practices that had extracts of spirometry measurements.

[†] Denominator includes only patients in practices that have data for a measurement.

* Systolic or diastolic blood pressure.

[§] Total cholesterol, HDL, LDL or triglycerided.

¹ eGFR, serum creatinine, urinary creatinine or albumin-creatinine ratio.

** FEV or FVC.

Health profile of HCH patients

This table presents health conditions that have ever been flagged as 'active' by Pen CS or POLAR software. It is not possible to ascertain the conditions that have not been recorded in the practice systems or have not been included in the practice data extracts.

Table 6: Patients who have a health condition flagged in practice data extracts: your practice versus other practices

		Statistics for	other HCH pr	actices
	Your practice	Similar location	Similar size	All others
Number of e	nrolments recorded in	practice data (pe	rsons)	
All patients	295	5300	3600	9005
Patients who ha	ave a health condition	flagged (% of all _l	patients*)	
Patient health conditions				
Asthma	35	17	19	18
COPD	19	10	12	12
Atrial fibrillation	14	7	8	8
Coronary heart disease	39	14	14	15
Stroke	9	5	5	5
Congestive heart failure	6	3	4	5
Osteoarthritis	48	24	23	24
Osteoporosis	39	15	16	14
Anxiety	16	14	15	13
Depression	29	23	25	22
Bipolar disorder	1	2	3	2
Schizophrenia	3	2	2	2
Dementia	3	2	3	2
Cancer (any)	15	8	9	9
High blood pressure	73	45	48	48
High cholesterol	63	35	39	38
Diabetes type 1	2	2	2	2
Diabetes type 2	48	24	29	30
Chronic kidney disease	9	7	10	14
Number of morbidities [†]				
Nil	1	12	9	9
One condition	3	18	17	16
2-4 conditions	44	56	55	58
5+ conditions	52	14	19	17

Notes: Results are drawn from practice data extracted by Pen CS or POLAR software.

- Percentage is not shown when either: there are fewer than ten patients; practice extracts are not available; practice extracts are available but flags for HCH patients or flags for a health condition are absent.

* Denominator includes only patients in practices that have flags for a health condition.

[†] The number of above-listed health conditions, ranging from nil to 19.



Australian Government Department of Health

Evaluation of the Health Care Homes program

Interim evaluation report 2019 Volume 4: Evaluation data supplement

Revision history

Version	Date	Modification
0.1	13 December 2019	Initial draft.
0.2	14 February 2020	Minor edits to resolve discrepancies in data reported for different time points.

Suggested citation

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Acronyms and initialisms

ACCHS	Aboriginal Community Controlled Health Service
AGPAL	Australian General Practice Accreditation Limited
AMS	Aboriginal Medical Service
CATI	Computer Aided Telephone Interview
CHD	Coronary heart disease
CHF	Congestive heart failure
CKD	Chronic kidney disease
COPD	Chronic obstructive pulmonary disease
EQ-5D-5L	5-level EQ-5D version (quality of life instrument)
FTE	Full time equivalent
GP	General practitioner
HARP	Hospital Admissions Risk Program (tool)
HCH	Health Care Homes
HCH-A	Health Care Homes Assessment (tool)
HPOS	Health Professionals Online Services
IT	Information technology
LHN	Local Hospital Network
MBS	Medical Benefits Schedule
MMM	Modified Monash Model (remoteness categorisation)
NPS	National Prescribing Service
PACIC	Patient Assessment of Chronic Illness Care instrument
PAM	Patient Activation Measure
РСМН	Patient centred medical home
PBS	Pharmaceutical Benefits Schedule
PHN	Primary Health Network
PIP	Practice Incentive Program
PIP QI	Practice Incentive Program Quality Indicators
POC	Point of Care
POLAR	Population Level Analysis and Reporting (practice data extraction tool)

- PRM Predictive risk model
- R1 Round 1 of the evaluation. R2, R3, R4, R5 refer to rounds 2-5 respectively.
- RHD Rheumatic heart disease
- RST Risk stratification tool
- SNOMED-CT Systematized Nomenclature of Medicine-Clinical Terms
- SURE Secure Unified Research Environment
- TIA Transient ischaemic attack

Page 2

Introduction

This document is the Interim evaluation report 2019, Volume 4: Evaluation data supplement. It is one of four volumes featuring the findings of the evaluation of the HCH trial up to 31 August 2019¹. The volumes are described in Table 1.

Volume	Description
Volume 1: Summary report	Summarises the findings of the interim evaluation.
Volume 2: Main report	Presents the findings from the interim evaluation.
Volume 3: Evaluation progress	Describes progress for the evaluation to September 2019, including progress with acquiring evaluation data and approaches for analysing qualitative and quantitative data.
Volume 4: Evaluation data supplement	Includes supplementary data to support the findings reported in Volume 2.

Table 1 – Interim evaluation report 2019: Description of volumes

Volume 4 is structured around the data sources used for the evaluation. Each chapter describes the data source and analysis of the data. It includes tables and charts to explain features of the data and results that have not been presented in the other volumes. More detailed tables are provided in the appendices, where cross tabulations of data are provided using variables of interest, specifically:

- The HCH tier to which patients were assigned.
- The size of the practice, based on the number of full time equivalent (FTE) GPs. •
- The ownership arrangement for the practices: corporate, Aboriginal Medical Service • (AMS) or independent.
- The geographic remoteness of the practice using the Modified Monash Model (MMM). For most tables, the seven MMM categories are grouped into three categories – MMM 1, MMM 2-3 and MMM 4-7 – ranging from major city to remote.

For practical purposes, data collection for the evaluation is organised into 'rounds'. The time frames for these are shown in Table 2. The patient survey was organised into 'waves'. The time frames for the waves are shown in Table 9.

Data collection round	Time frame			
Round 1 (R1) data collection	1 October 2017 to 30 June 2018			
Round 2 (R2) data collection	1 July to 31 December 2018			
Round 3 (R3) data collection	1 January to 30 June 2019			
Round 4 (R4) data collection	1 July 2019 to 30 June 2020			
Round 5 (R5) data collection	1 July 2020 to 30 June 2021			

Table 2 - Data collection rounds for the ovaluation and time frames

Table 3 – Patient survey "waves" and time trames				
Wave	Time frame			
Wave 1	December 2017 to March 2019			
Wave 2	December 2019 to March 2020			
Wave 3	December 2020 to March 2021			

¹ This is the latest date for which findings are reported. Some data end earlier.

	Key	Collection	Report in v data co	Chapter in which		
Data source	questions	type	Interim 2019	Interim 2020	Final 2021	data are presented in this Vol.
Patient surveys	3	Primary	Wave 1	Wave 2	Wave 1, 2 and 3	4
Practice surveys	1, 2, 4	Primary	R1 R2	R1 R2 R4	R1 R2 R4 R5	2
Practice staff surveys	1, 2, 4	Primary	R1 R2	R1 R2 R4	R1 R2 R4 R5	2
PHN surveys	1, 2, 4	Primary	R1 R2	R1 R2 R4	R1 R2 R4 R5	3
PHN interviews	1, 2,4	Primary	R1 R2	R1 R2 R4	R1 R2 R4 R5	NA
Case studies ¹	2,4	Primary	R2	R1 R2 R4	R1 R2 R4 R5	NA
HCH program data ²	1, 4	Secondary	Oct 2017- Aug 2019	Oct 2017- Jun 2020	Oct 2017- Jun 2021	NA
Community	5,6,7,8	Secondary	July 2018-	July 2018-	July 2018-	7
Pharmacy in HCH	-		June 2019	June 2020	June 2021	
Risk stratification data	2	Secondary	July 2018- June 2019	July 2018- June 2020	July 2018- June 2021	6
Practice extracts	2, 3	Secondary	Various- June 2019	Various - June 2020	Various - June 2021	5
Linked data ³	3,4	Secondary	NA	Jul 2015 – June 2019	Jul 2015 – June 2021	NA

Table 4 – Evaluation data sources and where these are presented in this volume

¹Case studies include patient interviews/ focus groups, practice interviews, related provider interviews (e.g. pharmacists, allied health), PHN interviews, LHN/ state & territory health authority interviews; ²Includes, amongst other issues, data on registrations, utilisation of training modules; ³Includes MBS, PBS, hospital, emergency department, aged care, and fact of death data.

HCH practice and staff surveys

Surveys of participating HCH practice were conducted in Round 1 and Round 2. Further surveys will be conducted in Round 4 (late 2019), and Round 5 (late 2020). The topics included or planned to be included in each round are described in Table 5. The surveys were administered online using the Qualtrics system. To accompany the survey in Round 1, Health Policy Analysis developed a Microsoft Excel tool that practices could use to compile assessments from individual staff members towards the HCH-A. The intention was for practices to use the tool as a basis for discussing individual staff members' scoring and achieving a consensus response for the practice.

Round	conducted	
Round 1	March-June 2018	 Part A Characteristic of the practice at baseline Staffing Opening hours Accessibility of other services in the local community Information technology infrastructure and capabilities Participation in PIP and quality improvement activities Co-payment policies Practice costs Part B Self-assessment against dimension of the Patient Centred Medical Home using the HCH-A tool
Round 2	November 2018 - March 2019	 Perspectives on patient enrolment and risk stratification Perspectives on training and support Focus for initiatives implemented/ enhanced as part of HCH
Round 4	Late 2019	 Progress on initiatives implemented/ enhanced as part of HCH
Round 5	Late 2020	 Part A assessment of initiatives implemented/ enhanced as part of HCH shared care planning patient engagement and activation chronic disease management assessment of training and support changes in staffing financial impacts of HCH. Part B Self-assessment against dimension of the Patient Centred Medical Home using the HCH-A tool

Table 5 – Topic areas for each practice survey

Table 6 describes the response rates to the surveys and the characteristics of practices responding. Of the 131 practices still participating in the program on 31 August 2019, 120 had

responded to the Round 1 Part A survey (response rate of 91.6%) and 92 to the Round 2 survey (response rate of 70.2%).

Study strata ¹	Practice surveys Pract- n (response rate)			Staff surveys n (% of responses)		
Siddy sindle	n	Round 1 Part A	Round 1 Round 1 Round 2 Part A Part B		Round 1	
1. Total	1. Total					
Active practices	131	120 (91.6%)	118 (90.1%)	92 (70.2%)	425	
Withdrawn practices	96	57	51	13	104	
All practices	227	177	169	105	529	
2. Size (active practices only, n	=425)					
Large practice (8+ FTE GPs)	24	22 (91.7%)	21 (87.5%)	16 (66.7%)	78 (18.4%)	
Medium practice (5 - 8 FTE GPs)	27	26 (96.3%)	25 (92.6%)	23 (85.2%)	119 (28.0%)	
Small practice (< 5 FTE GPs)	64	57 (89.1%)	57 (89.1%)	42 (65.6%)	193 (45.4%)	
Sole practitioner	16	15 (93.8%)	15 (93.8%)	11 (68.8%)	35 (8.2%)	
3. Ownership (active practices	only, n=4	25)				
AMS ²	17	15 (88.2%)	15 (88.2%)	8 (47.1%)	37 (8.7%)	
Corporate	20	18 (90%)	18 (90%)	13 (65%)	51 (12.0%)	
Independent	94	87 (92.6%)	85 (90.4%)	71 (75.5%)	337 (79.3%)	
4. MMM ³ (active practices only, n=425)						
MMM 1	91	83 (91.2%)	83 (91.2%)	73 (80.2%)	327 (76.9%)	
MMM 2	14	14 (100%)	12 (85.7%)	4 (28.6%)	19 (4.5%)	
MMM 3	5	5 (100%)	5 (100%)	4 (80%)	20 (4.7%)	
MMM 4-5	7	6 (85.7%)	5 (71.4%)	5 (71.4%)	4 (0.9%)	
MMM 6-7	14	12 (85.7%)	13 (92.9%)	6 (42.9%)	20 (4.7%)	
				51.4.4		

Table 6 – Response rates and characteristics of practices and staff responding to survey
requests

Source: Department of Health database of practices and Practice survey R1 Mar-Jun 2018. ¹Does not include strata in dimension relating to range of clinical staff available at the practice; ²Aboriginal Medical Service is used to refer to both Indigenous Health Services and ACCHS. In this Table, all but one AMS is an ACCHS; ³MMM refers to the Modified Monash Model. It 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 Programme (GPRIP). MMM 1 aligns fully with the ASGS-RA category of 'Major cities'. MMM 7 relates to the most remote areas.

In addition to tables from the practice surveys that were included in Volume 2, additional tables are provided in Appendix 1. Table 7 provides a guide to these tables (and tables from the practice staff surveys). Tables are grouped into topic areas.

Table 7 – Guide to topics addressed in tables and figures derived from the practice surveys and practice staff surveys

Topics and tables/figures that address that topic
Practice distribution across study strata and response rates to surveys
Volume 2 Main report:
Table 3 – Participation status of practices and number of patients enrolled by active practices, by
sampling strata, as at 31 August 2019
Figure 2 – Number of active practices enrolling one or more patients or no patients, and number of
practices withdrawing from the program, January 2018-August 2019
Volume 4 Evaluation data supplement:
Table 6 – Response rates and characteristics of practices and staff responding to survey request
Practice staff characteristics
Volume 2 Main report:
Table 5 – GPs. Total and participating in HCH
Table 6 – GPs participating in HCH by employment arrangement
Table 9 – Staff within the each practice
rable 8 – Defails of allied health statt reported by practices
Volume 4 Evaluation data supplement:
Table 21 – Do GPs in the practice have formal arrangements for working with in local hospitals
hasolino
Daseinie
Access
Volume 2 Main report:
Table 9 – Average time (days) to wait for a GP appointment
Table 10 – Availability of selected means of communication between patients and the practice
Volume 4 Evaluation data supplement:
Table 25 – Practice assessment of access to the selected health services within the local
community baseline
Table 26 – Arrangements for patient attending the practice to access after hours general practice
Table 27. How long (in days) door the patient have to wait before seeing a CP baseline
Table 27 – How long (in days) does the patient have to wait before seeing a GF, baseline
Table 28 – Option available for patients to interact with practice/GP, baseline
Table 29 – At least one GP in the practice who makes home visits
IT and data capabilities
Volume 2 Main report:
Table 11 Practice reports of how against is to generate selected information about patients using
Table 11 – Practice reports of now easy it is to generate selected information about patients using
The practice clinical management system ana/or other software
Table 12 – Practice reports on whether selected systems/processes are in place
Table 13 – Practice reports on whether GPs routinely receive and review data on selected aspects
of their patients' care
Figure 3 – Staff perspectives on the use of electronic health records and other electronic systems to
identify patients with complex health needs, monitor patient outcomes, document patients'
needs, develop care plans and determine clinical outcomes
Figure 4 – Staff perspectives on ease with which selected functions can be undertaken within their
practice's existing practice clinical management systems and/ or other IT
Volume A Evaluation data supplement:
volume 4 Evaluation adia supplement.
Table 31 CP routing in generaling information from content systems, paseline
Table 31 – Grs routinely receive and review data on selected aspects of patient care, baseline

Topics and tables/figures that address that topic

Table 59 – Difficulty in using practice clinical management system or ancillary systems to undertake selected tasks, baseline

Table 60 - Agreement with statements about the primary care team using electronic data, baseline

Figure 7 – Staff perspectives, by type of staff, on the use of electronic health records and other electronic systems to identify patients with complex health needs, monitor patient outcomes, document patients' needs, develop care plans and determine clinical outcomes, baseline: Active practices at 31 August 2019

Participation in quality improvement initiatives

Volume 2 Main report:

Table 14 - Practices' participation in the Practice Incentive Program (PIP)

Volume 4 Evaluation data supplement:

Table 33 – Practice Incentive Program (PIP) participation, baseline

Health Care Homes Assessment (HCH-A)

Volume 4 Evaluation data supplement:

Figure 1 – Distribution of reported HCH-A scores: Dimensions 1 to 5

Figure 2 – Distribution of reported HCH-A scores: Dimensions 6 to 8

Table 34 - Consensus score agreed for each item of the HCH-A, baseline

Table 35 – Number of people who participated in HCH-A, baseline

Table 36 - PHN practice facilitator assisted practice in the reaching consensus on HCH-A, baseline

Staff assessment of primary care team

Volume 2 Main report:

Figure 14 – Agreement with statements about the primary care team

Volume 4 Evaluation data supplement

Table 58 – Agreement with statements about the primary care team, baseline

Risk stratification

Volume 2 Main report:

Table 39 – Practice rating of the risk stratification software and associated processes

- Table 40 Assessment of how well the risk stratification tool (predictive risk model) identified patients suitable for enrolment in HCH
- Table 41 Staff who mainly did the HARP assessments
- Table 42 Assessment of whether patients mostly ended up in the right HCH tier
- Table 43 Usefulness of the HARP tool
- Table 44 Suggestions for improving the assignment of patients to tiers (including responses from withdrawn practices)
- Table 45 Other ways in which the risk stratification software and associated processes could be improved (including responses from withdrawn practices)

Volume 4 Evaluation data supplement

Table 37 - Practice focused on enrolling patients in HCH with specific chronic illnesses

- Table 38 Ease of use of the risk stratification software/ patient enrolment
- Table 39 Did the practice use the GP override function
- Table 40 Usefulness of the HARP tool/ My Health Record

Enrolment

Volume 2 Main report:

- Table 17 Main factors that practice/GP decided not to approach some of the patients flagged by the risk stratification tool (including responses from withdrawn practices)
- Table 18 Main reasons why patients approached to enrol in HCH opted not to (including responses from withdrawn practices)

Topics and tables/figures that address that topic
Table 19 – Rating of administrative processes for enrolling patients in HCH
Table 20 – Suggestions for improving the enrolment process (including responses from withdrawn
practices)
Volume 4 Evaluation data supplement
Table 41 – Percentage of patients approached to enroll in HCH who actually enrolled (including
responses from withdrawn practices)
Warking as a toget
Working as a ream
Volume 4 Evaluation data supplement:
rigule 6 – stall perspectives on working as a ream
Care planning and shared care planning
Volume 2 Main report:
Table 47 – Main ways that the practice shares care plans with clinicians outside the practice
involved in the care of the patient (multiple may apply)
Volume 4 Evaluation data supplement:
Table 42 – Did processes for shared care planning and review change from before HCH
Table 43 – Main ways in which shared care planning and review processes changed following HCH
implementation
Table 44 – Main ways that the practice shares care plans with HCH patients and their carers or
family (multiple may apply)
Table 45 – Main ways that the practice shares care plans with clinicians outside the practice
involved in the care of the patient (multiple may apply)
Table 46 – Sharea care planning software implemented by practice
Table 47 – Ease of Using My Health Record for sharing care plans with other clinicians outside the
procrice Table 49 - Bractice has a standardized teal for assessing level of activation for UCU patients
Figure 10 Staff perspectives on planning care for and with patients
rigore to – sign perspectives of planning care for and with patients
Coordination of care
Volume 4 Evaluation data supplement: Appendix 1:
Figure 11 – Staff perspectives on use of additional supportive services for patients
Figure 12 – Staff perspectives on communications with medical specialists
Figure 13 – Staff perspectives on processes following hospital discharge
Clinical processes and changes implemented during HCH
Volume 2 Main report:
Table 46 – Changes that are a focus during the HCH implementation
Volume 4 Evaluation data supplement:
Table 32 – Selected processes/systems in place, baseline
Table 49 – Processes for providing care to patients with chronic illnesses changed following HCH
implementation
Table 50 – Main ways in which processes for providing care to patients with chronic illnesses
changed following HCH implementation
Table 51 – Improvements in clinical care/chronic disease management that will be a focus during
HCH implementation
Figure 9 – Staff perspectives on aspects of communicating and working with patients
Staff experience
Volume 4 Evaluation data supplement:

Figure 14 – Staff responses to questions about their experience of their work

Topics and tables/figures that address that topic

Training

Volume 2 Main report:

Table 34 – Rating of the effectiveness of the HCH online training modules

Table 35 – Top ways in which the online training modules could be improved (including responses from withdrawn practices)

Volume 4 Evaluation data supplement:

Table 54 – Staff from the practice participated in training workshops organised by the PHN

PHN support (in addition to training)

Volume 2 Main report:

Table 29 - Rating of the effectiveness of PHN support and training

Table 30 – Top ways in which the support provided by the PHN practice facilitator could be improved

Volume 4 Evaluation data supplement:

Table 53 – A PHN practice facilitator helped the practice prepare for HCH and/or provided ongoing support for HCH implementation

Other topics

Volume 4 Evaluation data supplement:

Table 55 – Pharmacist who visits/works in the practice

Table 56 – Relationship does the pharmacist has with the practice

Table 57 – Other comments about implementing HCH in the practice (including responses from withdrawn practices)

Practice self-assessment using HCH-A

Practices initially used the Health Care Homes Assessment (HCH-A) tool to assess the extent to which they operate as an HCH. The recommended approach for applying the tool is for practice staff to undertake the assessment separately, and then discuss 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.

HCH-A results were received for 147 practices, but the data presented in this report are for the 118 practices that were participating in HCH as at 31 August 2019. Practices reported that 653 staff were involved in completing the assessment (an average of 5.5 per practice, see Appendix 1, Table 35). Across the practices, 185 GPs participated in the assessment, 160 nurses, 159 reception/administration staff, 92 practice managers, 12 Aboriginal health practitioners and 13 allied health staff.

Figure 1 and Figure 2 show the distributions of the HCH-A scores on each of the questions in the HCH-A tool (further summaries of the score can be found in Appendix 1, Table 34). For each question, scores are represented on a scale of 1 to 12. These are grouped into eight dimensions. Scores of 1 to 3 on any item reflect absent or minimal implementation of an element of the patient centred medical home. Scores of 10 to 12 reflect that most or all the critical aspects of the element are well established in the practice.

Overall, the median and mean self-assessment scores are in the range of 6 to 9. These suggest that overall, practices believe that they have many of the elements of a patient centred medical home in place, but there are still opportunities for improvement.

An item where practices generally assessed that they have only minimally implemented a patient centred medical home is measurement of patient-centred interactions (Dimension 6, item 26). For this item, practices scored themselves around 4 to 6, which represents that measurement of patient-centred interactions is 'accomplished through patient representation on boards and regularly soliciting patient input through surveys'. The goal for this item (scores 10 to 12) reflects that it 'is accomplished by getting regular and actionable input from patients and families on all care delivery issues, and incorporating their feedback in quality improvement activities'.

An item where practices generally assessed that they have most of the critical aspects of the element in place is item 18 Care plans (Dimension 5: Organised, evidenced-based care). Many practices scored themselves between 7 and 9, which indicates that care plans 'are developed collaboratively with patients (and their families and carers where applicable), and include self-management and clinical goals, but they are not routinely recorded or used to guide subsequent care'. The goal for this item (scores 10 to 12) is that care plans 'are developed collaboratively, by the patient (and their families and carers where applicable) and care team to include self-management and clinical management goals are routinely recorded, and guide patient care in the practice and across the health care neighbourhood'.

The self-assessment scores will be used in the evaluation to examine changes over the course of the HCH program. However, technical issues need to be considered to ensure these scores can be appropriately used in analysis. The raw scores do not reflect an interval scale. Therefore, taking means of scores is problematic. Adding up scores across questions to find a summary score at the dimension level is also problematic (e.g. one question may relate to a goal where it is more difficult to get higher scores as compared with others within the dimension). The scores represent the extent to which respondents agree that a practice can be described by a set of attributes included in the descriptors for the tool. This means that it is possible to use the data within a Rasch analysis to derive scores that could be analysed as interval scores. This is one of the approaches that will be taken in analysing the data and the level of change in the next stage of the evaluation. The other approach will be to treat the scores as ordinal data and examine the proportions of practices reporting increases (or decreases) in scores.

The scores reported in the self-assessment will be triangulated with other information, including analysis of the staff surveys, which will provide additional insights into staff perceptions of the practice, and assessments undertaken by the PHN practice facilitators.



Figure 1 – Distribution of reported HCH-A scores: Dimensions 1 to 5

Source: Practice survey Round 1. Notes: The box represents the range from the first quartile and the third quartile. This is where 50% of scores occurred. The vertical line crossing the middle of the box is the median score. The horizontal lines extending from the box (the 'whiskers') show the values up to quartile 1 minus 1.5 times the interquartile range (to the left of the box) and the values up to quartile 3 plus 1.5 times the interquartile range (to the right of the box). Points outside these are often considered outliers. For more values for these distributions see Appendix 3 (Table 34).





Source: Practice survey Round 1. Notes: See notes in Figure 1 for interpretation of the box plots. For more values for these distributions see Appendix 3 (Table 34).
Staff surveys

Practice staff were also surveyed in Round 1. Five-hundred and twenty-nine staff responded to the survey, including 100 GPs, 125 practice nurses/nurse practitioners, 131 receptionists, and 128 practices managers. Table 5 provides a guide to where various tables and figures derived from the survey have been presented in Volume 2. Further tables and figures are in Appendix 2 of this report.

Staff were asked to provide their views on various aspects of the operation of the practice relevant to the directions of the HCH program, but could select not to respond to questions that they felt they were not in a position to assess. The questions to which staff responded (and the tables and figures in Appendix 2 of this volume where the analysis of the responses are shown) are as follows:

- use of electronic health records and other electronic systems (Table 59; Table 60; Figure 7)
- working as a team (Table 58; Figure 8)
- communicating and working with patients (Figure 9)
- planning care with patients (Figure 10, Figure 11)
- communications with medical specialists (Figure 12)
- information flows following a patient's discharge from hospital (Figure 13)
- experiences of work and work environment (Figure 14).

PHN surveys

PHN surveys were conducted in Round 1. All 10 PHNs responded. The survey included questions on local governance, the approach to training and support and facilitation of their HCH practices, details of training workshops provided, estimates of the amount of support (in terms of contacts and time) provided for practices on average, the factors that contributed to effective facilitation, their assessment of the effectiveness of activities to support and develop facilitators, and the level of resourcing devoted to HCHs. Facilitators were also asked to assess each HCH using only the high-level dimensions of the HCH-A tool.

The largely qualitative responses to these surveys have been outlined in Volume 2. Below we summarise responses to questions on activities to support and develop facilitators' skills. Table 8 shows the assessment of the effectiveness of several of these activities. These were assessed for the facilitator roles in supporting practices to (a) get started with the HCH model, for example, setting up for patient enrolment, getting familiar with the risk stratification tool (RST) and (b) practice transformation, for example, identifying priorities for change, strengthening teamwork. PHNs considered the practice facilitator workshops and the coaching webinars to be more effective than the other activities. Mostly they considered the online training modules to be less effective. Overall, there was little difference in how effective these activities were in getting started versus ongoing transformation activities.

Activities to prepare and support for facilitators	How effective in preparing facilitations to supporting practices	Very effective	Somewhat effective	Limited effectiveness	Not effective
Practice facilitator	to get started with HCH	2	6	2	0
workshop 1 & 2 as a whole)	in practice transformation	2	6	2	0
HCH online training	to get started with HCH	0	4	5	1
modules	in practice transformation	0	3	6	1
Practice facilitator	to get started with HCH	2	5	3	0
	in practice transformation	2	6	1	1
Practice facilitator	to get started with HCH	0	5	4	1
support from National practice facilitator	in practice transformation	0	5	4	1
Practice facilitator	to get started with HCH	0	6	4	0
	in practice transformation	0	5	4	1

Table 8 – Responses (number of PHNs) to the effectiveness of activities to prepare and support facilitators in supporting practices

Source: PHN survey R1 March 2018

Responses to the PHN survey also identified changes to supports that would improve the development of skills and capabilities of practice facilitators. The most common included:

- More practical support. Practice facilitators thought that the webinars and coaching could have been more action and/ or solution-based, using practical examples from the Australian context and working through solutions to these.
- Provide face-to-face support/mentoring and on-the-ground training for PHN facilitators. Facilitators suggested individual PHN support, for example, through the appointment of a PHN liaison officer at the national level. This would help to focus training to PHNs based on the skills and experiences, where their practices are in terms of readiness and tailored to local issues (e.g. nature of population, rurality/ remoteness).
- Improved sharing of resources between PHNs and between practices. Facilitators thought that there could have been better mechanisms to share experiences and resources developed during the implementation. One suggestion was for increased face-to-face meeting opportunities.
- Practice facilitators having access to the various HCH software platforms (e.g. 'sandpit'), in advance of their implementation, so that they can learn to use them and be better equipped to help practices.

Practice facilitators identified additional topic areas that they thought were missing from the suite of training products or not given enough emphasis in those products. These included:

- The practice facilitation role.
- Working as a team for practice facilitators ("then we can understand... some of the struggles that [practices] are having with that" PHN 5, interview, R1].
- Practical training, particularly having "*dummy access*" to the RST and other software [PHN 6, interview, R1] or a "*sandpit*" [PHN 10, survey, R1] that facilitators could experiment with before they went into practices to help them with applying the tools.
- Change management taught "in a practical way. Not out of a textbook" [PHN 6, interview, R1].
- How alternatives to face-to-face appointments might work (e.g. texting, teleconferencing, shared medical appointments).
- Motivational interviewing.
- Triaging.
- Building and managing a community of practice.
- Building a health care neighbourhood.

Patient surveys

Methods

Patients are being surveys using computer assisted telephone interviews (CATI). Health Policy Analysis subcontracted The Social Research Centre (a business unit of the Australian National University) to administer the surveys. The surveys are organised into three waves, as shown in Table 9.

Wave	Time frame	Target
Wave 1	December 2017 to March 2019	2,000 patients.
Wave 2	December 2019 to March 2020	Patients interviewed in Wave 1 plus an additional 500 patients referred to a community pharmacy as part of HCH.
Wave 3	December 2020 to March 2021	Patients interviewed in waves 1 and 2.

Table 9 – Patient survey 'waves', time frames and targets

This chapter focusses on the results of the Wave 1 survey. The survey aimed to profile patients and their experience of primary health care at the time of enrolment into the HCH program (or shortly after). Subsequent interviews will be used to track changes that have occurred since enrolment. The content of the survey was described in Volume 3, and the complete survey is in the Evaluation plan (Health Policy Analysis, 2019).

A weighted random sample of patients was selected by Health Policy Analysis from patients who had recently enrolled with the HCH program and who had agreed to be contacted to participate in the evaluation. Practices provided contact details for these patients through a specifically designed secure portal established by Health Policy Analysis. Health Policy Analysis regularly drew samples from the patients registered in this system – initially approximately every month then, as enrolments increased, every fortnight. Only patients enrolled in the most recent period of time were included in each sample. The sampling approach aimed to capture a sufficient number of patients from each practice to be able to develop practice level estimates for relevant measures. A maximum number of patients from any practice was also established (100). The sampling approach aimed to ensure patients surveyed were spread across the enrolment period. As enrolment occurred at different rates between practices, the sampling approach needed to be recalibrated over time. The result is a complex survey design. In presenting results in the final evaluation report, estimates will be developed that account for this complex design. However, for this report we have presented estimates for the whole sample without adjustment.

Once contact details for patients were received, The Social Research Centre followed a protocol developed with Health Policy Analysis, which reflects best practice in conducting surveys (Dillman, Smyth, & Christian, 2014):

 Within seven days of receiving contact details, The Social Research Centre sent enrolees a primary approach letter with a non-contingent incentive of \$10 (in the form of a card). Patients could access the voucher regardless of whether or not they agreed to participate in the survey. If only an email address was available, an approach letter was emailed with an electronic voucher.

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- 2. Telephone contact was then made at least seven days after the initial approach to allow for delivery of the letter.
- 3. An SMS was sent to enrolees with a valid mobile number prior to the initial call to reduce non-contacts.
- 4. If an enrolee didn't answer, The Social Research Centre continued to call up to eight times. If the enrolee or a family member answered and hung up or the enrolee declined to participate, then they were not contacted further.
- 5. When contacted the interviewee could also choose: (a) not to participate in the survey at the time they received a telephone call from The Social Research Centre interviewer, (b) to stop the interview at any time and/ or (c) not answer any questions.
- 6. The Social Research Centre interviewers followed a script to ensure the same questions were asked of all the participants, subject to the conditional statements within the survey. The interviewee asked the patient which language they would prefer the interview to be conducted in. The interviewer also gave the patient the opportunity to reschedule the interview for a later time. The interviews took 15 to 20 minutes.
- 7. Respondents were sent a thank you email (or letter if no email address), reminding them that they will be contacted again in late 2019, and allowing an opportunity to opt-out if they didn't wish to be re-surveyed.

Results

Details of 3,125 patients were sent to The Social Research Centre. From these, 2,018 patients completed a survey, which is a crude response rate of 64.6%. For 99 patients, contact information was classified as unusable. If these are excluded from the denominator, the response rate is 66.7%. For a further 551 patients (17.6%), contact could not be made with the patient. Another 225 patients (7.2%) were contacted but did not proceed for the reasons described in Table 10. These included that the patient was frail or ill (2.4%). A further 7.4% of patients refused to participate in the survey or withdrew as they were being surveyed.

Table 10 – Summary of patient disposition in relation to participation in HCH sur	vey,
December 2017 – March 2019	

Responses		Number of patients (n = 3,125)	Percentage of total
Interviews cor	npleted	2,018	64.6
Unusable	Deceased	5	0.2
sample	Named person not known	32	1.0
	Not a residential number	6	0.2
	Incoming call restriction	1	0.0
	Number disconnected	55	1.8
	Total	99	3.2
Non	Answering machine	347	11.1
contacts	Answering machine message left	12	0.4

	Responses	Number of patients (n = 3,125)	Percentage of total
	Engaged	19	0.6
	No answer	173	5.5
	Total	551	17.6
Other	Re-appointment not completed	67	2.1
contacts	Away for duration	30	1.0
	Claims to have done survey	4	0.1
	Language difficulty	25	0.8
	No longer part of HCH	22	0.7
	Too frail / ill-health	76	2.4
	Intoxicated respondent	1	0.0
	Total other contacts	225	7.2
Refusal	Incoming call solution hard refusal	42	1.3
	Household refusal	47	1.5
	Respondent refusal	112	3.6
	Midway termination	31	1.0
	Total refusals	232	7.4

Source: The Social Research Centre.

Summary tables from the survey are presented in Appendix 3. These provide cross tabulations of responses by the tier of the patient and practice size (Part A), and practice ownership and geographic remoteness (Part B). In Table 11, key socio-demographic characteristics of patients are presented along with how these vary by the tier to which the patient was assigned. Key points to note include:

- The age and sex distribution of patients who completed the survey were similar to the population of HCH patients (although only patients aged 18 years and over were approached for the survey). Almost one third of the patients who agreed to participate in the survey were aged 65 to 74 years and there was a fairly even split of participants by gender (males 45.6%, females 54.4%).
- 3.3% of patients interviewed identified as Aboriginal or Torres Strait Islander, even though the sample did not include patients enrolled by Aboriginal Community Controlled Health Services (ACCHS) in the Northern Territory.
- 68.3% of respondents were born in Australia, 14.4% in the United Kingdom and 17.2% in other countries.
- Respondents were offered the opportunity to conduct the interview in several languages as an alternative to English. The vast majority (99%) were conducted in English but 18 were conducted in other languages (Maltese, Tagalog, Hindi, Filipino, French, Punjabi, Croatian, Romanian and Polish).
- 5.6% of patients had the survey completed by proxy and 3.7% needed help to answer some of the questions.

• The majority of respondents (46.3%) were living in a household consisting of a couple only. A further 24.1% of respondents were living alone. There was a statistically significant difference in household composition between tiers. Specifically, a higher proportion of patients in Tier 1 and Tier 2 were living in couple only households, and a higher proportion of Tier 3 patients were living alone.

Table 11 – Other socio-demographic characteristics of HCH patients responding to the
patient survey

Channadaridia	Total	Tier			
Characteristic	Iotal	Tier 1	Tier 2	Tier 3	
Sex					
Female	1,083 (54.4%)	246 (55.8%)	572 (55.5%)	239 (51.1%)	
Male	908 (45.6%)	195 (44.2%)	459 (44.5%)	229 (48.9%)	
Age group					
00-24	18 (0.9%)	1 (0.2%)	8 (0.8%)	9 (1.9%)	
25-44	128 (6.4%)	26 (5.9%)	67 (6.5%)	33 (7.0%)	
45-64	551 (27.4%)	124 (28.2%)	270 (26.2%)	141 (29.9%)	
65-74	658 (32.7%)	156 (35.5%)	364 (35.3%)	112 (23.7%)	
75-84	513 (25.5%)	112 (25.5%)	256 (24.9%)	128 (27.1%)	
85+	144 (7.2%)	21 (4.8%)	65 (6.3%)	49 (10.4%)	
Indigenous status					
Aboriginal or Torres Strait Islander	66 (3.3%)	8 (1.8%)	34 (3.3%)	24 (5.1%)	
Not Aboriginal or Torres Strait Islander	1,936 (95.9%)	432 (98.2%)	990 (96.7%)	444 (94.9%)	
Don't know/ Refused	16 (0.8%)				
Country of birth					
Australia	1,379 (68.3%)	307 (69.6%)	686 (66.5%)	335 (71.0%)	
United Kingdom	291 (14.4%)	65 (14.7%)	158 (15.3%)	57 (12.1%)	
India	43 (2.1%)	7 (1.6%)	26 (2.5%)	9 (1.9%)	
New Zealand	31 (1.5%)	12 (2.7%)	13 (1.3%)	6 (1.3%)	
Italy	18 (0.9%)	4 (0.9%)	8 (0.8%)	6 (1.3%)	
Greece	28 (1.4%)	3 (0.7%)	20 (1.9%)	5 (1.1%)	
Ireland	7 (0.3%)		5 (0.5%)	1 (0.2%)	
China	2 (0.1%)		1 (0.1%)	1 (0.2%)	
Other	216 (10.7%)	43 (9.8%)	115 (11.1%)	52 (11.0%)	
Refused	3 (0.1%)				
Household composition					
Person living alone	486 (24.1%)	77 (17.4%)	248 (24.0%)	138 (29.2%)	
Couple only	934 (46.3%)	258 (58.4%)	494 (47.8%)	157 (33.3%)	
Couple, non-dependent children	168 (8.3%)	30 (6.8%)	90 (8.7%)	43 (9.1%)	
Couple, dependent children	148 (7.3%)	39 (8.8%)	75 (7.3%)	25 (5.3%)	

Chavastovistis	Total	Tier			
Charactensiic	Τοίαι	Tier 1	Tier 2	Tier 3	
Single parent, non-dependent children	85 (4.2%)	14 (3.2%)	28 (2.7%)	39 (8.3%)	
Single parent, dependent children	36 (1.8%)	2 (0.5%)	22 (2.1%)	12 (2.5%)	
Other household type	161 (8.0%)	22 (5.0%)	77 (7.4%)	58 (12.3%)	
Highest level of education					
Year 9 or below	427 (21.2%)	77 (17.6%)	215 (21.0%)	124 (26.7%)	
Year 10 or equivalent	326 (16.2%)	75 (17.1%)	171 (16.7%)	69 (14.8%)	
Year 11 or equivalent	112 (5.6%)	22 (5.0%)	65 (6.4%)	22 (4.7%)	
Year 12 or equivalent	244 (12.1%)	59 (13.5%)	116 (11.4%)	60 (12.9%)	
Certificate I to IV/Trade certificate	416 (20.6%)	90 (20.5%)	208 (20.4%)	100 (21.5%)	
Advanced diploma/Diploma	167 (8.3%)	43 (9.8%)	87 (8.5%)	29 (6.2%)	
Bachelor Degree	187 (9.3%)	50 (11.4%)	96 (9.4%)	36 (7.7%)	
Post-Graduate Degree	66 (3.3%)	16 (3.7%)	36 (3.5%)	9 (1.9%)	
Other	50 (2.5%)	6 (1.4%)	28 (2.7%)	16 (3.4%)	
Refused	23 (1.1%)				

Sources: CATI surveys conducted by The Social Research Centre between December 2017 and March 2019.

Tables and charts showing survey data are presented in Chapter 5 of Volume 2. Other chapters for Volume 2 also draw on data from the patient surveys. Additional tables are in Appendix 3 of this volume. These present the responses by patients' tier and by selected practice characteristics (size, ownership and geographic remoteness).

An aim of HCH is to encourage patients to become more informed about their health and, with the help of their practice, to take a more active role in managing it. 'Patient activation' is the term used to describe this concept. A validated tool measuring this is the Patient Activation Measure (PAM) (Hibbard, Mahoney, Stockard, & Tusler, 2005). Survey respondents completed the 13-item version of PAM. Valid responses to each item are the patients' level of agreement with a statement (they can strongly disagree, disagree, agree, or strongly agree). Using the Rasch approach that underpinned the development of the PAM, patients' responses were transformed to a score ranging from 0 to 100. The score measures the psychometric properties of a patient's skills, knowledge, and confidence for managing their health. The score out of 100 can then be used to categorise each patient as:

- disengaged and overwhelmed
- becoming aware but still struggling
- taking action
- maintaining behaviours
- pushing further.

Table 67 and Table 77 in Appendix 3 present the PAM results for the first wave of patient surveys. These are the baseline measures and changes in the wave 2 and 3 surveys will be monitored.

The EQ-5D-5L is a health-related quality of life measure which can be used to estimate a respondent's health related quality of life (Devlin & Krabbe, 2013; Herdman et al., 2011). It is also used to estimate quality adjusted life years when comparing health interventions. The

EQ-5D-5L has five basic questions about five key dimensions of a patient's health related quality of life at the time of interview. The dimensions include: mobility, self-care, usual activities, pain and discomfort, and anxiety and depression. Responses reflect the level of difficulty patients experience with these dimensions. Responses to the five questions are mapped to a utility score ranging from just below zero to one, where scores at zero or below represent the worst health related quality of life and a score of one represents the best health related quality of life. Table 66 and Table 76 in Appendix 3 present the results related to the EQ-5D-5L for the wave 1 of the patient surveys.

The PACIC is a validated tool that was designed to assess the implementation of the chronic care model from the patient perspective (Gibbons et al., 2017; Glasgow et al., 2005; Schmittdiel et al., 2008). It focuses on the patient's perspective of the receipt of patient-centred care and self-management behaviours. The 12-item version of the tool was used in the evaluation, and the possible responses to each item are on a five-point scale from 1 (none of the time) to 5 (always). There are several domains for PACIC. Responses for each question were assigned a score of 1-5, and then averaged across the relevant dimension. A total average score was also calculated. In the next evaluation report, psychometric techniques will be applied to the responses. Table 69 and Table 79 in Appendix 3 present the results related to the PACIC for the wave 1 of the patient surveys.

Comparisons of data sources

The patient survey provides an opportunity to explore the alignment of estimates with other data sources. Table 27 in Volume 2 compares results from the patient survey and practice extracts on the numbers and types of diagnoses reported. Table 12 compares the number of GP consultations/attendance from these two sources.

Frequency of attendances over the last 6 months	Patient survey ¹	Practice extracts ²
Less than 5	47.9%	38.6%
5 to 9	30.2%	37.7%
10 or more	22.0%	23.6%
Total	100.0%	100.0%

Table 12 – Comparison of patient reported number of GP consultations and practice extract data

Source: ¹CATI surveys conducted by The Social Research Centre between December 2017 and March 2019; ²See Table 22 for sources. Excludes unknown or invalid responses.

Practice extracts

Extracts from practice clinical management systems were provided for the HCH evaluation.

Practice extracts will be used to evaluate changes in the quality of chronic illness care provided for HCH patients (e.g. recording of HbA1c tests in patients with diabetes) and patient health outcomes (e.g. HbA1c results). Practice data extracts will be used in subsequent reports to compare outcomes in HCH patients with those of non-enrolled counterparts in the same practice and in non-HCH practices.

This Chapter describes the sources of the practice extracts, how the data are being collated for the evaluation, the patient information that is extracted, and how the capture of patient information varies between data sources. It also examines the extent to which practices flag HCH patients in their clinical management systems.

Key points

- Practice data extracts are being provided for the evaluation from several sources: Pen CS, Population Level Analysis and Reporting (POLAR), National Prescribing Service (NPS) MedicineInsight and separate extracts from two corporate groups. For the baseline period (October 2017 to June 2019), practice extracts were received from 108 HCH practices (including 12 ACCHS) as at 31 July 2019 and 417 non-HCH comparator practices as at 31 August 2019.
- Practice extracts from the three data sources contain information about patient demographic characteristics, service encounters, diagnoses, clinical observations, pathology results, prescriptions and MBS billing. However, there are variations between the sources and in how these are subsequently processed, which could lead to differences in the conditions or clinical measures observed.
- Within the same data source, there are also variations between practices in the availability of data items (e.g. some MBS billing, patient conditions and observations are absent from entire extracts provided by several practices).
- As at 30 June 2019, there were discrepancies between the number of HCH patients identified in practice data extracts and the number of enrolled patients registered in HPOS. However, the recording of HCH enrolments in practice clinical management systems has been improving over time.
- The top five health conditions flagged in practice extracts for HCH patients were high blood pressure (49.4%), high cholesterol (39.0%), type 2 diabetes (30.1%), osteoarthritis (25.5%) and depression (22.3%).
- In the 12 months between July 2018 and June 2019, the proportion of HCH patients who had clinical assessments and measurements recorded was 90.6% for blood pressure, 85.3% for pulse, 83.5% for kidney functioning, 81.0% for body weight, 76.8% for cholesterol levels, 31.9% for waist circumference and 6.5% for physical activity. The recording of smoking status and amount of alcohol consumption was 68.8% and 60.7% of patients, respectively. In HCH patients with diabetes, 92.2% had a HbA1c test recorded, and in patients with asthma or COPD, 5.7% had a spirometry test recorded.

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• In the same 12 months, on average, HCH patients saw a GP in the practice 13.41 times (standard deviation 9.71, median 11 times).

Sources of practice extracts

At 31 August 2019, practice extracts for the evaluation were obtained from three sources: Pen CS, POLAR, and NPS MedicineInsight. At the start of the evaluation, the Department and the evaluation consortium explored options for obtaining extracts from practice clinical management systems for the evaluation. The approach in obtaining practice data was guided by three criteria:

- Leveraging existing arrangements for data sharing. This was important so as not to introduce new processes for practices, and to use existing licences for data extraction where available so as not to add cost.
- Creating infrastructure or processes that would have value beyond the evaluation.
- Selecting an approach that is compatible with most of the clinical management systems used by practices.

A survey of PHNs was conducted early in 2017 by the Department and HPA to explore the extent to which the practices were already sharing their data with the PHNs. Most of the PHNs were using Pen CS software for their extracts, covering the licensing costs for their practices. Therefore, Pen CS arrangements were leveraged for the evaluation.

Within South East Melbourne PHN, POLAR, developed by Outcome Health, was being used to share data between GP practices and the PHN. The evaluation therefore leveraged the data extracted through POLAR for HCH practices within this PHN.

NPS MedicineInsight is a quality improvement program developed and managed by NPS MedicineWise, with membership of approximately 600 general practices. The initial exploration indicated that about 25 practices participating in MedicineInsight were also participating in HCH. The Department of Health negotiated with NPS to use MedicineInsight data as a source for HCH and comparator practices. NPS obtained consent from member practices for their data to be used for the HCH evaluation. In the initial MedicineInsight data extract delivered in September 2018, there were three HCH practices. In the second extract delivered in August 2019, there were four HCH practices.

The NT ACCHS agreed for their data related to HCH patients to be extracted for the evaluation. All ACCHS were provided with instructions on how to do this. ACCHS used the Pen CS platform to supply data directly to the evaluators.

As at 31 July 2019, the evaluation team received extracts from 108 HCH practices (Figure 3), through either Pen CS (n=85 non-ACCHS practices and n=12 ACCHS), POLAR (n=11) or NPS MedicineInsight (n=4), noting that the four MedicineInsight HCH practices also supplied data via Pen CS. Practice data extracts were not available for 24 HCH practices. The latest NPS MedicineInsight extract, received by 31 August 2019 also included 417 non-HCH practices.



Figure 3 – Data sources and numbers of practices providing extracts for the evaluation

Pen CS and POLAR data were received 31 July 2019 and NPS MedicineInsight data were received on 31 August 2019. ¹Data from ACCHS relate to HCH patients only; ²The four HCH practices that supplied data via MedicineInsight also supplied data through Pen CS.

Pen CS extracts

The Pen CS data extraction software captures a snap-shot of a patient's data from the practice clinical information system on a monthly basis. At the time of the extraction, information from the patients' most recent record is included. For example, if a patient had three GP visits within a data extraction period and had blood pressure measured and recorded in each visit, only the most recent blood pressure measurement is included in the data extract. If a patient did not have any contact with the GP within the current extract period, the data included in the extract reflects the last observed record (i.e. the last recorded blood pressure measurement). For this reason, a single recorded value (e.g. blood pressure, HbA1c result, smoking status) may be duplicated across multiple snap-shot extracts, requiring steps to resolve the duplication.

In addition to the extraction of raw information (e.g. patient age, systolic and diastolic blood pressure), Pen CS extraction software derives a range of indicators, such as whether a patient condition is active, and whether a clinical observation or a pathology test has been completed. The software also calculates the number of times that a clinician in the practice has used the practice clinical information system during a defined period. Pen CS software also identifies whether a patient meets criteria for being a 'practice active patient' at the time of the extraction.

The Pen CS extracts are transferred to a secure server managed by Health Policy Analysis. Each extract is processed to remove duplicate records across data extracts and combined into longitudinal tables. The longitudinal tables are updated quarterly and transferred to the Secure Unified Research Environment (SURE) environment for data analysis.

POLAR extracts

The POLAR software (Outcome Health) extracts data from the practice clinical information systems monthly. The software retrieves patient data recorded in the clinical information system within the extraction period. For example, if a patient had three GP visits during the period and had blood pressure measured and recorded in each visit, each of the three measurements would be included in the data extract. If a patient did not have any contact

with the GP within the current extract interval, then a record would not be included. For some information, such as smoking status and alcohol use, the patient's last recorded value is retrieved.

In addition to the retrieval of raw information (e.g. patient age, systolic and diastolic blood pressure), POLAR also derives variables, such as mapping of patient diagnoses to the Systematized Nomenclature of Medicine-Clinical Terms (SNOMED-CT). The SNOMED-CT coded textual descriptions are provided in the data extracts.

The POLAR data are delivered monthly to South East Melbourne PHN, who then transfer the data directly into the SURE environment for analysis. Within the SURE environment, the monthly extracts are combined to create longitudinal tables.

NPS MedicineInsight extracts

The NPS MedicineInsight software regularly extracts data from practice clinical information systems. The software retrieves patient data recorded in the clinical information system during the period of extraction. For example, if a patient had three GP visits during the period and had blood pressure measured and recorded in each visit, each of the three measurements would be included in the data extract. If a patient did not have any contact with the GP within the current extract interval, then no patient records would be included. For some information, such as smoking status and alcohol use, the patient's last recorded value is retrieved.

In addition to the extraction of raw information (e.g. patient age, systolic and diastolic blood pressure), MedicineInsight also derives a range of variables, such as multiple patient condition flags, and a flag for whether a patient meets criteria for being a 'practice active patient' at the time of extraction.

The initial data extract from NPS MedicineInsight was delivered in September 2018. Subsequently, NPS MedicineWise advised that complete longitudinal data extracts, rather than updates, would facilitate better identification of individual patients over time. In June 2019 a revised agreement between the Department and NPS MedicineWise was executed. A second extract was delivered in August 2019, covering December 2015 to June 2019.

Patient information within practice extracts

All three data sources contain patient demographic information, clinical encounters, diagnoses, clinical observations, pathology results, prescriptions and MBS billing (Table 13).

Source of practice data extracts ¹				
Pen CS	POLAR	MedicineInsight		
\checkmark	\checkmark	\checkmark		
\checkmark	\checkmark	\checkmark		
\checkmark	\checkmark	\checkmark		
\checkmark	\checkmark	\checkmark		
\checkmark	\checkmark	\checkmark		
\checkmark	\checkmark	\checkmark		
\checkmark	\checkmark	\checkmark		
	\checkmark			
	Source Pen CS √ √ √ √ √ √	Source of practice datePen CSPOLARVV		

Table 13 – Type of patient information included within practice extracts

¹A tick indicates table(s) relating to patient information are present in the practice extract data.

Patient demographics include age and sex of the patient as well as pensioner, Aboriginal and Torres Strait Islander and deceased status. No personally identifiable information (e.g. name, date of birth, postcode) is included in any of the extracts.

Clinical encounter, in a general practice setting, refers to an interaction between a patient and the service. However, there is no consistent definition of an encounter for general practice electronic health data in Australia (NPS MedicineWise, 2018). An encounter record may occur as a result of patient clinical consultation or administrative process, such as reviewing or updating a patient record. Clinical encounter data includes (where available) information on the date of the encounter, a scrambled provider ID, specialty of a provider, type of encounter and reason for encounter.

Diagnoses can be entered into the practice clinical information system through several approaches. A clinician can select a relevant term from a structured and pre-coded system, such as 'Docle' in Medical Director or 'Pyefinch' in Best Practice. A clinician can also describe a patient's diagnosis in the free-text field of the diagnosis screen or reason for visit, or reason for prescription (NPS MedicineWise, 2018). Progress notes may contain further diagnostic information but these are not extracted as they may contain confidential information.

Clinical observations refer to physiologic measurements at the time of the encounter, such as blood pressure, heart rate, height, weight and waist circumference. There are also assessments of lifestyle (e.g. smoking, alcohol, physical activity), examination of mental health and hearing, and screening for cardiovascular and diabetes risk.

Pathology results are the results of investigations, such as blood sugar, HbA1c, cholesterol and tests for kidney functioning. Pathology results ordered by the practice or elsewhere (e.g. hospitals, outpatient clinics or specialists) may be manually entered into the practice systems or transferred electronically from pathology labs. Scanned or PDF copies of pathology reports are not extracted (NPS MedicineWise, 2018; Pen CS, 2019).

Prescription data contain medicines prescribed by a provider and/or scripts printed out from the practice system. Over the counter medicines and those prescribed by providers elsewhere are only included if manually entered into the practice system (NPS MedicineWise, 2018).

MBS billing data contain billing claims from the practice for services provided to the patient. The data includes the MBS item number that was billed.

A table containing information about the date (year and month) when a **shared care plan** was created is available through POLAR, but not through Pen CS or MedicineInsight.

All data extracts contain unique IDs for the practice and patients. Currently, it is not possible for the data extraction software to identify a patient who visited two or more practices (NPS MedicineWise, 2018). Neither is it possible to identify patients whose records were extracted by different software. Therefore, data for each patient was analysed within the practice and within the data source. However, for the HCH practices it is possible to identify the practices whose data were extracted by two extraction tools (e.g. by both Pen CS and MedicineInsight), using the practice name.

Variation in capture of patient information

Practice data extracts were examined to explore the consistency of patient information between data sources and between practices. Where variation in data capture was observed (e.g. when extracts from a practice did not include a table such as MBS billing, an observation such as pulse measurement or a patient condition such as bipolar, schizophrenia), clarification was sought from Pen CS, South East Melbourne PHN (for the POLAR extracts) and NPS MedicineInsight.

It is recognised that the capture of patient data is dependent on several factors, including:

- completeness and quality of data in the source practice clinical management system
- version and compatibility of the practices' clinical and billing systems
- policies and procedures of the extraction, manipulation and provision of data from the different providers
- licence coverage of the practice for the data extraction software
- version and compatibility of the extraction software with the practice systems.

Practices may occasionally experience technical issues in connecting to billing software, resulting in a temporary lack of billing data in the extracts.

Demographic information

Patient age, gender, Indigenous status and pension status are available across all three data sources. While Pen CS and POLAR data are extracted for patients of all ages, MedicineInsight data are only extracted for patients aged 15 years and older. In the Pen CS data, patient geographic location was mapped to Statistical Area Level 2. In the MedicineInsight data, patient geographic location was mapped to categories of the Australian Statistical Geography Standard Remoteness Area and deciles of Socio-Economic Indexes for Areas. POLAR data extracts do not include information on patient geographical location.

Patient observation and pathology test information

The extraction and availability of data items relating to patient clinical observations and pathology tests varies among the data sources. Pen CS extraction software derives a single variable to represent each type of clinical observation or pathology test (e.g. microalbumin creatine ratio, spirometry). Derived variables for measurement of pulse, spirometry, physical activity and amount of alcohol consumption were absent from the entire Pen CS extracts provided by several practices. With POLAR and NPS MedicineInsight extracts, information about patient observations and pathology tests are extracted as they are recorded. Thus a test for microalbumin creatine ratio, for example, could have different labels such as 'albumin/creatinine' or 'albumin/creatine ratio (ACR)'. While Pen CS data contain information about physical activity, and dates of smoking and alcohol consumption reviews, such information is not included in POLAR or NPS MedicineInsight extracts.

Prescription medicine information

The three data sources have different approaches to the extraction and presentation of prescription data. Within Pen CS, medicines in the current medications list are mapped to categories (e.g. 'ACE inhibitors', 'beta blockers') and sub-categories (e.g. 'beta-blockers

antihypertensives' and 'beta-blockers for myocardial infarction') (Pen CS, 2019). Pen CS has recently extracted medicine names (generic and brand names) from practices that use Medical Director, Best Practice or Zedmed. The POLAR data provided for the evaluation contain only generic and brand names of prescribed medicines. NPS MedicineInsight data include details of prescribed medicines, including names (generic and brand names), strength, dose, form, quantity, route of administration and repeat status.

MBS billing data

The process of extracting MBS billing data is supported when the practice uses integrated clinical and practice management software from the same vendor, and the billing system is compatible with the data extraction software. When a practice changes clinical and/or billing software, this can affect the completeness of billing data over time. Extracts provided by several Pen CS, POLAR and NPS MedicineInsight practices do not contain MBS billing data for the entire time period.

Patient condition flags

Pen CS software extracts patient diagnosis information that is recorded in the pre-coded system embedded in the GP practice clinical systems (e.g. 'Docle' in Medical Director or 'Pyefinch' in Best Practice). The extracted information is then mapped to more than 80 categories. Chronic conditions (e.g. diabetes, chronic renal failure, COPD) are classified as 'active' even if they were flagged as inactive in the practice clinical system. Conditions such as acute renal failure, asthma and cancer are categorised as 'active' only if they were flagged as active within the practice clinical management system (Pen CS, 2019).

Within POLAR, pre-coded and free-text description of diagnoses are extracted from the practice clinical management system and mapped to SNOMED-CT (Outcome Health, 2019). The POLAR extract includes a single field containing SNOMED-CT concept textual descriptions (rather than the SNOMED-CT ID codes) and another field indicating whether the diagnosis is active or inactive. Because patient condition flags similar to those created by Pen CS and NPS MedicineInsight were not readily available in POLAR extracts, patient condition flags were created by the Centre for Big Data Research in Health based on the SNOMED-CT textual descriptions (Appendix 6).

NPS MedicineInsight extracts both pre-coded diagnoses and free-text fields (description of diagnosis, reasons for encounter and reasons for prescription). Using this information, NPS MedicineInsight creates flags for more than 60 different conditions. Both free-text fields and derived patient condition flags are provided for the evaluation (NPS MedicineWise, 2018).

The predictive risk model (PRM) that is part of the risk stratification tool (RST) that practices use was reviewed to determine whether patient conditions listed in the PRM could be identified using derived patient condition flags in Pen CS, POLAR and MedicineInsight data. As presented in Table 14, many PRM conditions could be identified from practice extract data, but this varied among sources. Several PRM conditions, particularly conditions of the digestive system, are not captured by patient condition flags in the extracts.

Table 14 – Practice data extract capture of patient conditions contributing to the HCH predictive risk model (PRM)

o ""		Source	of practice data extract ¹	
Condition group	Condition	Pen CS	POLAR	MedicineInsight
	Asthma	\checkmark	\checkmark	\checkmark
Respiratory	Chronic obstructive pulmonary disease (COPD)	\checkmark	\checkmark	N
Atrial fibrillation	Atrial fibrillation	\checkmark		\checkmark
	Coronary heart disease	\checkmark		\checkmark
	Stroke	\checkmark		\checkmark
Cardiovascular	Transient ischaemic attack	\checkmark		\checkmark
	Congestive heart failure			\checkmark
	Rheumatic heart disease			\checkmark
Osteoarthritis	Osteoarthritis	\checkmark		\checkmark
Osteoporosis	Osteoporosis	\checkmark		\checkmark
Rheumatoid arthritis	Rheumatoid arthritis			\checkmark
	Depression	\checkmark		\checkmark
	Anxiety	\checkmark		\checkmark
	Bipolar disorder	\checkmark		\checkmark
Mental health	Schizophrenia	\checkmark		\checkmark
	Dementia	\checkmark		\checkmark
	Learning difficulties			
Cancer	Cancer	Any	Specific	Any
	Crohn's disease		\checkmark	
	Ulcerative colitis		\checkmark	\checkmark
	Coeliac disease	\checkmark	\checkmark	
Digestive	Steatorrhea			
	Malabsorption syndrome		\checkmark	
	Chronic liver disease		\checkmark	\checkmark
	Pancreatitis		\checkmark	
Hypertension	Hypertension	\checkmark	\checkmark	ν
	Hyperlipidaemia	\checkmark	\checkmark	ν
Blood fats	Hypercholesterolaemia		\checkmark	\checkmark
	Hypertriglyceridemia		\checkmark	ν
Chronic kidney	Chronic kidney disease	\checkmark	\checkmark	ν
Diabetes type I	Diabetes type I	\checkmark		ν
Diabetes type 2	Diabetes type 2	\checkmark		ν
Venous thromboembolism	Venous thromboembolism		V	√
Other	Falls		\checkmark	
	Epilepsy			

¹A tick indicates a patient with a condition could be identified from the practice extract data based on derived patient condition flags. See Appendix 6 for the SNOMED-CT concept textual descriptions relating to POLAR data.

Between-source variations may lead to differential identification of patients with a condition, which is likely relevant for the comparisons of evaluation outcomes between enrolled patients and their counterparts in non-HCH comparator practices. To understand the likely implications, we estimated prevalence of 21 conditions that are part of the PRM for HCH and commonly identifiable across the three data sources (Table 16). The analysis was conducted

in cohorts of 'practice active patients' identified from the three data sources, regardless of their HCH enrolment. In this analysis, ACCHS were not included because Pen CS flags for patient mental health conditions, atrial fibrillation and cancer are absent for most ACCHS.

According to the Royal Australian College of General Practitioners, a 'practice active patient' is defined as "a patient who has attended the practice/service three or more times in the past 2 years" (Royal Australian College of General Practitioners, 2017). In conversations with NPS MedicineWise, it was realised that defining a GP consultation using information from the practice 'encounter' table would be challenging, because an encounter record may be generated for an administrative task (e.g. reviewing or updating a patient's contact details) and multiple encounter records relating to a single GP visit can be generated in a day. Hence, slightly different approaches have been used to flag a patient as 'practice active patient' at the time of extraction.

'Practice active patient'		
Pen CS	MedicineInsight	POLAR
Pen CS A patient who had three or more progress notes recorded in two years. This flag was provided for evaluation	MedicineInsight A patient who had encounters on at least three days in the last two years, who was marked as 'active' and not marked as 'deceased' in the practice clinical management system.	POLAR A 'practice active patient' indicator was not included in the data extracts provided for the evaluation. The Centre for Big Data Research in Health identified patients who had at least three different dates
	Inis flag was provided for evaluation.	recorded as date of encounter, observation, pathology test, prescription or MBS billing, noting that POLAR data were available for 21 months (from October 2017 to June 2019) and not two full years.

Table 15 – Practice active patient definition by extraction software

As the MedicineInsight data are provided for patients aged 15 years and older, we similarly restricted the age of patients in the Pen CS and POLAR data for comparison with the MedicineInsight data. As seen in Table 16, the prevalence of most conditions was higher among the active patient cohort identified in the NPS MedicineInsight source than the prevalence identified in the Pen CS and POLAR cohorts.

	Patients of all ages Patients ages 15 years and close						
	Patients of	all ages	Patients	rs and older			
Measure	Pen CS	POLAR	Pen CS	POLAR	Medicine Insight		
Number of 'practice active patients' (n) ²	526,513	58,440	425,787	48,730	1,700,590		
Prevalence (%)							
Asthma	8.5	9.9	8.6	10.1	13.9		
COPD	1.8	1.6	2.3	1.9	3.7		
Atrial fibrillation	1.4	1.6	1.8	1.9	3.0		
Coronary heart disease	2.5	1.7	3.1	2.0	5.4		
Stroke	1.0	0.7	1.2	0.9	1.6		
Congestive heart failure	0.6	0.7	0.7	0.9	1.5		
Osteoarthritis	6.0	6.1	7.4	7.4	13.7		
Osteoporosis	3.0	1.9	3.8	2.2	4.8		
Anxiety	7.2	7.3	8.6	8.6	16.9		
Depression	9.3	10.1	11.4	12.0	20.7		
Bipolar disorder	0.6	0.6	0.8	0.7	1.2		
Schizophrenia	0.4	0.7	0.5	0.9	0.8		
Dementia	0.4	0.3	0.5	0.3	0.6		
Cancer (any)	2.1	2.8	2.5	3.3	15.3		
High blood pressure	12.2	14.4	15.1	17.3	24.4		
High cholesterol	11.1	11.8	13.7	14.2	18.7		
Diabetes type 1	0.4	0.3	0.5	0.4	0.7		
Diabetes type 2	4.3	2.9	5.3	3.5	6.3		
Chronic kidney disease	1.1	0.4	1.4	0.5	1.4		

 Table 16 – Prevalence of patient conditions among cohorts of 'practice active patients' (HCH and non-HCH) at 30 June 2019

¹MedicineInsight data are provided for patients aged 15 years and older. ² 'Practice active patient' is defined in Pen CS data as having at least three progress notes recorded in two years. In NPS MedicineInsight, it is defined as patient having encounters on at least three days in the last two years, who was marked as 'active' and not marked as 'deceased' in the GP system. In POLAR data, it is defined as patient having at least three different dates recorded in the extract data as of an encounter, observation, pathology test, prescription or MBS billing in 21 months (from October 2017 to June 2019). Deceased patients were excluded.

Practice recording of HCH enrolments

The practice needs to flag HCH enrolled patients in their clinical management system to enable clinicians in the practice to identify the patients. The practice also needs to flag HCH patients in such a manner that allows the flags to be extracted by the relevant extraction software. Pen CS practices were instructed to record patient tier and withdrawal status using the TopBar functionality, and for those that don't have TopBar, using the CAT 4 application. POLAR practices were requested to follow Australian Association of Practice Management guidance on using practice management software for HCH recording and reporting (Australian Association of Practice Management, 2017). MedicineInsight practices were requested to record the HCH risk tier in the patient diagnosis screen of the practice clinical management system using a specific text string.

To assess the accuracy of the recording of HCH enrolments, the total number of HCH patients and risk tier identified in practice extracts were compared to the HCH registrations within the HPOS system. HPOS containing age, sex, tier, and dates of enrolment and withdrawal. Data are provided quarterly for the evaluation by the Department of Human Services (through the Department of Health). For the four HCH practices in NPS

MedicineInsight that also supplied data through Pen CS, in this section their data are reported against Pen CS.

As presented in Table 17, 86 practices (81 Pen CS and 5 POLAR) provided data that contained flags for HCH enrolees. Twenty-two practices (16 Pen CS and 6 POLAR) provided data with no flags of HCH enrolees. From the 86 practices with HCH flags, 8,336 HCH patients were identified (8,077 Pen CS and 259 POLAR patients). When counts of HCH patients in the practice data were compared with HPOS registrations, the practice count was lower than HPOS registration for 32 practices and higher than HPOS registration for 38 practices, while the counts matched for 16 practices.

Table 17 - HCH enrolments identified in practice extracts compared with the HPOS
registrations, at 30 June 2019

		Total no.	patients			
	No. practices	Practice extract data	HPOS registration			
Presence of flags of HCH enrolments in practice	extract data					
Practice data not available for evaluation	241	-	1,200			
Practice data with no flags for HCH enrolees ²	22	-	703			
Practice data with flags for HCH enrolees ³	86	8,336	8,311			
No. of enrolments identified in practice extract data versus HPOS registration						
Equal number of enrolments in each source	16	810	810			
Fewer patients in practice data						
Between 1 and 9 patients	18	1,778	1,840			
10 or more patients	14	1367	1,652			
More patients in practice data						
Between 1 and 9 patients	31	3,072	2,979			
10 or more patients	7	1,309	1,030			

Data related to 132 practices participating in the HCH as at 31 July 2019. ¹This includes a practice that shares Pen CS database with another location; ²Twenty-two practices without flags of HCH patients include 16 Pen CS and 6 POLAR practices; ³Eighty-six practices with flags of HCH patients include 81 Pen CS practices (8,077 patients) and 5 POLAR practices (259 patients).

The South East Melbourne PHN advised that the absence of patient enrolment flags in the POLAR extracts for six practices might be due to practices flagging patients in MBS billing software (e.g. Zedmed), which is incompatible with the extraction software, or practices using their own approaches so that flags are not extractable. The evaluation team has proposed that the PHN could facilitate manual collation of de-identified patient unique ID and the most recent patient tier and active/withdrawn status information from the practices. This information could be provided to the evaluation for linkage to the rest of POLAR records. At the time of this report, a spreadsheet template for practices to manually enter the above information was provided to the PHN.

Figure 4 shows cumulative HCH enrolments and number of HCH patients in each tier as identified in practice extracts in comparison to HPOS registrations for 84 practices. These include three POLAR practices whose data extracts contain date of enrolment and patient tier, and 81 Pen CS practices whose data extracts contain patient tier and allow estimation of timing of patient enrolment. Data extracts provided by two POLAR practices allow identification of HCH patients but do not contain information about date of patient enrolment tier.



Figure 4 – Cumulative HCH enrolments and number of patients in each tier identified in practice extracts compared with HPOS registrations, at 30 June 2019

Patient health conditions

The proportion of HCH patients who had a health condition flagged in practice data extracts is presented in Table 18. The most common conditions were high blood pressure (49.4%), high cholesterol (39.0%) and type 2 diabetes (30.1%) followed by osteoarthritis (25.5%) and depression (22.3%). About 2% of patients had bipolar disorder, schizophrenia or dementia.

Patient condition ²	No. patients (%) ¹
Asthma	1,570 (18.8%)
COPD	1016 (12.2%)
Atrial fibrillation	641 (8.6%) ³
Coronary heart disease	1,360 (16.3%)
Stroke	423 (5.2%) ³
Congestive heart failure	393 (4.7%)
Osteoarthritis	2,117 (25.5%) ³
Osteoporosis	1,249 (15.2%) ³
Anxiety	1,081 (13.0%)
Depression	1,862 (22.3%)
Bipolar disorder	137 (1.8%) ³
Schizophrenia	142 (1.8%) ³
Dementia	153 (2.0%) ³
Cancer (any)	676 (9.1%) ³
High blood pressure	4,114 (49.4%)
High cholesterol	3,252 (39.0%)
Diabetes type 1	199 (2.4%)
Diabetes type 2	2,510 (30.1%)
Chronic kidney disease	1,137 (13.6%)
Number of above morbidities ⁴	
Nil	737 (8.8%)
One condition	1,295 (15.5%)
2-4 conditions	4,775 (57.3%)
5+ conditions	1,529 (18.3%)

Table 1	8 – Health	conditions	flaaaed f	or HCH	patients	within	practice	extracts
	e neam	containonis	naggeai	0	panemo	*****	practice	0/11 0 010

¹ Percentages were calculated for 8,336 HCH patients (8,077 and 259 patients identified in Pen CS and POLAR extracts respectively), unless indicated otherwise. ² Patient conditions were ascertained based on derived variables in Pen CS extracts and SNOMED-CT textual descriptions in POLAR extracts. ³ When derived variables relating to the condition were absent from entire Pen CS extracts, HCH patients in the practices with missing data were excluded from the calculation i.e. the denominator was less than 8,336. ⁴The number of the above-listed conditions identified for a patient, ranging from 0 to 19.

Quality of care received by HCH patients

To examine the quality of chronic illness care provided for HCH patients, key patient lifestyle factors and physiological and pathological measures recorded in the practice data extracts were assessed. Table 19 presents whether the data were ever recorded and whether they were recorded in the previous year (July 2018 to June 2019).

Table 19 – Recording of assessment of lifestyle factors for HCH patients and whether an assessment was recorded in the previous year (July 2018-June 2019)

Measure	Number (%) of patients ¹
Smoking status ²	
Ever recorded	7,910 (94.9%)
Recorded in previous year	5,558 (68.8%) ³
Alcohol consumption amount	
Ever recorded	6,552 (78.8%)
Recorded in previous year	4,900 (60.7%) ³
Physical activity ⁴	
Ever recorded	1,209 (18.1%) ³
Recorded in previous year	543 (6.5%) ³
Body weight	
Ever recorded	7,860 (94.3%)
Recorded in previous year	6,751 (81.0%)
Body height	
Ever recorded	7,646 (91.7%)
Waist	
Ever recorded	4,836 (58.0%)
Recorded in previous year	2,655 (31.9%)

¹Percentage were calculated for 8,336 HCH patients (8,077 and 259 patients identified in Pen CS and POLAR extracts respectively), unless indicated otherwise; ²Smoking status in PenCS data was categorised as smoker (daily, weekly, irregular), ex-smoker and never smoked and in POLAR data as smoker, ex-smoker and non-smoker; ³When derived variables relating to patient assessments were absent from entire Pen CS extracts, HCH patients in the practices with missing data were excluded from the calculation i.e. the denominator was less than 8,336; ⁴Physical activity was available in Pen CS extracts only and categorised as sufficient, insufficient and sedentary.

Table 20 presents whether a measurement of blood pressure, pulse, cholesterol and kidney function for HCH patients has ever been recorded, was recorded in the previous year (July 2018 to June 2019) and in the last six months (Jan 2019 to June 2019).

Table 20 – Recording of key measures for HCH patients and whether a measurement was recorded in the previous year (July 2018-June 2019) and previous six months (Jan-June 2019)

Measure	Number (%) of patients ¹
Blood pressure ²	
Ever recorded	8,079 (96.9%)
Recorded in previous year	7,553 (90.6%)
Recorded in previous 6 months	6,667 (80.0%)
Pulse	
Ever recorded	7,115 (95.4%) ³
Recorded in previous year	6,361 (85.3%) ³
Recorded in previous 6 months	5,353 (71.8%) ³
Cholesterol ⁴	
Ever recorded	7,797 (93.5%)
Recorded in previous year	6,400 (76.8%)
Recorded in previous 6 months	4,538 (54.4%)
Kidney function ⁵	
Ever recorded	7,921 (95.0%)
Recorded in previous year	6,963 (83.5%)
Recorded in previous 6 months	5,390 (64.7%)

¹Percentages were calculated for 8,336 HCH patients (8,077 and 259 patients identified in Pen CS and POLAR extracts respectively), unless indicated otherwise; ²Systolic or diastolic blood pressure; ³When derived variables relating to patient measurements were absent from entire Pen CS extracts, HCH patients in the practices with missing data were excluded from the calculation i.e. the denominator was less than 8,336; ⁴Total cholesterol, HDL, LDL or triglycerides; ⁵eGFR, serum creatinine, urinary creatinine or albumin-creatinine ratio.

Table 21 presents completion and timeliness of HbA1c measurement in patients with a diagnosis of diabetes (type 1 or type 2) and spirometry in patients with a diagnosis of asthma or COPD. The timeline reflects whether a test has ever been recorded, was recorded in the previous year (July 2018 to June 2019) or in the last six months (Jan 2019 to June 2019).

Table 21 – Recording of HbA1c and spirometry tests for HCH patients and whether a test was recorded in previous year (July 2018-June 2019) and previous six months (Jan-June 2019)

	Number (%) of patients
HbA1c ¹	
Number of HCH patients with diabetes (Type 1 or 2)	2,630
HbA1c ever recorded	2,606 (99.1%)
HbA1c recorded in previous year	2,424 (92.2%)
HbA1c recorded in previous 6 months	2,024 (77.0%)
Spirometry ²	
Number of HCH patients with asthma or COPD	1,756
Spirometry ever recorded	401 (22.8%)
Spirometry recorded in previous year	100 (5.7%)
Spirometry recorded in previous 6 months	60 (3.4%)

¹HCH patients with diabetes were identified in practice data extracts provided by 86 practices. The recording of HbA1c test was calculated among HCH patients with diabetes; ³Data relating to spirometry (FEV or FVC) were available in practice extracts provided by 71 practices. The recording of spirometry was examined among HCH patients with asthma or COPD within these practices.

Use of GP services by HCH patients

Pen CS extraction software calculates the number of times that a GP in the practice has used the practice clinical information system for a patient in the last three, six and 12 months. These derived variables potentially provide information on patient utilisation of practice services, based on an assumption that a GP used the clinical information system during a patient consultation. The software also calculates the number of times that other health providers, such as registered nurses, Aboriginal Health Workers, dieticians, psychologists, podiatrists, midwives and medical students, have used the practice clinical information system in the last six months, noting that the designation of the system user is defined by and within the practice. However, derived variables relating to utilisation of non-GP services are absent in entire extracts for a substantial number of practices, which might indicate unavailability of nurses and these allied health providers in the practices. Therefore, this section focuses on the number of patient consultations with a GP in the practice in the last three, six and 12 months (Table 22).

In POLAR data, derived variables relating to GP service utilisation are not included in the extract data. For HCH patients identified in POLAR data extracts, the number of GP consultations was calculated as the number of patient encounters with a GP provider for any encounter type (e.g. visit, surgery, telephone, non-visit) in the last three, six and 12 months. In instances where multiple GP-provider encounter records with the same encounter type were recorded in one day, one encounter record was selected. The analysis of GP-provider encounters in POLAR data shows that majority of GP-provider encounters (94%) related to patient consultations (i.e. type of encounter as visit or surgery).

		All HCH		
Measure	Tier 1	Tier 2	Tier 3	patients ³
	n (%)	n (%)	n (%)	II (/ø)
Number of HCH patients	1,477	3,963	2,697	8,323
Number of GP consultatio	ns in the last 3 mon	ths		
Mean (SD)4	3.04 (2.25)	3.56 (2.76)	4.14 (3.32)	3.67 (2.91)
Median (IQR)4	2 (3)	3 (3)	3 (4)	3 (3)
Less than 5	1,175 (79.6%)	2,818 (71.1%)	1,715 (63.6%)	5,826 (70.0%)
5 to 9	247 (16.7%)	957 (24.1%)	763 (28.3%)	2,024 (24.3%)
10 to 14	23 (1.6%)	110 (2.8%)	142 (5.3%)	284 (3.4%)
15 or more	5 (0.3%)	27 (0.7%)	35 (1.3%)	69 (0.8%)
Unknown	27 (1.8%)	51 (1.3%)	42 (1.6%)	120 (1.4%)
Number of GP consultatio	ns in the last 6 mon	ths		
Mean (SD)⁴	5.53 (4.13)	6.61 (4.89)	8.06 (6.24)	6.92 (5.34)
Median (IQR)⁴	5 (4)	6 (6)	7 (7)	6 (6)
Less than 5	722 (48.9%)	1,527 (38.5%)	854 (31.7%)	3,161 (38.0%)
5 to 9	529 (35.8%)	1,567 (39.5%)	958 (35.5%)	3,123 (37.5%)
10 to 14	155 (10.5%)	583 (14.7%)	527 (19.5%)	1,303 (15.7%)
15 to 19	31 (2.1%)	173 (4.4%)	196 (7.3%)	412 (5.0%)
20 or more	17 (1.2%)	83 (2.1%)	141 (4.2%)	250 (3.0%)
Unknown	23 (1.6%)	30 (0.8%)	21 (0.8%)	74 (0.9%)
Number of GP consultatio	ns in the last 12 mo	nths		
Mean (SD)⁴	10.73 (7.34)	12.80 (8.83)	15.65 (11.43)	13.41 (9.71)
Median (IQR)⁴	9 (8)	11 (11)	13 (13)	11 (11)
Less than 5	262 (17.7%)	590 (14.9%)	342 (12.7%)	1,203 (14.5%)

Table 22 – Number of GP consultations by HCH patients¹, at 30 June 2019

		All HCH			
Measure	Tier 1 n (%)	Tier 2 n (%)	Tier 3 n (%)	patients ³ n (%)	
5 to 9	495 (33.5%)	1,040 (26.2%)	557 (20.7%)	2,143 (25.7%)	
10 to 14	382 (25.9%)	957 (24.1%)	571 (21.2%)	1,952 (23.5%)	
15 to 19	164 (11.1%)	616 (15.5%)	415 (15.4%)	1,228 (14.8%)	
20 to 24	98 (6.6%)	372 (9.4%)	333 (12.3%)	828 (9.9%)	
25 or more	64 (4.3%)	367 (9.3%)	468 (17.4%)	925 (11.1%)	
Unknown	12 (0.8%)	21 (0.5%)	11 (0.4%)	44 (0.5%)	

¹The number of GP consultations for patients in Pen CS practices was estimated based on derived variables that indicate the number of times any GP in the practice used the practice's clinical information system within the defined period. For patients in POLAR practices, the number of GP consultations was calculated as the number of patient encounters with a GP provider for any encounter type (e.g. visit, surgery, telephone, non-visit) within the define period. In instances where multiple GP provider encounter records with the same encounter type were recorded in one day, one encounter record was selected. The analysis of GP provider encounters in POLAR data shows that the majority of GP provider encounters (94%) related to patient consultations (i.e. type of encounter as visit or surgery); ²GP consultations for patients in each risk tier were calculated for 81 Pen CS practices whose extract data contain the GP utilisation derived variables and patient risk tier and 2 POLAR practices whose extract data contain patient encounters and risk tier; ³GP consultations for all HCH patients were calculated for 81 Pen CS practices whose extract data contain the GP utilisation derived variables and patient risk tier and 4 POLAR practices whose extract data contain the GP utilisation derived variables and patient risk tier and 2 POLAR practices.

Risk stratification

The HCH risk stratification tool was developed by Precedence Health Care in collaboration with the Commonwealth Scientific and Industrial Research Organisation (CSIRO) (Khanna et al., 2019). The tool involves passing de-identified and encrypted data to a portal where the relevant algorithms are applied. Subsequently a digital certificate and information, including risk scores are passed back to the participating practice. Precedence Health Care have accumulated de-identified data that includes the predictor items used in the models, the risk scores assigned, and tiers.

A copy of the de-identified data was provided to the evaluation team in early September 2019 for analysis. The data relate to items and risk scores for the two stages of the risk stratification process, the predictive risk model (PRM) and the Western HARP Risk Calculator (the HARP) (HARP, 2009). These reflect the two stages of the process involved in determining eligibility for HCH and assigning a tier.

In the first stage, the PRM uses data from the practice clinical management system to populate 50 predictor variables, including: demographic characteristics, observations, diagnoses and medications. The PRM estimates the risk of a patient being hospitalised in the next 12 months. If the score is above 9.7%, the patient is flagged as potentially eligible for enrolment. GPs can override the recommendation based on the PRM risk score and invite patients with a risk score below the threshold to undertake the second stage assessment.

The next stage of risk assessment involves the HARP. The HARP includes additional predictor variables that may not be readily available in the practice clinical management system, so are gathered through a clinician assessing the patient. These include presenting clinical symptoms, service access profile, risk factors, complications, psycho-social issues and the patient's level of self-management. Ultimately the patient is allocated a score out of 49, with higher scores indicating higher risk of being hospitalised. Scores on the HARP are used to allocate patients to a HCH tier. A patient is not eligible if they score between zero and 4; they are allocated to Tier 1 with a score of 5 to 12, to Tier 2 with a score of 13 to 23, and to Tier 3 if they score 24 or greater.

Figure 5 shows density plots for the 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 is a substantial overlap across the tiers, with patients in the higher tiers more likely to have a higher risk.

6



Figure 5 – Distribution of PRM risk scores by HCH tier Source: Risk stratification data provided by Precedence Health Care, to June 2019.

More detailed summaries of the HARP data are presented in Appendix 4. These tables present summary scores on each item in the HARP tool for the whole patient population, as well as by HCH tier. There is also an analysis on whether the GP overrode the patients PRM score.

In relation to the HCH tier, the results are consistent with expectations because tier is completely determined by the HARP tool. Patients were more likely to have chronic conditions and more social problems with increasing tier (Table 81). The most common chronic disease group was 'Co-morbid diagnosis of diabetes and/or renal failure and/or liver disease' with a prevalence of 43.1% (36.6% in Tier 1, 41.9% in Tier 2, and 48.8% in Tier 3). Cardiac conditions such as CHF or angina were also common, with 33.2% of patients having these conditions and 33.7% of patients had a chronic respiratory condition. Possibly the greatest gradient in the prevalence of a condition across tiers was for diagnosis of complex care needs in frail aged patients, such as dementia, falls, incontinence, with a prevalence of 4.7% in Tier 1, 11.6% in Tier 2, and 34.5% in Tier 3.

Within the service access profile category 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) (Table 82). Sixteen per cent of patients had regular medical checks, with the highest rate among patients in Tier 2 (13.5% in Tier 3, 19.9% in Tier 2, 10% in Tier 1). There were high levels (>50%) of all the lifestyle risk factors except smoking, which had a prevalence of 18.0%. The prevalence of high blood pressure, high cholesterol and overweight/obese were highest among patients 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) (Table 83).

There are eight items in the category of complications with each item being allocated a score of one if the patient has that complication. The prevalence of complications are 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 (Table 84). Each of the eight complications were more common among patients in Tier 3 with only 26.6% having none or one of the complications compared with 60.8% in Tier 2 and 80.7% in Tier 1. Potentially the biggest discriminator of patients across the tiers was on the psycho-social category, with 92.7% of patients in Tier 3 being allocated a score of 15 (possible scores are 0, 7, and 15) (Table 85). Only 8% of patients in Tier 2 were allocated a score of 15 and no patients in Tier 1 were allocated a score of 15.

As indicated above, the factors influencing patient selection are not fully available in the practice clinical management system alone, so GPs could override the score and invite patients to undertake the HARP assessment. Of the 12,448 patients for whom data were available, 30% (3,674) were included in the next phase of risk assessment because the GP overrode their PRM score. The distribution of PRM scores by tier and whether or not the GP overrode the PRM score are presented in Figure 6. For those patients whose score was overridden, 25.4% (935) were then allocated to Tier 1, 52.6% (1,931) were allocated to Tier 2, and 22.0% (808) were allocated to Tier 3 (see Table 23).

	Was patients score overridden?					
Result	Νο	Yes	p value			
Score from PRM						
Median (min, max)	0.18 (0.10, 1.00)	0.07 (0.00, 0.10)	<0.001			
HARP risk profile						
Low (risk score 1 to 10)	861 (9.8%)	609 (16.6%)				
Medium (risk score 11 to 23)	4,669 (53.2%)	2,257 (61.4%)	<0.001			
High (risk score 24 to 38)	3,206 (36.5%)	805 (21.9%)	~0.001			
Urgent (risk score 39 to 49)	38 (0.4%)	3 (0.1%)				

Table 23 – Selected features of patients where the GP overrode the predictive risk model (PRM) score

Source: Risk stratification data provided by Precedence Health Care, to June 2019.

Patients whose PRM score was overridden were less likely to have a chronic disease (26.4% vs. 50.1% for diabetes, renal failure or liver disease, 15.5% vs. 40.7% for cardiac conditions, 25.4% vs. 37.1% for respiratory disease) and less likely to have a diagnosis of complex care needs in frail aged, such as dementia, falls and incontinence (8.7% vs. 21.6%). They were more likely to have a diagnosis of complex care needs in people under 55 years, such as mental health issues (26.5% vs. 11.7%).

Among the other domains, patients who were included after having their PRM overridden tended to be less likely to have health problems and less likely to have poor lifestyle risk factors, but they were more likely to have regular medical checks (22.2% vs. 13.3%) and possibly cognitive impairment (12.0% vs. 10.2%). But they weren't more likely to have mental health problems (44.5% vs. 43.8%) or drug and alcohol problems (5.8% vs. 5.7%).



Figure 6 – Distribution of scores on the PRM by the override flag and HCH tier Source: Risk stratification data provided by Precedence Health Care, to June 2019.

Community pharmacy in HCH

Community pharmacists are collecting data for the HCH patients who are referred to them at the following time points:

- 1. At the initial review. The initial review involves medication reconciliation and the development of a collaborative medication management plan (MMP). The MMP forms part of the patient's shared care plan developed by the HCH with the patient.
- 2. At each subsequent review. Observations reported during subsequent reviews reported to the patient/carer and the HCH through the patient's shared care plan.

The Pharmacy Guild collates a Health Outcomes data set on behalf of the pharmacists, and for this report, transferred data for 468 HCH enrolees who were referred to and seen by a community pharmacist by the end of June 2019 and had an initial review. The 468 patients are from a small number of practices, with 399 (85.3 %) of the patients coming from seven practices. At this stage most of the patients have only had an initial review and this report concentrates on data from that review. However, 141 (30.1%) of the patients have had a second review. A summary of the data are presented in Appendix 5.

Of the 468 patients who had an initial review, 44 (9.4%) are in Tier 1, 235 (50.2%) in Tier 2, and the remaining 189 (40.4%) in Tier 3 (Table 87). The characteristics of patients were similar across tiers; 57.5% were female, 90% were English speaking at home, and patients scored relatively high on the MedsIndex score (74% scored above 80), which is a measure of medication adherence. Patients in Tier 3 were slightly younger with 53% of patients being less than 65 years old compared with 41% in Tier 1 and 35% in Tier 2. Patients in Tier 3 were more likely to have attended hospital in the past 6 months (26% compared with 11.4% in Tier 1 and 8.5% in Tier 2).

Patients were taking medicines for a wide range of conditions (Table 88). The most commonly prescribed medicines among this group of patients were antihypertensives and lipid lowering drugs, with 72.4% and 52.8% patients prescribed these respective medicines. Prescription of medicines for these conditions were similar across tiers. Medicines were also commonly prescribed for heart disease (40.6%), depression and anxiety (26.9%), arthritis (32.1%), diabetes (43.8%), pain (26.1%), digestive disorders (24.8%), and respiratory conditions (32.5%). Prescription of medicines for depression and anxiety appear to increase with tier, as does the prescription of medicine for diabetes, kidney disease, respiratory disease, and the category of other conditions.

The most common goals agreed to in the patients' medication management plan were 'Improved medication adherence' (42%) and 'Improved patient knowledge about their medicines leading to improved medication use and disease self-management' (51%), but these varied substantially between tiers (Table 89). Patients in tiers 1 and 2 were much more likely to have the goal of 'improved patient knowledge' than patients in Tier 3 (73% in Tier 1, 63% in Tier 2 and 30% in Tier 3), but patients in Tier 3 were far more likely to have the goal of 'Improved medication adherence' (68% in Tier 1, 32% in Tier 2 and 61% in Tier 3s). The goals of 'Improved technique/usage of medication devices' (15%), 'Optimise the medication dose' (18%), and 'Reduced medication side effects' (8%) were less common.

For most conditions, at least two people were responsible for the patient achieving their goals and in general it was most likely to be the carer/patient and pharmacist (Table 90). For the five pre-defined patient goals, both carer/patient and pharmacist were reported as being responsible in over 60% of cases. Pharmacists were considered responsible for improved medication adherence for 88% of patients who set this goal and responsible for improved knowledge for 87% of patients. Carer/patients were considered responsible in 84% of cases where the goal was to improve technique of medication devices. Although GPs were less likely to be considered responsible for a goal, GPs were considered responsible for goals relating to optimising dose (57%) and reducing side effects (61%).

Patients were offered services to assistant them in achieving the goals they agreed to in the MMP (Table 91). The most common service offered was blood pressure monitoring (31% of patients), followed by dose administration aid (25%).

The pharmacist updating reconciled medication list (98.3%), the pharmacist providing the patient with medicine education (88.9%), and the pharmacist providing the patient with disease state-state information (75.2%) were very common outcomes of the medication management plan reported at the initial review (Table 92).

References

- Australian Association of Practice Management. (2017). Health Care Home Activity Monitoring Guide October 2017. Melbourne: AAPM.
- 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. doi: 10.1007/s10198-013-0502-3
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). Internet, Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Method (4th ed.). Hoboken, New Jersey: Wiley.
- 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. doi: 10.1186/s12955-017-0638-4
- 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). *Medical Care*, 43, 436-444.
- Graf, C. L. (2008). The hospital admission risk profile: the HARP helps to determine a patient's risk of functional decline. *Am J Nurs, 108*(8), 62-71; quiz 72. doi: 10.1097/01.NAJ.0000327832.59406.26
- Graf, C. L. (2010). The Hospital Admission Risk Profile (HARP). Medsurg Nurs, 19(2), 133-134.
- Health Policy Analysis. (2019). Evaluation of the Health Care Homes program Evaluation plan (Updated 2019). Canberra: Department of Health.

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. doi: 10.1007/s11136-011-9903-x

- 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. doi: 10.1111/j.1475-6773.2005.00438.x
- Khanna, S., Rolls, D. A., Boyle, J., Xie, Y., Jayasena, R., Hibbert, M., & Georgeff, M. (2019). A risk stratification tool for hospitalisation in Australia using primary care data. Sci Rep, 9(1), 5011. doi: 10.1038/s41598-019-41383-y

NPS MedicineWise. (2018). MedicineInsight data book version 2.1. Sydney: NPS MedicineWise. Outcome Health. (2019). POLAR GP. Retrieved 5 July 2019, from

https://outcomehealth.org.au/polar.aspx

- Pen CS. (2019). Data mapping. Retrieved 5 July, 2019, from https://help.pencs.com.au/display/ADM
- Royal Australian College of General Practitioners. (2017). Standards for general practices 5th edition. Melbourne: RACGP.
- 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.

Appendix 1 – Practice surveys: Additional tables

	S		ze	Туре			Location		
Response	Total	Large/ medium	Small/sole	Corporate	AMS	Independent	MMM 1	MMM 2/3	MMM 4+
Yes	21 (17.5%)	13 (27.7%)	8 (11.1%)	4 (23.5%)	3 (20.0%)	14 (16.1%)	9 (11.0%)	8 (42.1%)	4 (22.2%)
No	98 (81.7%)	34 (72.3%)	64 (88.9%)	13 (76.5%)	12 (80.0%)	73 (83.9%)	73 (89.0%)	11 (57.9%)	14 (77.8%)
Don't know/ no response	1 (0.8%)	1		1			1		

Table 24 - Do GPs in the practice have formal arrangements for working with/in local hospitals, baseline

Source: Practice survey R1 Part A, Mar-Jun 2018, question 12.

Table 25 – Practice assessment of access to the selected health services within the local community, baseline

Response	Usually available	Sometimes available	Not usually available	Don't know/ no response
Pharmacy	111 (94.1%)	7 (5.9%)		2
Physiotherapist	100 (84.7%)	15 (12.7%)	3 (2.5%)	2
Dietitian	94 (79.7%)	19 (16.1%)	5 (4.2%)	2
Psychologist	96 (81.4%)	14 (11.9%)	8 (6.8%)	2
Social Worker	64 (55.2%)	33 (28.4%)	19 (16.4%)	4
Dentist	98 (83.1%)	16 (13.6%)	4 (3.4%)	2
Optometrist	94 (79.7%)	17 (14.4%)	7 (5.9%)	2

Source: Practice survey R1 Part A, Mar-Jun 2018, question 13. (a) Sometimes available: For example, visiting services. (b) Not usually available: Patients have to travel to another town, or a large distance to access these services.

Response	Total	Size		Туре			Location		
		Large/ medium	Small/sole	Corporate	AMS	Independent	MMM 1	MMM 2/3	MMM 4+
Doctor in practice	22 (18.3%)	10 (22.2%)	12 (17.4%)	4 (25.0%)	4 (26.7%)	14 (16.9%)	12 (15.2%)	5 (29.4%)	5 (27.8%)
Nurse Triage + Doctor in practice	4 (3.3%)		4 (5.8%)		4 (26.7%)				4 (22.2%)
Doctor in Practice + After hours service/deputising service	6 (5.0%)	3 (6.7%)	3 (4.3%)			6 (7.2%)	4 (5.1%)	1 (5.9%)	1 (5.6%)
After hours service/deputising service	63 (52.5%)	25 (55.6%)	38 (55.1%)	12 (75.0%)	1 (6.7%)	50 (60.2%)	59 (74.7%)	4 (23.5%)	
Local ED/Hospital	16 (13.3%)	6 (13.3%)	10 (14.5%)		5 (33.3%)	11 (13.3%)	3 (3.8%)	7 (41.2%)	6 (33.3%)
Other	3 (2.5%)	1 (2.2%)	2 (2.9%)		1 (6.7%)	2 (2.4%)	1 (1.3%)		2 (11.1%)
Don't know/ no response	6 (5.0%)	3	3	2		4	4	2	

Table 26 – Arrangements for patient attending the practice to access after hours general practice services, baseline

Source: Practice survey R1 Part A, Mar-Jun 2018, question 23.

Table 27 – How long (in days) does the patient have to wait before seeing a GP, baseline

Response		Size		Туре			Location		
	Total	Large/ medium	Small/sole	Corporate	AMS	Independent	MMM 1	MMM 2/3	MMM 4+
In an emergency									
Same day	107 (89.2%)	47 (97.9%)	60 (83.3%)	18 (100.0%)	15 (100.0%)	74 (85.1%)	73 (88.0%)	16 (84.2%)	18 (100.0%)
Around 1 day	13 (10.8%)	1 (2.1%)	12 (16.7%)			13 (14.9%)	10 (12.0%)	3 (15.8%)	
Other appointment									
Same day	52 (43.3%)	17 (35.4%)	35 (48.6%)	9 (50.0%)	12 (80.0%)	31 (35.6%)	36 (43.4%)	4 (21.1%)	12 (66.7%)
Around 1 day	51 (42.5%)	26 (54.2%)	25 (34.7%)	9 (50.0%)	2 (13.3%)	40 (46.0%)	35 (42.2%)	11 (57.9%)	5 (27.8%)
Around 2 days	6 (5.0%)	1 (2.1%)	5 (6.9%)			6 (6.9%)	6 (7.2%)		
Other	11 (9.2%)	4 (8.3%)	7 (9.7%)		1 (6.7%)	10 (11.5%)	6 (7.2%)	4 (21.1%)	1 (5.6%)

Source: Practice survey R1 Part A, Mar-Jun 2018, question 24.

Table 28 – Option available for patients to interact with practice/GP, baseline

Response	n (%)	Response	n (%)
Contact a doctor or nurse by telephone during the practice/ service's hours of operation?	102 (85.0%)	Review letters from specialists/ hospital discharge summarised on a patient portal?	11 (9.2%)
Request appointments online?	85 (70.8%)	View test results on a patient portal?	7 (5.8%)
Describe the problems they wish to discuss with the GP prior to the appointment?	75 (62.5%)	Request refills for prescriptions online?	6 (5.0%)
Send a medical question or concern via email or electronic message?	48 (40.0%)	Don't know/ no response	3 (2.5%)
Leave a voice message and get a return call from a doctor or nurse	39 (32.5%)		

Source: Practice survey R1 Part A, Mar-Jun 2018, question 25.

Table 29 – At least one GP in the practice who makes home visits, baseline

Response		Size		Туре			Location		
	Total	Large/ medium	Small/sole	Corporate	AMS	Independent	MMM 1	MMM 2/3	MMM 4+
Yes	105 (87.5%)	45 (93.8%)	60 (83.3%)	16 (88.9%)	12 (80.0%)	77 (88.5%)	74 (89.2%)	17 (89.5%)	14 (77.8%)
No	15 (12.5%)	3 (6.2%)	12 (16.7%)	2 (11.1%)	3 (20.0%)	10 (11.5%)	9 (10.8%)	2 (10.5%)	4 (22.2%)

Source: Practice survey R1 Part A, Mar-Jun 2018, question 26.
Response	Easy	Somewhat difficult	Difficult	Not Possible	Don't know/ no response
List of patients by diagnosis or health problems (e.g. diabetes, cancer)	109 (90.8%)	11 (9.2%)			
List of patients by laboratory result (e.g. HbA1C > 9.0)	90 (75.0%)	23 (19.2%)	4 (3.3%)	3 (2.5%)	
List of patients who are due or overdue for tests or preventive care (e.g. flu vaccine)	101 (84.2%)	17 (14.2%)	1 (0.8%)	1 (0.8%)	
List of all laboratory results for an individual patient (including those ordered by other doctors).	81 (67.5%)	28 (23.3%)	8 (6.7%)	3 (2.5%)	
List of all patients taking a particular medication	96 (80.7%)	20 (16.8%)	2 (1.7%)	1 (0.8%)	1
List of all medications taken by an individual patient (including those that may have been prescribed by other doctors)	87 (72.5%)	24 (20.0%)	8 (6.7%)	1 (0.8%)	
Clinical summaries to give patients after each visit.	104 (86.7%)	14 (11.7%)	1 (0.8%)	1 (0.8%)	

Table 30 – Difficulty in generating information from current systems, baseline

Source: Practice survey R1 Part A, Mar-Jun 2018, question 30.

Table 31 – GPs routinely receive and review data on selected aspects of patient care, baseline

Response	Yes	No	Don't know/ no response
Clinical outcomes (e.g. percentage of patients with diabetes or asthma with good control)	74 (62.2%)	45 (37.8%)	1
Frequency of ordering diagnostic tests	69 (57.5%)	51 (42.5%)	
Patients' hospital admissions or emergency department use	92 (76.7%)	28 (23.3%)	
Prescribing practices	82 (68.3%)	38 (31.7%)	
Surveys of patient satisfaction and experiences with care	74 (62.2%)	45 (37.8%)	1

Source: Practice survey R1 Part A, Mar-Jun 2018, question 31.

Response	Yes	No	Don't know/ no response							
A checklist for preventive clinical practices (counselling, screening, immunisation) to carry out with patients, according to guidelines?	104 (86.7%)	16 (13.3%)								
A reminder system to invite patients to recommend screening tests (e.g. Pap test, mammogram)?	119 (99.2%)	1 (0.8%)								
A system to track laboratory tests ordered until results reach clinicians?	88 (73.3%)	32 (26.7%)								
A tool to assist lifestyle counselling or to help modify behaviours (e.g. smoking cessation program, health education program)?	86 (72.3%)	33 (27.7%)	1							

Table 32 – Selected processes/systems in place, baseline

Source: Practice survey R1 Part A, Mar-Jun 2018, question 32.

Table 33 – Practice Incentive Program (PIP) participation, baseline

		Size		Туре			Location		
Response	Total	Large/ medium	Small/sole	Corporate	AMS	Independent	MMM 1	MMM 2/3	MMM 4+
Diabetes Incentive	114 (95.0%)	44 (93.6%)	70 (97.2%)	17 (100.0%)	15 (100.0%)	82 (94.3%)	77 (93.9%)	19 (100.0%)	18 (100.0%)
eHealth Incentive	110 (91.7%)	44 (93.6%)	66 (91.7%)	14 (82.4%)	14 (93.3%)	82 (94.3%)	76 (92.7%)	18 (94.7%)	16 (88.9%)
Asthma incentive	108 (90.0%)	43 (91.5%)	65 (90.3%)	15 (88.2%)	14 (93.3%)	79 (90.8%)	74 (90.2%)	16 (84.2%)	18 (100.0%)
Cervical Screening Incentive	105 (87.5%)	43 (91.5%)	62 (86.1%)	16 (94.1%)	15 (100.0%)	74 (85.1%)	70 (85.4%)	17 (89.5%)	18 (100.0%)
Practice Incentive Program After Hours Initiative	86 (71.7%)	41 (87.2%)	45 (62.5%)	12 (70.6%)	7 (46.7%)	67 (77.0%)	59 (72.0%)	17 (89.5%)	10 (55.6%)
Indigenous Health Incentive	83 (69.2%)	35 (74.5%)	48 (66.7%)	13 (76.5%)	11 (73.3%)	59 (67.8%)	50 (61.0%)	19 (100.0%)	14 (77.8%)
Teaching Payment	58 (48.3%)	28 (59.6%)	30 (41.7%)	5 (29.4%)	7 (46.7%)	46 (52.9%)	38 (46.3%)	10 (52.6%)	10 (55.6%)
Quality Prescribing Incentive (QPI)	52 (43.3%)	18 (38.3%)	34 (47.2%)	6 (35.3%)	2 (13.3%)	44 (50.6%)	34 (41.5%)	12 (63.2%)	6 (33.3%)
General Practitioner Aged Care Access Incentive	49 (40.8%)	22 (46.8%)	27 (37.5%)	8 (47.1%)	4 (26.7%)	37 (42.5%)	28 (34.1%)	13 (68.4%)	8 (44.4%)
Rural Loading Incentive	23 (19.2%)	7 (14.9%)	16 (22.2%)	1 (5.9%)	8 (53.3%)	14 (16.1%)	2 (2.4%)	9 (47.4%)	12 (66.7%)
Procedural General Practitioner Payment	16 (13.3%)	8 (17.0%)	8 (11.1%)	3 (17.6%)	3 (20.0%)	10 (11.5%)	5 (6.1%)	6 (31.6%)	5 (27.8%)
Don't know/ no response	1 (0.8%)	1		1			1		

Source: Practice survey R1 Part A, Mar-Jun 2018, question 16.

Response	Min	25 th percentile	Median	Mean	75 th percentile	Max
Engaged leadership						
Practice principals	1	6	7.8	7.6	10	12
Clinical leaders	1	6	8	7.6	9	12
The practice's recruitment and training processes	1	6	7	7.2	9	12
The responsibility for conducting quality improvement activities	1	5	7	6.9	8.5	12
Patient enrolment						
Patients	1	6	7.6	7.4	9	12
Practice data	2	6	8	7.7	9.3	12
Patient records	1	7	8	8	10	12
Reports on care processes or outcomes of care	1	5	6.2	6.7	8.2	12
Quality improvement strategy						
Quality improvement activities	0	5	7	6.9	8.4	12
Performance measures	1	5	7	6.6	8	12
Quality improvement activities are conducted by	1	4	6	6.1	8	11
Clinical information systems that optimise use of information	1	5.6	7	7.3	9	12
Continuous & team based healing relationships						
Patients are encouraged to see their nominated GP & care team	3	7	9	8.6	10	12
Non-GP care team members	2	7	9	8.4	10	12
The practice	1	6	7.8	7.6	10	12
Organised, evidence-based care						
Comprehensive, guideline-based information on prevention or	3	7	8.4	83	9.4	12
chronic illness treatment	5	/	0.4	0.5	7.0	12
Visits	2	7	8.4	8.3	10	12
Care plans	3.2	7	9	8.7	10	12
Coordinated care management services for high-risk patients	1	6.1	8	7.7	10	12
Mental health, alcohol abuse and behaviour change outcomes	1	6	78	73	9	11
such as improvement in depression	•	0	7.0	7.0	/	
Patient-centred interactions						
Assessing and respecting patient and family values & preferences	4	7	8.9	8.5	10	12
Involving patients in decision-making and care	2	6.8	8	7.9	9.1	12

Table 34 – Consensus score agreed for each item of the HCH-A, baseline

Response	Min	25 th	Median	Mean	75 th	Max
· ·		percentile			percentile	
Patient comprehension of verbal and written materials	1	6	7	7.4	9	12
Self-management support	1.8	6	7	7.2	9	12
The principles of patient-centred care	2	5.9	7	7.2	9	12
Measurement of patient-centred interactions	1	3	5	5.5	7	12
Care coordination						
Medical and surgical specialty services	1	6	7	7.2	9	12
Mental health services	2	6	7	7	8	12
Patients in need of specialty care, hospital care, or supportive	З	7	8	7 9	0	12
community- based resources	5	/	0	7.7	/	12
Follow-up by the practice and care team with patients seen in the	1	6	7	7	8	12
emergency department or hospital		Ŭ	,	,	Ŭ	12
Linking patients to supportive community- based resources	1	6	7	7.5	8.9	54
Test results and care plans	5	8	9	8.9	10	12
Enhanced access						
Appointment systems	2	8	9.8	9.3	11	12
Contacting the care team during regular business hours	1	7	9	8.4	9.4	12
After-hours access	1	6	8	7.6	9	12
A patient's out of pocket expenses	2.6	7	8	8.1	9.1	12

Source: Practice survey R1 Part A, Mar-Jun 2018, question 1.

Table 35 – Number of people who participated in HCH-A, baseline

Response	Total staff participating in HCH-A	Mean staff per practice (practices responding)
GPs	185	1.57
Nurses	160	1.36
Practice managers	92	0.78
Aboriginal health practitioners	12	0.10
Allied health	13	0.11
Reception/admin	159	1.35
Other	32	0.27
Total	653	5.53

Source: Practice survey R1 Part A, Mar-Jun 2018, question 2.

	Total	Size		Туре			Location		
Response		Large/ medium	Small/sole	Corporate	AMS	Independent	MMM 1	MMM 2/3	MMM 4+
Yes	51 (43.2%)	19 (41.3%)	32 (44.4%)	7 (38.9%)	5 (33.3%)	39 (45.9%)	37 (44.6%)	8 (47.1%)	6 (33.3%)
No	67 (56.8%)	27 (58.7%)	40 (55.6%)	11 (61.1%)	10 (66.7%)	46 (54.1%)	46 (55.4%)	9 (52.9%)	12 (66.7%)

Table 36 - PHN practice facilitator assisted practice in the reaching consensus on HCH-A, baseline

Source: Practice survey R1 Part A, Mar-Jun 2018, question 3.

Table 37 – Practice focused on enrolling patients in HCH with specific chronic illnesses

		Size			Туре		Location		
Response	Total	Large/ medium	Small/sole	Corporate	AMS	Independent	MMM 1	MMM 2/3	MMM 4+
Yes - focused chronic illnesses	23 (25.0%)	12 (30.8%)	11 (21.2%)	1 (7.7%)		22 (31.0%)	19 (26.0%)	3 (37.5%)	1 (10.0%)
Diabetes	15 (16.3%)	9 (23.1%)	6 (11.5%)	1 (7.7%)		14 (19.7%)	13 (17.8%)	2 (25.0%)	
COPD	9 (9.8%)	6 (15.4%)	3 (5.8%)			9 (12.7%)	6 (8.2%)	2 (25.0%)	1 (10.0%)
CHD	7 (7.6%)	3 (7.7%)	4 (7.7%)	1 (7.7%)		6 (8.5%)	6 (8.2%)	1 (12.5%)	
Asthma	3 (3.3%)	3 (7.7%)				3 (4.2%)	3 (4.1%)		
Arthritis	2 (2.2%)	2 (5.1%)		1 (7.7%)		1 (1.4%)	2 (2.7%)		
Hyperlipidaemia	2 (2.2%)	1 (2.6%)	1 (1.9%)			2 (2.8%)	2 (2.7%)		
Hypertension	2 (2.2%)	1 (2.6%)	1 (1.9%)			2 (2.8%)	2 (2.7%)		
CHF	1 (1.1%)		1 (1.9%)			1 (1.4%)	1 (1.4%)		
Dementia	1 (1.1%)		1 (1.9%)			1 (1.4%)	1 (1.4%)		
Lung cancer	1 (1.1%)		1 (1.9%)			1 (1.4%)	1 (1.4%)		
Mental illness	1 (1.1%)		1 (1.9%)			1 (1.4%)	1 (1.4%)		
Obesity	1 (1.1%)	1 (2.6%)				1 (1.4%)	1 (1.4%)		
Stroke	1 (1.1%)		1 (1.9%)			1 (1.4%)	1 (1.4%)		
No	68 (73.9%)	27 (69.2%)	41 (78.8%)	12 (92.3%)	7 (100.0%)	49 (69.0%)	54 (74.0%)	5 (62.5%)	9 (90.0%)
Don't know/ no response	1 (1.1%)		1		1				1

Source: Practice survey R2, Nov 2018-Mar 2019, question 1.

Response by practice status	The process was very smooth	We had some challenges, but we overcame them	We experienced ongoing difficulties	Don't know/ no response							
Ease of use of the risk stratification software and associated processes											
Active	17 (18.7%)	61 (67.0%)	13 (14.3%)	1							
Withdrawn	5 (38.5%)	4 (30.8%)	4 (30.8%)								
Rating of the administrative processes for enrolling patients in HCH											
Active	21 (23.1%)	57 (62.6%)	13 (14.3%)	1							
Withdrawn	2 (16.7%)	7 (58.3%)	3 (25.0%)	1							

Table 38 – Ease of use of the risk stratification software/ patient enrolment

Source: Practice survey R2, Nov 2018-Mar 2019, questions 2 & 13.

Table 39 – Did the practice use the GP override function

		Siz	ze		Туре		Location		
Response	Total	Large/ medium	Small/sole	Corporate	AMS	Independent	MMM 1	MMM 2/3	MMM 4+
Yes - reason for using this function	53 (57.6%)	24 (63.2%)	29 (58.0%)	10 (76.9%)	5 (71.4%)	38 (55.9%)	44 (62.9%)	3 (37.5%)	6 (60.0%)
Missed by PRM	15 (16.3%)	9 (23.7%)	6 (12.0%)	6 (46.2%)	2 (28.6%)	7 (10.3%)	12 (17.1%)		3 (30.0%)
Psychosocial	11 (12.0%)	5 (13.2%)	6 (12.0%)			11 (16.2%)	8 (11.4%)	2 (25.0%)	1 (10.0%)
Multiple diseases	4 (4.3%)	1 (2.6%)	3 (6.0%)			4 (5.9%)	3 (4.3%)	1 (12.5%)	
Cancer	3 (3.3%)	1 (2.6%)	2 (4.0%)			3 (4.4%)	2 (2.9%)	1 (12.5%)	
Carer stress/availability	3 (3.3%)	1 (2.6%)	2 (4.0%)			3 (4.4%)	2 (2.9%)	1 (12.5%)	
Auto immune diseases	2 (2.2%)	1 (2.6%)	1 (2.0%)			2 (2.9%)	1 (1.4%)		1 (10.0%)
Disability	2 (2.2%)		2 (4.0%)			2 (2.9%)	2 (2.9%)		
Financial	2 (2.2%)		2 (4.0%)			2 (2.9%)	1 (1.4%)	1 (12.5%)	
Osteoporosis	2 (2.2%)	2 (5.3%)		1 (7.7%)		1 (1.5%)	1 (1.4%)	1 (12.5%)	
Other heart	2 (2.2%)	2 (5.3%)		1 (7.7%)	1 (14.3%)		1 (1.4%)		1 (10.0%)
Age	1 (1.1%)	1 (2.6%)		1 (7.7%)			1 (1.4%)		
Acromegaly	1 (1.1%)	1 (2.6%)		1 (7.7%)			1 (1.4%)		
Dementia	1 (1.1%)	1 (2.6%)		1 (7.7%)			1 (1.4%)		
Haematological	1 (1.1%)	1 (2.6%)				1 (1.5%)	1 (1.4%)		

		Size		Туре			Location		
Response	Total	Large/ medium	Small/sole	Corporate	AMS	Independent	MMM 1	MMM 2/3	MMM 4+
Health literacy	1 (1.1%)	1 (2.6%)				1 (1.5%)	1 (1.4%)		
Homelessness	1 (1.1%)		1 (2.0%)			1 (1.5%)	1 (1.4%)		
MS	1 (1.1%)	1 (2.6%)				1 (1.5%)	1 (1.4%)		
Obesity	1 (1.1%)		1 (2.0%)			1 (1.5%)		1 (12.5%)	
Rheumatological	1 (1.1%)	1 (2.6%)				1 (1.5%)	1 (1.4%)		
Sleep apnoea	1 (1.1%)	1 (2.6%)		1 (7.7%)			1 (1.4%)		
No	35 (38.0%)	14 (36.8%)	21 (42.0%)	3 (23.1%)	2 (28.6%)	30 (44.1%)	26 (37.1%)	5 (62.5%)	4 (40.0%)
Don't know/ no response	4 (4.3%)	1	3		1	3	3		1

Source: Practice survey R2, Nov 2018-Mar 2019, question 4.

Table 40 – Usefulness of the HARP tool/ My Health Record

Response	Very useful	Moderately useful	Limited usefulness	Not useful	Don't know/ no response
Usefulness of the HARP tool for assessing the care needs of patients	13 (14.6%)	36 (40.4%)	30 (33.7%)	10 (11.2%)	3
Usefulness of My Health Record for sharing care plans with patients and/ or their carer/ family	9 (14.8%)	9 (14.8%)	20 (32.8%)	23 (37.7%)	31

Source: Practice survey R2, Nov 2018-Mar 2019, questions 8 & 17.

Table 41 – Percentage of patients approached to enroll in HCH who actually enrolled (including responses from withdrawn practices)

Response by practice status	0% - 20%	20% - 40%	40% - 60%	60% - 80%	80% - 100%	Don't know/ no response
Active	15 (16.7%)	7 (7.8%)	11 (12.2%)	16 (17.8%)	41 (45.6%)	2
Withdrawn	4 (33.3%)	1 (8.3%)	1 (8.3%)	3 (25.0%)	3 (25.0%)	1

Source: Practice survey R2, Nov 2018-Mar 2019, question 11.

		Size			Туре		Location		
Response	Total	Large/ medium	Small/sole	Corporate	AMS	Independent	MMM 1	MMM 2/3	MMM 4+
Yes	34 (37.0%)	9 (23.1%)	25 (49.0%)	3 (23.1%)	3 (50.0%)	28 (39.4%)	26 (35.6%)	2 (25.0%)	6 (66.7%)
No	56 (60.9%)	30 (76.9%)	26 (51.0%)	10 (76.9%)	3 (50.0%)	43 (60.6%)	47 (64.4%)	6 (75.0%)	3 (33.3%)
Don't know/ no response	2 (2.2%)		2		2				2

Table 42 – Did processes for shared care planning and review change from before HCH

Source: Practice survey R2, Nov 2018-Mar 2019, question 15.

Table 43 – Main ways in which shared care planning and review processes changed following HCH implementation

Response	n (%)	Response	n (%)		
Share care plans are more detailed	8 (8.7%)	Patient reviews can be done by phone	2 (2.2%)		
Implemented electronic shared care / went online	6 (6.5%)	More regular reviews	1 (1.1%)		
Shared care planning can be more easily forwarded to	3 (3 3%)	Use of a patient centred measure to add more patient	1 (1 1%)		
specialist and AH workers	0 (0.076)	goals	1 (1.170)		
Patient had more input	2 (2.2%)				

Source: Practice survey R2, Nov 2018-Mar 2019, question 15.

Table 44 – Main ways that the practice shares care plans with HCH patients and their carers or family (multiple may apply)

		Siz	ze		Туре			Location	
Response	Total	Large/ medium	Small/sole	Corporate	AMS	Independent	MMM 1	MMM 2/3	MMM 4+
We give a printed version of the care plan to the patient and/or their carer/ family	58 (63.0%)	25 (64.1%)	33 (67.3%)	9 (69.2%)	4 (66.7%)	45 (65.2%)	47 (66.2%)	6 (75.0%)	5 (55.6%)
We email an electronic version of the care plan to the patient and/or their carer/ family	7 (7.6%)	2 (5.1%)	5 (10.2%)	1 (7.7%)		6 (8.7%)	7 (9.9%)		
We give the patient and/ or their carer/ family access to the care plan via a patient portal or through shared care planning software	23 (25.0%)	9 (23.1%)	14 (28.6%)	4 (30.8%)		19 (27.5%)	19 (26.8%)	2 (25.0%)	2 (22.2%)

			ze	Туре			Location		
Response	Total	Large/ medium	Small/sole	Corporate	AMS	Independent	MMM 1	MMM 2/3	MMM 4+
We load the patient's care plan into their My Health Record	23 (25.0%)	9 (23.1%)	14 (28.6%)	3 (23.1%)	3 (50.0%)	17 (24.6%)	18 (25.4%)	3 (37.5%)	2 (22.2%)
Other: Link it to the EHR/ allow patient to access	4 (4.3%)	1 (2.6%)	3 (6.1%)			4 (5.8%)	4 (5.6%)		
Other: Patient can have hard copy if they request it	2 (2.2%)	2 (5.1%)			1 (16.7%)	1 (1.4%)	1 (1.4%)		1 (11.1%)
Other: Verbally	2 (2.2%)	1 (2.6%)	1 (2.0%)			2 (2.9%)	1 (1.4%)	1 (12.5%)	
Other	7 (7.6%)	5 (12.8%)	2 (4.1%)	2 (15.4%)		5 (7.2%)	6 (8.5%)		1 (11.1%)
Don't know/ no response	4 (4.3%)		4		2	2	2		2

Source: Practice survey R2, Nov 2018-Mar 2019, question 16.

		Siz	ze		Туре			Location		
Response	Total	Large/ medium	Small/sole	Corporate	AMS	Independent	MMM 1	MMM 2/3	MMM 4+	
We send a paper version of the shared care plan to relevant clinicians	50 (54.3%)	24 (61.5%)	26 (52.0%)	7 (53.8%)		43 (61.4%)	44 (61.1%)	5 (62.5%)	1 (11.1%)	
Clinicians outside of the practice/ service can access a patient's plan by logging into a common shared care planning software application	24 (26.1%)	11 (28.2%)	13 (26.0%)	4 (30.8%)	2 (33.3%)	18 (25.7%)	20 (27.8%)	1 (12.5%)	3 (33.3%)	
We email an electronic copy of the plan to relevant clinicians	14 (15.2%)	7 (17.9%)	7 (14.0%)			14 (20.0%)	11 (15.3%)	1 (12.5%)	2 (22.2%)	
We load the plan into the patient's My Health Record	14 (15.2%)	7 (17.9%)	7 (14.0%)	2 (15.4%)	2 (33.3%)	10 (14.3%)	12 (16.7%)		2 (22.2%)	
Other: Fax	9 (9.8%)	6 (15.4%)	3 (6.0%)	4 (30.8%)	1 (16.7%)	4 (5.7%)	8 (11.1%)	1 (12.5%)		
Other: Linked HER	9 (9.8%)	5 (12.8%)	4 (8.0%)	2 (15.4%)		7 (10.0%)	9 (12.5%)			
Other: Patient passes it on	1 (1.1%)		1 (2.0%)			1 (1.4%)	1 (1.4%)			
Other	5 (5.4%)	1 (2.6%)	4 (8.0%)		2 (33.3%)	3 (4.3%)	1 (1.4%)	1 (12.5%)	3 (33.3%)	
Don't know/ no response	3 (3.3%)		3		2	1	1		2	

Table 45 – Main ways that the practice shares care plans with clinicians outside the practice involved in the care of the patient (multiple may

Source: Practice survey R2, Nov 2018-Mar 2019, question 18.

Table 46 – Shared care planning software implemented by practice

Response	n (%)	Response	n (%)
cdmNet Coordinated Care Platform (Precedence Health	52 (56 5%)	Other: PCEHP	1 (1 1%)
Care)	52 (50.576)		1 (1.170)
LinkedEHR	24 (26.1%)	Other: Purpose built / their own	1 (1.1%)
Other: Care monitor app	1 (1.1%)	Other	11 (12.0%)
Other: Communicate	1 (1.1%)	Don't know/ no response	3 (3.3%)

Source: Practice survey R2, Nov 2018-Mar 2019, question 19.

Table 47 – Ease of using My Health Record for sharing care plans with other clinicians outside the practice (including responses from withdrawn practices)

Response by practice status	Very easy	Easy	Neutral	Difficult	Very difficult	Don't know/ no response
Active	6 (7.1%)	13 (15.3%)	48 (56.5%)	9 (10.6%)	9 (10.6%)	7
Withdrawn		2 (18.2%)	9 (81.8%)			2

Source: Practice survey R2, Nov 2018-Mar 2019, question 20.

Table 48 – Practice has a standardised tool for assessing level of activation for HCH patients

Response	n (%)
Yes - used tool	16 (17.4%)
Clinic developed tool	1 (1.1%)
HappyOrNot	1 (1.1%)
HARP	1 (1.1%)
PAM	1 (1.1%)
PCMH tool	1 (1.1%)
No	72 (78.3%)
Don't know/ no response	4 (4.3%)
	0010 // 01

Source: Practice survey R2, Nov 2018-Mar 2019, question 21.

Table 47 Treestes for providing care to panetite with encodes changed toke wing northing terremained										
		Size			Туре		Location			
Response	Total	Large/ medium	Small/sole	Corporate	AMS	Independent	MMM 1	MMM 2/3	MMM 4+	
Yes	50 (54.3%)	23 (59.0%)	27 (54.0%)	7 (53.8%)	2 (33.3%)	41 (58.6%)	40 (55.6%)	5 (62.5%)	5 (55.6%)	
No	39 (42.4%)	16 (41.0%)	23 (46.0%)	6 (46.2%)	4 (66.7%)	29 (41.4%)	32 (44.4%)	3 (37.5%)	4 (44.4%)	
Don't know/ no response	3 (3.3%)		3		2	1	1		2	

Table 49 – Processes for providing care to patients with chronic illnesses changed following HCH implementation

Source: Practice survey R2, Nov 2018-Mar 2019, question 23.

Table 50 – Main ways in which processes for providing care to patients with chronic illnesses changed following HCH implementation

Response	n (%)	Response	n (%)
Nurses have more responsibility: patients can see the nurse for routine health checks, care planning, education, goals, and care monitoring	18 (19.6%)	More comprehensive care plans	2 (2.2%)
Additional contact/access to the practice nurse or admin staff through phone and email	11 (12.0%)	More proactive rather than reactive model of care	2 (2.2%)
Improved external and/or internal team care involvement and communication	11 (12.0%)	New payment structure that compensates for more chronic care services and additional health professionals beyond GPs	2 (2.2%)
Office contacting patients more via phone/email to discuss condition, recall, results, etc.	9 (9.8%)	Upskilling staff members	2 (2.2%)
Nurses or HCH coordinator performing recall duties to monitor patients' conditions	8 (8.7%)	Care reviews	1 (1.1%)
Patients can request prescription refills and/or referrals without seeing the GP	7 (7.6%)	Clinicians able to do administrative work offsite	1 (1.1%)
Additional contact/access to the GP	6 (6.5%)	Dedicated email, phone line to HCH patients	1 (1.1%)
Enhanced IT systems and new applications/services to improve quality of patient care	5 (5.4%)	Improved care management of chronic disease patients	1 (1.1%)
New patient activities such as clinics, meetings, groups, education sessions	5 (5.4%)	Introduction of new team members	1 (1.1%)
Generally improved patient access to care/resources and continuity of care	3 (3.3%)	More regular patient check-ups	1 (1.1%)
Additional patient time with staff members	2 (2.2%)		

Source: Practice survey R2, Nov 2018-Mar 2019, question 23.

Response	n (%)	Worked prior to HCH	Monitoring measures (in order of frequency)
Improved IT practice systems and data tracking or more accurate patient data collection, monitoring, and records	28 (30.4%)	17 (18.5%)	Improved IT practice systems and data tracking or more accurate patient data collection, monitoring, and records; Generally improved care management/model of care; Improved practice recall processes; Improved care planning; Improving patient education, involvement, knowledge, and self-management; Increased practice-patient contact and access to GP/nurses through electronic communication, email, and phone; Nurses have more responsibility or involvement in patient care; Patient feedback; Patient satisfaction/experience; Regular patient assessments, reviews, and/or check-ups.
More external and internal integrated team care and communication	23 (25.0%)	7 (7.6%)	Improved IT practice systems and data tracking or more accurate patient data collection, monitoring, and records; Improved care planning; Increased practice-patient contact and access to GP/nurses through electronic communication, email, and phone; Improved billing services; More external and internal integrated team care and communication; More patient and/or practice staff feedback; Patient satisfaction/experience; Improved health outcomes; Improving patient education, involvement, knowledge, and self-management; Nurses have more responsibility or involvement in patient care; Pharmacist medication reviews/monitoring.
Increased practice-patient contact and access to GP/nurses through electronic communication, email, and phone	19 (20.7%)	4 (4.3%)	Improved IT practice systems and data tracking or more accurate patient data collection, monitoring, and records; Additional time for GPs; Generally improved care management/model of care; Improved billing services; Increased practice-patient contact and access to GP/nurses through electronic communication, email, and phone; More patient and/or practice staff feedback; Nurses have more responsibility or involvement in patient care; Patient satisfaction/experience.
Nurses have more responsibility or involvement in patient care	16 (17.4%)	7 (7.6%)	Improved IT practice systems and data tracking or more accurate patient data collection, monitoring, and records; Increased practice-patient contact and access to GP/nurses through electronic communication, email, and phone; Use of self-reporting methods (i.e. surveys); Additional time for GPs; Improved billing services; Improved care planning; Improved practice recall processes; More external and internal integrated team care and communication; New patient activities such as clinics, meetings, groups, education sessions; Nurses have more responsibility or involvement in patient care; Patients able to request referrals or prescriptions without seeing the GP; Regular patient assessments, reviews, and/or checkups.

Table 51 – Improvements in clinical care/chronic disease management that will be a focus during HCH implementation

Response	n (%)	Worked prior to HCH	Monitoring measures (in order of frequency)
Improving patient education, involvement, knowledge, and self-management	14 (15.2%)	5 (5.4%)	Improved IT practice systems and data tracking or more accurate patient data collection, monitoring, and records; Improving patient education, involvement, knowledge, and self- management; Increased practice-patient contact and access to GP/nurses through electronic communication, email, and phone; Nurses have more responsibility or involvement in patient care; Patient satisfaction/experience; Patients able to request referrals or prescriptions without seeing the GP; Patients able to see the nurse for general care management without seeing the GP; Use of self-reporting methods (i.e. surveys).
New patient activities such as clinics, meetings, groups, education sessions	14 (15.2%)	5 (5.4%)	Improved IT practice systems and data tracking or more accurate patient data collection, monitoring, and records; Use of self-reporting methods (i.e. surveys); Generally improved care management/model of care; Improved care planning; More team meetings/case conferencing; Patient feedback; Regular patient assessments, reviews, and/or check-ups.
Improved practice recall processes	13 (14.1%)	6 (6.5%)	Improved practice recall processes; Improved IT practice systems and data tracking or more accurate patient data collection, monitoring, and records; Improved care planning; Nurses have more responsibility or involvement in patient care.
Improved care planning	12 (13.0%)	4 (4.3%)	Improved IT practice systems and data tracking or more accurate patient data collection, monitoring, and records; Improved care planning; Improved health outcomes; Generally improved care management/model of care; Improved practice recall processes; More patient and/or practice staff feedback; New patient activities such as clinics, meetings, groups, education sessions; Nurses have more responsibility or involvement in patient care.
Generally improved care management/model of care	10 (10.9%)	6 (6.5%)	Improved practice recall processes; Improved IT practice systems and data tracking or more accurate patient data collection, monitoring, and records; New patient activities such as clinics, meetings, groups, education sessions; Improved health outcomes; Improving patient education, involvement, knowledge, and self-management.
Regular patient assessments, reviews, and/or check-ups	9 (9.8%)	5 (5.4%)	Improved IT practice systems and data tracking or more accurate patient data collection, monitoring, and records; Improved practice recall processes; Improved care planning
More team meetings/case conferencing	6 (6.5%)	4 (4.3%)	More team meetings/case conferencing; Generally improved care management/model of care; Patient satisfaction/experience.
Patients able to request referrals or prescriptions without seeing the GP	6 (6.5%)	1 (1.1%)	Improved practice recall processes; Additional time for GPs; Nurses have more responsibility or involvement in patient care; Patients able to request referrals or prescriptions without seeing the GP; Regular patient assessments, reviews, and/or check-ups.

Response	n (%)	Worked prior to HCH	Monitoring measures (in order of frequency)
Patients able to see the nurse for general care management without seeing the GP	6 (6.5%)	2 (2.2%)	Regular patient assessments, reviews, and/or check-ups; Nurses have more responsibility or involvement in patient care; Patients able to request referrals or prescriptions without seeing the GP; Use of self-reporting methods (i.e. surveys).
Reduction in patient waiting times and increased flexibility for patients	5 (5.4%)	2 (2.2%)	Improved IT practice systems and data tracking or more accurate patient data collection, monitoring, and records; Increased practice-patient contact and access to GP/nurses through electronic communication, email, and phone; Reduction in patient waiting times and increased flexibility for patients.
Upskilling staff members	4 (4.3%)	3 (3.3%)	Improved care planning; Improved IT practice systems and data tracking or more accurate patient data collection, monitoring, and records; Improved practice recall processes; More external and internal integrated team care and communication; Upskilling staff members.
Additional time for GPs	3 (3.3%)	0 (0.0%)	Improved practice recall processes; Increased practice-patient contact and access to GP/nurses through electronic communication, email, and phone; More external and internal integrated team care and communication; Nurses have more responsibility or involvement in patient care.
Improved billing services	3 (3.3%)	2 (2.2%)	Improved billing services; More external and internal integrated team care and communication.
Patient satisfaction/experience	3 (3.3%)	1 (1.1%)	Use of self-reporting methods (i.e. surveys).
Pharmacist medication reviews/monitoring	3 (3.3%)	1 (1.1%)	Improved IT practice systems and data tracking or more accurate patient data collection, monitoring, and records; More team meetings/case conferencing.
Improved continuity of care	2 (2.2%)	2 (2.2%)	Improved IT practice systems and data tracking or more accurate patient data collection, monitoring, and records.
Improved health outcomes	2 (2.2%)	0 (0.0%)	Improved care planning; Improved health outcomes.
Improved patient identification methods	2 (2.2%)	1 (1.1%)	Regular patient assessments, reviews, and/or check-ups.
Use of self-reporting methods (i.e. surveys)	2 (2.2%)	1 (1.1%)	Improved IT practice systems and data tracking or more accurate patient data collection, monitoring, and records; Improved health outcomes.
More patient and/or practice staff feedback	1 (1.1%)	0 (0.0%)	Improving patient education, involvement, knowledge, and self-management.

Source: Practice survey R2, Nov 2018-Mar 2019, question 24.

Response by practice status	Very effective	Moderately effective	A little effective	Ineffective	Don't know/ no response
Module 1: Overview of the HCH model					
Active	12 (15.6%)	34 (44.2%)	23 (29.9%)	8 (10.4%)	15
Withdrawn	1 (10.0%)	5 (50.0%)	4 (40.0%)		3
Module 2: Engaged leadership			· · · · · · · · · · · · · · · · · · ·		
Active	11 (14.9%)	32 (43.2%)	20 (27.0%)	11 (14.9%)	18
Withdrawn		5 (50.0%)	5 (50.0%)		3
Module 3: Patient enrolment (incl. risk stratification) and	payment proces	ses			
Active	14 (18.9%)	31 (41.9%)	18 (24.3%)	11 (14.9%)	18
Withdrawn		6 (60.0%)	4 (40.0%)		3
Module 4: Data-driven improvement			· · · · · · · · · · · · · · · · · · ·		
Active	14 (19.4%)	28 (38.9%)	21 (29.2%)	9 (12.5%)	20
Withdrawn		4 (40.0%)	6 (60.0%)		3
Module 5: Team-based care			· · · · · · · · · · · · · · · · · · ·		
Active	15 (21.1%)	29 (40.8%)	19 (26.8%)	8 (11.3%)	21
Withdrawn		7 (70.0%)	3 (30.0%)		3
Module 6: Developing and implementing the shared ca	ire plan				
Active	12 (17.9%)	28 (41.8%)	16 (23.9%)	11 (16.4%)	25
Withdrawn		6 (60.0%)	4 (40.0%)		3
Module 7: Patient-team partnership			· · · · · · · · · · · · · · · · · · ·		
Active	12 (17.9%)	24 (35.8%)	22 (32.8%)	9 (13.4%)	25
Withdrawn	1 (11.1%)	4 (44.4%)	4 (44.4%)		4
Module 8: Comprehensiveness and care coordination					
Active	10 (15.4%)	25 (38.5%)	19 (29.2%)	11 (16.9%)	27
Withdrawn	1 (11.1%)	5 (55.6%)	3 (33.3%)		4
Module 9: Prompt access to care					
Active	12 (18.5%)	24 (36.9%)	20 (30.8%)	9 (13.8%)	27
Withdrawn	1 (12.5%)	4 (50.0%)	3 (37.5%)		5
Module 10: Prompt access to care					
Active	12 (18.5%)	24 (36.9%)	19 (29.2%)	10 (15.4%)	27

Table 52 – Rating of the effectiveness of the HCH online training modules

Response by practice status	Very effective	Moderately effective	A little effective	Ineffective	Don't know/ no response			
Withdrawn	1 (12.5%)	4 (50.0%)	3 (37.5%)		5			
Module 11: Population management								
Active	9 (13.8%)	27 (41.5%)	18 (27.7%)	11 (16.9%)	27			
Withdrawn		3 (42.9%)	4 (57.1%)		6			
Module 12: Quality primary care and the future								
Active	11 (17.5%)	26 (41.3%)	16 (25.4%)	10 (15.9%)	29			
Withdrawn	1 (14.3%)	2 (28.6%)	4 (57.1%)		6			

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

Table 53 – A PHN practice facilitator helped the practice prepare for HCH and/or provided ongoing support for HCH implementation

		Size		Туре			Location		
Response	Total	Large/ medium	Small/sole	Corporate	AMS	Independent	MMM 1	MMM 2/3	MMM 4+
Yes	86 (93.5%)	37 (94.9%)	49 (98.0%)	12 (92.3%)	6 (100.0%)	68 (97.1%)	70 (97.2%)	7 (87.5%)	9 (100.0%)
No	3 (3.3%)	2 (5.1%)	1 (2.0%)	1 (7.7%)		2 (2.9%)	2 (2.8%)	1 (12.5%)	
Don't know/ no response	3 (3.3%)		3		2	1	1		2

Source: Practice survey R2, Nov 2018-Mar 2019, question 27.

Table 54 – Staff from the practice participated in training workshops organised by the PHN

		Size		Туре			Location		
Response	Total	Large/ medium	Small/sole	Corporate	AMS	Independent	MMM 1	MMM 2/3	MMM 4+
Yes	67 (72.8%)	27 (69.2%)	40 (80.0%)	8 (61.5%)	4 (66.7%)	55 (78.6%)	57 (79.2%)	4 (50.0%)	6 (66.7%)
No	22 (23.9%)	12 (30.8%)	10 (20.0%)	5 (38.5%)	2 (33.3%)	15 (21.4%)	15 (20.8%)	4 (50.0%)	3 (33.3%)
Don't know/ no response	3 (3.3%)		3		2	1	1		2

Source: Practice survey R2, Nov 2018-Mar 2019, question 28.

Table 55 – Pharmacist who visits/works in the practice

	Size				Туре		Location		
Response	Total	Large/ medium	Small/sole	Corporate	AMS	Independent	MMM 1	MMM 2/3	MMM 4+
Yes	42 (45.7%)	20 (51.3%)	22 (44.0%)	4 (30.8%)	5 (83.3%)	33 (47.1%)	33 (45.8%)	5 (62.5%)	4 (44.4%)
No	47 (51.1%)	19 (48.7%)	28 (56.0%)	9 (69.2%)	1 (16.7%)	37 (52.9%)	39 (54.2%)	3 (37.5%)	5 (55.6%)
Don't know/ no response	3 (3.3%)		3		2	1	1		2

Source: Practice survey R2, Nov 2018-Mar 2019, question 31.

Table 56 – Relationship does the pharmacist has with the practice

		Size		Туре			Location		
Response	Total	Large/ medium	Small/sole	Corporate	AMS	Independent	MMM 1	MMM 2/3	MMM 4+
Community pharmacist who									
works closely with the	27 (29.3%)	16 (69.6%)	11 (44.0%)	3 (60.0%)	1 (20.0%)	23 (60.5%)	20 (54.1%)	4 (80.0%)	3 (50.0%)
practice									
Pharmacist supported under									
another arrangement (e.g.									
hospital clinical pharmacist	8 (8.7%)	2 (8.7%)	6 (24.0%)	1 (20.0%)	2 (40.0%)	5 (13.2%)	6 (16.2%)		2 (33.3%)
integrated with/ visiting the									
practice)									
Pharmacist employed by the	6 (6 5%)	3 (13.0%)	3 (12 0%)		2 (40.0%)	4 (10 5%)	4 (10.8%)	1 (20.0%)	1 (16 7%)
practice	0 (0.070)	0 (10.070)	0 (12.070)		2 (40.070)	4 (10.070)	4 (10.070)	1 (20.070)	1 (10.770)
PHN grant or support	3 (3.3%)	1 (4.3%)	2 (8.0%)			3 (7.9%)	3 (8.1%)		
Other	4 (4.3%)	1 (4.3%)	3 (12.0%)	1 (20.0%)		3 (7.9%)	4 (10.8%)		
Don't know/ no response	44 (47.8%)	16	28	8	3	33	36	3	5

Source: Practice survey R2, Nov 2018-Mar 2019, question 31.

Response	n (%)	Response	n (%)
Reduce general administrative burden and streamline program processes	12 (11.4%)	Simplify care planning process and/or make care plans more accessible	4 (3.8%)
Additional support around IT software and troubleshooting and better integrated/implement IT software	8 (7.6%)	Additional training	3 (2.9%)
Simplify enrolment process and provide additional training/support	8 (7.6%)	Improve communication and accessibility between practices and the PHN facilitators, IT vendors, and/or government	3 (2.9%)
More guidance, structure, and/or organization around the program	5 (4.8%)	Additional focus on GP education and engagement	2 (1.9%)
Provide additional funding	5 (4.8%)	Increase awareness and knowledge of the program	2 (1.9%)
Simplify information, implementation process, and make training/education more concise	5 (4.8%)	More time reserved for clinicians and health professionals for program education, recruitment, implementation, etc.	2 (1.9%)
Focus on individual practice issues, size, and specific patient population in order to successfully implement HCH	4 (3.8%)	Lower enrolment requirements	1 (1.0%)
More transparency and guidance around requirements,			
program purpose, additional work required to implement	4 (3.8%)	More initial support and training implementing the program	1 (1.0%)
HCH, updates, deadlines			
Simplify and improve payment processes	4 (3.8%)		

Table 57 – Other comments about implementing HCH in the practice (including responses from withdrawn practices)

Source: Practice survey R2, Nov 2018-Mar 2019, question 32.

Appendix 2 – Practice staff surveys: Additional tables and figures

Response	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Don't know/ no response
agrees with statements about the primary care team and patients sharing responsibility for managing patients' health	313 (75.8%)	76 (18.4%)	16 (3.9%)	7 (1.7%)	1 (0.2%)	12
is made up of members with clearly defined roles, such as responsibility for patient self-management education, proactive follow up, and resource coordination	280 (68.3%)	98 (23.9%)	13 (3.2%)	15 (3.7%)	4 (1.0%)	15
works with patients to help them understand their roles and responsibilities in care	318 (77.8%)	72 (17.6%)	15 (3.7%)	3 (0.7%)	1 (0.2%)	16
is characterised by collaboration and trust.	326 (79.7%)	63 (15.4%)	11 (2.7%)	8 (2.0%)	1 (0.2%)	16

Table 58 – Agreement with statements about the primary care team, baseline

Source: Practice staff survey R1, Mar-Jun 2018, question 5.

Table 59 – Difficulty in using practice clinical management system or ancillary systems to undertake selected tasks, baseline

Response	Very easy	Somewhat easy	Somewhat difficult	Very difficult	Don't know/ no response
Review basic pathology results	244 (74.6%)	68 (20.8%)	12 (3.7%)	3 (0.9%)	98
Update medication list and drug allergies for patients	166 (66.9%)	68 (27.4%)	12 (4.8%)	2 (0.8%)	177
Review information from hospital discharge summaries	156 (47.9%)	115 (35.3%)	52 (16.0%)	3 (0.9%)	99
Review notes about patients	249 (74.3%)	79 (23.6%)	6 (1.8%)	1 (0.3%)	90
Order new patient pathology tests	149 (77.2%)	38 (19.7%)	5 (2.6%)	1 (0.5%)	232
Prescribe medications	134 (77.9%)	32 (18.6%)	4 (2.3%)	2 (1.2%)	253

Response	Very easy	Somewhat easy	Somewhat difficult	Very difficult	Don't know/ no response
Communicate electronically with other providers	104 (33.2%)	118 (37.7%)	58 (18.5%)	33 (10.5%)	112
Send or print after-visit summaries, instructions, educational information for patients	164 (50.2%)	124 (37.9%)	30 (9.2%)	9 (2.8%)	98
Send or receive messages from patients	120 (38.0%)	107 (33.9%)	56 (17.7%)	33 (10.4%)	109
Develop a care plan/shared care plan for patients	117 (45.3%)	101 (39.1%)	31 (12.0%)	9 (3.5%)	167

Source: Practice staff survey R1, Mar-Jun 2018, question 7.

Table 60 – Agreement with statements about the primary care team using electronic data, baseline

Response	Always	Usually	Sometimes	Rarely	Never	Don't know/ no response
identify patients with complex health needs.	154 (40.6%)	150 (39.6%)	52 (13.7%)	22 (5.8%)	1 (0.3%)	46
monitor and track patient health indicators and outcomes.	143 (39.6%)	136 (37.7%)	62 (17.2%)	19 (5.3%)	1 (0.3%)	64
support the documentation of patient needs.	229 (59.5%)	114 (29.6%)	32 (8.3%)	7 (1.8%)	3 (0.8%)	40
develop care plans.	266 (68.0%)	90 (23.0%)	25 (6.4%)	5 (1.3%)	5 (1.3%)	34
determine clinical outcomes.	189 (52.4%)	119 (33.0%)	38 (10.5%)	8 (2.2%)	7 (1.9%)	64

Source: Practice staff survey R1, Mar-Jun 2018, question 8.



The primary care team used an electronic health record system or other electronic systems to...

Figure 7 – Staff perspectives, by type of staff, on the use of electronic health records and other electronic systems to identify patients with complex health needs, monitor patient outcomes, document patients' needs, develop care plans and determine clinical outcomes, baseline: Active practices at 31 August 2019

Source: Practice staff survey R1, Mar-Jun 2018.



Working as a team: The primary care team ...

Figure 8 – Staff perspectives on working as a team

Source: Practice staff survey Round 1



Communicating with and respecting patients: The

Figure 9 – Staff perspectives on aspects of communicating and working with patients Source: Practice staff survey R1, Mar-Jun 2018.



Developing, using and reviewing care plans: The primary care team...

Figure 10 – Staff perspectives on planning care for and with patients Source: Practice staff survey R1, Mar-Jun 2018.



Ensures other supports/interventions are considered: The primary care team...

Figure 11 – Staff perspectives on use of additional supportive services for patients Source: Practice staff survey R1, Mar-Jun 2018.



When a patient sees a specialist ..

Figure 12 – Staff perspectives on communications with medical specialists Source Practice staff survey R1, Mar-Jun 2018.



When patients are discharged from hospital ...



Source: Practice staff survey R1, Mar-Jun 2018.



Work and the work environment

Figure 14 – Staff responses to questions about their experience of their work and the work environment

Source: Practice staff survey R1, Mar-Jun 2018.

Appendix 3 – Patient surveys: Additional tables

Part A: Cross tabulations by patient tier and practice size

		İ	Ti	er			Size	
Respondents' characteristics	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value
A1 Sex		-			-			
Female	1,083 (54.4%)	246 (55.8%)	572 (55.5%)	239 (51.1%)	0.022	642 (54.2%)	441 (54.7%)	0.040
Male	908 (45.6%)	195 (44.2%)	459 (44.5%)	229 (48.9%)	0.233	543 (45.8%)	365 (45.3%)	0.849
A2 Age group								
00-24	18 (0.9%)	1 (0.2%)	8 (0.8%)	9 (1.9%)		3 (0.2%)	15 (1.8%)	
25-44	128 (6.4%)	26 (5.9%)	67 (6.5%)	33 (7.0%)		37 (3.1%)	91 (11.2%)	
45-64	551 (27.4%)	124 (28.2%)	270 (26.2%)	141 (29.9%)	<0.001	313 (26.1%)	238 (29.3%)	<0.001
65-74	658 (32.7%)	156 (35.5%)	364 (35.3%)	112 (23.7%)	<0.001	383 (31.9%)	275 (33.9%)	<0.001
75-84	513 (25.5%)	112 (25.5%)	256 (24.9%)	128 (27.1%)	1	364 (30.3%)	149 (18.3%)	
85+	144 (7.2%)	21 (4.8%)	65 (6.3%)	49 (10.4%)	1	100 (8.3%)	44 (5.4%)	
A3 Indigenous status (Q34)	<u>.</u>					· · · · · · · · · · · · · · · · · · ·		
Yes - Aboriginal or Torres Strait Islander	66 (3.3%)	8 (1.8%)	34 (3.3%)	24 (5.1%)	0.000	18 (1.5%)	48 (5.9%)	-0.001
No	1,936 (95.9%)	432 (98.2%)	990 (96.7%)	444 (94.9%)	0.022	1,177 (98.5%)	759 (94.1%)	<0.001
Don't know/ Refused	16 (0.8%)							
A4 Country of birth (Q35)								
Australia	1,379 (68.3%)	307 (69.6%)	686 (66.5%)	335 (71.0%)	0.296	805 (66.9%)	574 (70.8%)	0.002

Table 61 – Respondent characteristics by patient HCH tier and practice size

			Ti	er			Size	
Respondents' characteristics	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value
UK (including England, Scotland, Northern Ireland, Wales)	291 (14.4%)	65 (14.7%)	158 (15.3%)	57 (12.1%)		198 (16.4%)	93 (11.5%)	
India	43 (2.1%)	7 (1.6%)	26 (2.5%)	9 (1.9%)		23 (1.9%)	20 (2.5%)	
New Zealand	31 (1.5%)	12 (2.7%)	13 (1.3%)	6 (1.3%)		23 (1.9%)	8 (1.0%)	
Italy	18 (0.9%)	4 (0.9%)	8 (0.8%)	6 (1.3%)		9 (0.7%)	9 (1.1%)	
Greece	28 (1.4%)	3 (0.7%)	20 (1.9%)	5 (1.1%)		24 (2.0%)	4 (0.5%)	
Ireland	7 (0.3%)		5 (0.5%)	1 (0.2%)		4 (0.3%)	3 (0.4%)	
China	2 (0.1%)		1 (0.1%)	1 (0.2%)		1 (0.1%)	1 (0.1%)	
Other (please specify)	216 (10.7%)	43 (9.8%)	115 (11.1%)	52 (11.0%)		117 (9.7%)	99 (12.2%)	
Refused	3 (0.1%)							
A5 Highest level of education (Q36	5)	·		·				
Year 9 or below	427 (21.2%)	77 (17.6%)	215 (21.0%)	124 (26.7%)		261 (21.9%)	166 (20.7%)	
Year 10 or equivalent	326 (16.2%)	75 (17.1%)	171 (16.7%)	69 (14.8%)		204 (17.1%)	122 (15.2%)	
Year 11 or equivalent	112 (5.6%)	22 (5.0%)	65 (6.4%)	22 (4.7%)		66 (5.5%)	46 (5.7%)	
Year 12 or equivalent	244 (12.1%)	59 (13.5%)	116 (11.4%)	60 (12.9%)		147 (12.3%)	97 (12.1%)	
Certificate I to IV (including trade certificate)	416 (20.6%)	90 (20.5%)	208 (20.4%)	100 (21.5%)	0.040	251 (21.0%)	165 (20.6%)	0.142
Advanced diploma/Diploma	167 (8.3%)	43 (9.8%)	87 (8.5%)	29 (6.2%)		101 (8.5%)	66 (8.2%)	
Bachelor Degree	187 (9.3%)	50 (11.4%)	96 (9.4%)	36 (7.7%)	-	99 (8.3%)	88 (11.0%)	
Post-Graduate Degree	66 (3.3%)	16 (3.7%)	36 (3.5%)	9 (1.9%)		30 (2.5%)	36 (4.5%)	
Other	50 (2.5%)	6 (1.4%)	28 (2.7%)	16 (3.4%)		34 (2.8%)	16 (2.0%)	
Refused	23 (1.1%)							

			Ti	er			Size	
Respondents' characteristics	Total	Tier 1	Tier 2	Tier 3	p	Medium	Sole Small	p value
A6 Household composition (Q33)					Value	Luige	onnan	
Person living alone	486 (24.1%)	77 (17.4%)	248 (24.0%)	138 (29.2%)		283 (23.5%)	203 (25.0%)	
Couple only	934 (46.3%)	258 (58.4%)	494 (47.8%)	157 (33.3%)	1	618 (51.2%)	316 (38.9%)	
Couple with non-dependent child or children	168 (8.3%)	30 (6.8%)	90 (8.7%)	43 (9.1%)	-	102 (8.5%)	66 (8.1%)	
Couple with dependent child or children	148 (7.3%)	39 (8.8%)	75 (7.3%)	25 (5.3%)	<0.001	75 (6.2%)	73 (9.0%)	<0.001
Single parent with non- dependent child or children	85 (4.2%)	14 (3.2%)	28 (2.7%)	39 (8.3%)	-	38 (3.2%)	47 (5.8%)	
Single parent with dependent child or children	36 (1.8%)	2 (0.5%)	22 (2.1%)	12 (2.5%)	-	14 (1.2%)	22 (2.7%)	
Other household type	161 (8.0%)	22 (5.0%)	77 (7.4%)	58 (12.3%)		76 (6.3%)	85 (10.5%)	
A9 Help provided to patient and a	nswering the surve	ey						
Yes - answered for them (proxy)	113 (5.6%)	7 (1.6%)	34 (3.3%)	65 (13.8%)		72 (6.0%)	41 (5.0%)	
Yes - helped them answer some questions	75 (3.7%)	11 (2.5%)	37 (3.6%)	22 (4.7%)	<0.001	51 (4.2%)	24 (3.0%)	0.211
No - did not need any help	1,830 (90.7%)	424 (95.9%)	963 (93.1%)	385 (81.6%)	1	1,083 (89.8%)	747 (92.0%)	

			Ti	er			Size	
Patient use of HCH practice	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value
B1 HCH practice is the GP practice the	nat patient usua	lly attends (Q2)						
Yes	1,983 (98.3%)	434 (98.2%)	1,017 (98.5%)	462 (98.1%)	0.773	1,184 (98.2%)	799 (98.8%)	0.393
No	32 (1.6%)	8 (1.8%)	15 (1.5%)	9 (1.9%)		22 (1.8%)	10 (1.2%)	
Refused	3 (0.1%)							
B2 Length of time the patient has bee	en attending the	HCH practice	(Q3)					
Less than 6 months	34 (1.7%)	3 (0.7%)	9 (0.9%)	20 (4.3%)		12 (1.0%)	22 (2.7%)	
At least 6 months but less than 1 year	52 (2.6%)	7 (1.6%)	19 (1.8%)	25 (5.3%)		12 (1.0%)	40 (4.9%)	
At least 1 year but less than 3 years	297 (14.7%)	59 (13.3%)	150 (14.5%)	82 (17.4%)	<0.001	140 (11.6%)	157 (19.4%)	<0.001
At least 3 years but less than 5 years	315 (15.6%)	66 (14.9%)	172 (16.7%)	72 (15.3%)		147 (12.2%)	168 (20.7%)	
5 years or more	1,315 (65.2%)	307 (69.5%)	681 (66.1%)	271 (57.7%)		892 (74.1%)	423 (52.2%)	
Don't know	5 (0.2%)							
B3 Number of times the patient atten	ding the HCH p	actice in the la	st six months (G	(4)				
Once	82 (4.1%)	21 (4.8%)	42 (4.1%)	16 (3.4%)		46 (3.9%)	36 (4.5%)	
Twice	244 (12.1%)	82 (18.9%)	114 (11.2%)	44 (9.4%)		141 (11.8%)	103 (12.8%)	
3 times	324 (16.1%)	90 (20.7%)	158 (15.5%)	65 (13.9%)	<0.001	207 (17.4%)	117 (14.6%)	0 391
4 times	296 (14.7%)	62 (14.3%)	165 (16.2%)	57 (12.2%)	~0.001	166 (13.9%)	130 (16.2%)	0.001
5 to 9 times	596 (29.5%)	112 (25.7%)	318 (31.2%)	146 (31.2%)		358 (30.1%)	238 (29.7%)	
10 or more times	434 (21.5%)	63 (14.5%)	218 (21.4%)	136 (29.1%)		260 (21.8%)	174 (21.7%)	

Table 62 – Patient use of HCH practice by patient HCH tier and practice size

			Ti	er			Size	
Patient use of HCH practice	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value
Don't know	26 (1.3%)							
B4 Number of times the patient conto (apart from scheduling appointments	acted their GP o s) (Q5)	r other professio	onal at the HCH	practice by en	nail or telephon	e about their he	ealth in the last s	six months
Once	121 (6.0%)	26 (5.9%)	68 (6.6%)	24 (5.2%)		71 (6.0%)	50 (6.2%)	
Twice	155 (7.7%)	22 (5.0%)	87 (8.5%)	41 (8.9%)		99 (8.3%)	56 (7.0%)	
3 times	99 (4.9%)	24 (5.5%)	45 (4.4%)	29 (6.3%)	<0.001	52 (4.4%)	47 (5.9%)	0.440
4 times	70 (3.5%)	9 (2.1%)	39 (3.8%)	16 (3.5%)	~0.001	45 (3.8%)	25 (3.1%)	0.440
5 to 9 times	128 (6.3%)	18 (4.1%)	60 (5.9%)	45 (9.7%)		74 (6.2%)	54 (6.7%)	
10 or more times	78 (3.9%)	13 (3.0%)	27 (2.6%)	34 (7.4%)		41 (3.5%)	37 (4.6%)	
Don't know	27 (1.3%)							

Source: CATI surveys conducted by The Social Research Centre between December 2017 and March 2019.

Table 63 – Access measures by patient HCH tier and practice size

			Ti	ier			Size	
Access	Total	Tier 1	Tier 2	Tier 3	р	Medium	Sole	р
					value	Large	Small	value
C1 Over the last 6 months, that patient o	ontacted the HC	H to get an appo	ointment for an il	lness, injury, or co	ondition that nee	ded care right av	way (Q14)	
Yes	973 (48.2%)	184 (42.1%)	496 (48.5%)	257 (55.0%)	<0.001	571 (47.9%)	402 (50.1%)	0.348
No	1,022 (50.6%)	253 (57.9%)	527 (51.5%)	210 (45.0%)	<0.001	621 (52.1%)	401 (49.9%)	0.366
Don't know	23 (1.1%)							
C2 When requesting an appointment for	care needed rig	ht away, how of	ten the patient g	et an appointme	nt as soon as rec	juired (Q15)		
None of the time	19 (2.0%)	4 (2.2%)	10 (2.0%)	4 (1.6%)		13 (2.3%)	6 (1.5%)	
A little of the time	37 (3.8%)	5 (2.8%)	21 (4.3%)	10 (4.0%)	0.512	25 (4.5%)	12 (3.0%)	0.074
Some of the time	85 (8.7%)	23 (12.7%)	42 (8.6%)	19 (7.6%)		54 (9.6%)	31 (7.8%)	

			Ti	er			Size	
Access	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value
Most of the time	300 (30.8%)	51 (28.2%)	167 (34.2%)	76 (30.3%)		188 (33.5%)	112 (28.3%)	
Always	516 (53.0%)	98 (54.1%)	249 (50.9%)	142 (56.6%)		281 (50.1%)	235 (59.3%)	
Don't know	16 (1.6%)							
C3 Over the last 6 months, that patient c	ontacted the HC	H to get an appo	pintment for a ch	eck-up or routine	e care (Q16)			
Yes	1,521 (75.4%)	332 (76.7%)	789 (77.3%)	343 (75.1%)	0 / 47	869 (73.3%)	652 (82.0%)	<0.001
No	460 (22.8%)	101 (23.3%)	232 (22.7%)	114 (24.9%)	0.64/	317 (26.7%)	143 (18.0%)	<0.001
Don't know	37 (1.8%)							
C4 When requesting an appointment for	a check-up or r	outine care, how	often the patien	t get an appoint	ment as soon as i	required (Q17)		
None of the time	20 (1.3%)	3 (0.9%)	13 (1.7%)	3 (0.9%)		14 (1.6%)	6 (0.9%)	
A little of the time	42 (2.8%)	9 (2.8%)	21 (2.7%)	12 (3.6%)		27 (3.2%)	15 (2.3%)	
Some of the time	143 (9.4%)	43 (13.2%)	63 (8.1%)	34 (10.1%)	0.334	93 (10.9%)	50 (7.8%)	0.006
Most of the time	550 (36.2%)	116 (35.7%)	292 (37.6%)	121 (35.8%)		331 (38.7%)	219 (34.1%)	
Always	742 (48.8%)	154 (47.4%)	388 (49.9%)	168 (49.7%)		390 (45.6%)	352 (54.8%)	
Don't know	24 (1.6%)							
C5 When requesting an appointment or	attending for any	reason, how off	en did the patie	nt see their own p	personal GP (Q18)		
None of the time	21 (1.0%)	7 (1.6%)	10 (1.0%)	4 (0.9%)		16 (1.3%)	5 (0.6%)	
A little of the time	52 (2.6%)	13 (3.0%)	32 (3.1%)	7 (1.5%)		39 (3.3%)	13 (1.6%)	
Some of the time	106 (5.3%)	28 (6.5%)	49 (4.8%)	25 (5.4%)	0.016	71 (6.0%)	35 (4.4%)	<0.001
Most of the time	633 (31.4%)	155 (35.8%)	329 (32.1%)	123 (26.5%)		413 (34.6%)	220 (27.4%)	
Always	1,182 (58.6%)	230 (53.1%)	606 (59.1%)	306 (65.8%)		653 (54.8%)	529 (66.0%)	
Don't know	24 (1.2%)							

			Ti	ier			Size	
Care planning	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value
D1 Patient has registered for My Health F	Record (Q6)							
Yes	1,449 (71.8%)	344 (87.3%)	760 (81.8%)	300 (73.9%)	<0.001	902 (82.8%)	547 (78.5%)	0.000
No	338 (16.7%)	50 (12.7%)	169 (18.2%)	106 (26.1%)	<0.001	188 (17.2%)	150 (21.5%)	0.027
Don't know	231 (11.4%)							
D2 Before enrolling in HCH, patient had	a treatment/shar	ed care plan wh	ich their GP or pr	ractice staff deve	loped with them	(Q7)		
Yes	1,159 (57.4%)	242 (56.9%)	607 (62.0%)	268 (61.9%)	0.177	703 (61.1%)	456 (60.3%)	0.759
No	747 (37.0%)	183 (43.1%)	372 (38.0%)	165 (38.1%)	0.177	447 (38.9%)	300 (39.7%)	0.756
Don't know	112 (5.6%)							
D3 Before enrolling in HCH, frequency th	e patient discuss	ed their treatme	nt/shared care p	olan with their GP	or practice staff	(Q8)		
At most or all consultations	485 (41.8%)	90 (41.7%)	244 (43.3%)	130 (53.3%)		247 (38.8%)	238 (55.6%)	
It was sometimes discussed	500 (43.1%)	105 (48.6%)	274 (48.6%)	103 (42.2%)	0.030	334 (52.5%)	166 (38.8%)	<0.001
It was never discussed	79 (6.8%)	21 (9.7%)	46 (8.2%)	11 (4.5%)		55 (8.6%)	24 (5.6%)	
Don't know	95 (8.2%)							
D4 Patient was given a copy of their tree	atment plan/shar	ed care plan in t	he last 6 months	(Q9)				
Yes	850 (73.3%)	181 (76.7%)	452 (77.1%)	188 (75.2%)	0.830	532 (78.8%)	318 (73.1%)	0.024
No	260 (22.4%)	55 (23.3%)	134 (22.9%)	62 (24.8%)	0.832	143 (21.2%)	117 (26.9%)	0.034
Don't know	49 (4.2%)							
D5 A copy of the patient's treatment pla	n/shared care pl	an was included	in My Health Re	cord (Q10)				
Yes	420 (47.4%)	104 (91.2%)	221 (86.0%)	76 (85.4%)	0.325	276 (89.0%)	144 (85.2%)	0.284
No	59 (6.7%)	10 (8.8%)	36 (14.0%)	13 (14.6%)	0.325	34 (11.0%)	25 (14.8%)	0.204
Don't know	408 (46.0%)							

Table 64 – Care planning question by patient HCH tier and practice size

			Ti	er			Size	
Medications review	Total	Tier 1	Tier 2	Tier 3	p	Medium	Sole	p
					value	Large	Small	value
E1 Over the last six months, how often di	id the GP, or som	eone from the H	CH , talk to the p	atient about all th	ne prescription m	edicines they we	ere taking (Q13)	
Never	231 (11.4%)	61 (14.6%)	115 (11.5%)	50 (11.0%)		162 (14.0%)	69 (8.9%)	
Some of the times patient attended the practice	577 (28.6%)	118 (28.2%)	310 (31.0%)	130 (28.6%)	0.351	374 (32.2%)	203 (26.2%)	<0.001
Most of times patient attended the practice	1,128 (55.9%)	239 (57.2%)	576 (57.5%)	274 (60.4%)		625 (53.8%)	503 (64.9%)	
Not taking prescription medication	30 (1.5%)							
Don't know	52 (2.6%)							

Table 65 – Medications review question by patient HCH tier and practice size

|--|

Health and health conditions	Total	Tier				Size			
		Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value	
F01 Patient rating of overall health (Q25)									
Excellent	77 (3.8%)	22 (5.1%)	38 (3.7%)	12 (2.6%)	<0.001	43 (3.6%)	34 (4.2%)	0.906	
Very good	413 (20.5%)	135 (31.0%)	210 (20.4%)	48 (10.3%)		249 (20.9%)	164 (20.3%)		
Good	763 (37.8%)	186 (42.8%)	402 (39.1%)	151 (32.5%)		458 (38.4%)	305 (37.8%)		
Fair	543 (26.9%)	74 (17.0%)	289 (28.1%)	168 (36.2%)		326 (27.3%)	217 (26.9%)		
Poor	202 (10.0%)	18 (4.1%)	90 (8.7%)	85 (18.3%)		116 (9.7%)	86 (10.7%)		
Don't know	20 (1.0%)								
F02 Patient rating of overall mental or emotional health (Q26)									
Excellent	288 (14.3%)	94 (21.3%)	141 (13.7%)	41 (8.8%)	<0.001	182 (15.2%)	106 (13.1%)	0.154	
Very good	530 (26.3%)	144 (32.7%)	270 (26.3%)	93 (19.9%)		325 (27.1%)	205 (25.4%)		

Health and health conditions	Total	Tier				Size			
		Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value	
Good	717 (35.5%)	147 (33.3%)	388 (37.8%)	157 (33.5%)		425 (35.5%)	292 (36.1%)		
Fair	372 (18.4%)	48 (10.9%)	191 (18.6%)	128 (27.4%)		217 (18.1%)	155 (19.2%)		
Poor	99 (4.9%)	8 (1.8%)	37 (3.6%)	49 (10.5%)		49 (4.1%)	50 (6.2%)		
Don't know	12 (0.6%)								
F03 Number of chronic conditions							'		
None	28 (1.4%)	11 (2.5%)	9 (0.9%)	7 (1.5%)	<0.001	10 (0.8%)	18 (2.2%)	<0.001	
One	173 (8.6%)	60 (13.6%)	74 (7.2%)	33 (7.0%)		83 (6.9%)	90 (11.1%)		
Тwo	329 (16.3%)	84 (19.0%)	168 (16.2%)	65 (13.8%)		185 (15.3%)	144 (17.7%)		
Three	492 (24.4%)	101 (22.9%)	270 (26.1%)	102 (21.6%)		295 (24.5%)	197 (24.3%)		
Four	436 (21.6%)	99 (22.4%)	232 (22.4%)	90 (19.1%)		279 (23.1%)	157 (19.3%)		
Five or more	560 (27.8%)	87 (19.7%)	281 (27.2%)	175 (37.1%)		354 (29.4%)	206 (25.4%)		
F04 Heart disease (Q22)				<u>^</u>					
Yes	653 (32.4%)	133 (30.4%)	325 (32.2%)	172 (37.6%)	0.050	415 (35.1%)	238 (30.1%)	0.023	
No	1,322 (65.5%)	305 (69.6%)	685 (67.8%)	286 (62.4%)		768 (64.9%)	554 (69.9%)		
Don't know	43 (2.1%)								
F05 Stroke (includes mini strokes, TIA, aneurisms) (Q22)									
Yes	216 (10.7%)	35 (7.9%)	95 (9.3%)	76 (16.2%)	<0.001	151 (12.6%)	65 (8.1%)	0.002	
No	1,787 (88.6%)	406 (92.1%)	930 (90.7%)	392 (83.8%)		1,045 (87.4%)	742 (91.9%)		
Don't know	15 (0.7%)								
F06 Cancer (includes skin cancer) (Q22)									
Yes	490 (24.3%)	107 (24.3%)	259 (25.3%)	102 (21.7%)	0.337	307 (25.6%)	183 (22.7%)	0.158	
No	1,514 (75.0%)	333 (75.7%)	766 (74.7%)	367 (78.3%)		892 (74.4%)	622 (77.3%)		

Health and health conditions	Total	Tier				Size			
		Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value	
Don't know	14 (0.7%)								
F07 Osteoporosis (Q22)									
Yes	495 (24.5%)	98 (22.7%)	258 (25.5%)	125 (27.4%)	0.272	313 (26.6%)	182 (22.9%)	0.070	
No	1,474 (73.0%)	334 (77.3%)	754 (74.5%)	332 (72.6%)		862 (73.4%)	612 (77.1%)		
Don't know	49 (2.4%)								
F08 Depression or anxiety (Q22)									
Yes	828 (41.0%)	135 (30.9%)	419 (40.8%)	244 (52.0%)	.0.001	449 (37.5%)	379 (47.0%)	<0.001	
No	1,176 (58.3%)	302 (69.1%)	609 (59.2%)	225 (48.0%)	<0.001	749 (62.5%)	427 (53.0%)		
Don't know	14 (0.7%)								
F09 Arthritis (Q22)									
Yes	1,170 (58.0%)	230 (52.6%)	620 (60.4%)	281 (60.6%)	0.01.4	758 (63.5%)	412 (51.2%)	<0.001	
No	828 (41.0%)	207 (47.4%)	407 (39.6%)	183 (39.4%)	0.014	436 (36.5%)	392 (48.8%)		
Don't know	20 (1.0%)								
F10 Diabetes (Q22)									
Yes	703 (34.8%)	141 (32.1%)	359 (34.9%)	179 (38.1%)	0.168	458 (38.1%)	245 (30.4%)	<0.001	
No	1,305 (64.7%)	298 (67.9%)	670 (65.1%)	291 (61.9%)		743 (61.9%)	562 (69.6%)		
Don't know	10 (0.5%)								
F11 High blood pressure (Q22)									
Yes	1,230 (61.0%)	252 (57.5%)	649 (63.9%)	287 (61.9%)	0.073	772 (64.9%)	458 (57.5%)	<0.001	
No	756 (37.5%)	186 (42.5%)	367 (36.1%)	177 (38.1%)		417 (35.1%)	339 (42.5%)		
Don't know	32 (1.6%)								
F12 Asthma (Q22)									
			Ti	er			Size		
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Health and health conditions	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value	
Yes	546 (27.1%)	109 (24.7%)	276 (27.0%)	143 (30.6%)	0 135	332 (27.8%)	214 (26.6%)	0.571	
No	1,454 (72.1%)	332 (75.3%)	745 (73.0%)	325 (69.4%)	0.133	862 (72.2%)	592 (73.4%)	0.071	
Don't know	18 (0.9%)								
F13 Another chronic health condition (Q	22)			-	-	2	2		
Yes	912 (45.2%)	178 (41.2%)	455 (45.3%)	255 (55.2%)	<0.001	531 (45.2%)	381 (48.1%)	0.007	
No	1,054 (52.2%)	254 (58.8%)	549 (54.7%)	207 (44.8%)	<0.001	643 (54.8%)	411 (51.9%)	0.227	
Don't know	52 (2.6%)								
F15 Mobility today (Q27)									
No problems in walking about	840 (42.1%)	260 (59.5%)	441 (42.9%)	116 (25.1%)		477 (39.8%)	363 (45.4%)		
Slight problems in walking about	474 (23.7%)	100 (22.9%)	251 (24.4%)	106 (22.9%)		283 (23.6%)	191 (23.9%)	0.081	
Moderate problems in walking about	467 (23.4%)	72 (16.5%)	248 (24.1%)	126 (27.2%)	<0.001	299 (25.0%)	168 (21.0%)		
Severe problems in walking about	177 (8.9%)	5 (1.1%)	80 (7.8%)	88 (19.0%)]	112 (9.4%)	65 (8.1%)		
Unable to walk about	39 (2.0%)		7 (0.7%)	27 (5.8%)		26 (2.2%)	13 (1.6%)		
F16 Self-care today (Q27)									
No problems washing or dressing	1,637 (81.4%)	407 (92.1%)	872 (84.6%)	308 (66.0%)		961 (80.0%)	676 (83.6%)		
Slight problems washing or dressing	182 (9.1%)	21 (4.8%)	84 (8.1%)	68 (14.6%)]	119 (9.9%)	63 (7.8%)		
Moderate problems washing or dressing	138 (6.9%)	14 (3.2%)	65 (6.3%)	52 (11.1%)	<0.001	87 (7.2%)	51 (6.3%)	0.239	
Severe problems washing or dressing	28 (1.4%)		10 (1.0%)	16 (3.4%)		20 (1.7%)	8 (1.0%)		
Unable to wash or dress	25 (1.2%)			23 (4.9%)]	14 (1.2%)	11 (1.4%)		
F17 Usual activities today (Q27)									
No problems doing usual activities	1,042 (52.2%)	303 (69.2%)	548 (53.3%)	154 (33.5%)	<0.001	608 (50.9%)	434 (54.2%)	0.639	

			Tier				Size Medium Large Sole Small 84 (23.8%) 182 (22.8%) 10 (17.6%) 131 (16.4%) 51 (4.3%) 29 (3.6%) 42 (3.5%) 24 (3.0%) 33 (27.9%) 232 (28.8%)			
Health and health conditions	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value		
Slight problems doing usual activities	466 (23.4%)	89 (20.3%)	259 (25.2%)	110 (23.9%)		284 (23.8%)	182 (22.8%)			
Moderate problems doing usual activities	341 (17.1%)	39 (8.9%)	162 (15.8%)	121 (26.3%)		210 (17.6%)	131 (16.4%)			
Severe problems doing usual activities	80 (4.0%)	3 (0.7%)	34 (3.3%)	41 (8.9%)		51 (4.3%)	29 (3.6%)			
Unable to do usual activities	66 (3.3%)	4 (0.9%)	25 (2.4%)	34 (7.4%)		42 (3.5%)	24 (3.0%)			
F18 Pain or discomfort today (Q27)	<u></u>			2	2		2			
No pain or discomfort	565 (28.3%)	175 (39.9%)	283 (27.6%)	84 (18.2%)		333 (27.9%)	232 (28.8%)			
Slight pain or discomfort	686 (34.4%)	156 (35.5%)	380 (37.0%)	127 (27.5%)		399 (33.5%)	287 (35.7%)			
Moderate pain or discomfort	565 (28.3%)	93 (21.2%)	288 (28.1%)	170 (36.8%)	<0.001	344 (28.9%)	221 (27.5%)	0.142		
Severe pain or discomfort	153 (7.7%)	15 (3.4%)	67 (6.5%)	62 (13.4%)		103 (8.6%)	50 (6.2%)			
Extreme pain or discomfort	28 (1.4%)		8 (0.8%)	19 (4.1%)		13 (1.1%)	15 (1.9%)			
F19 Anxiety or depression today (Q27)			1			1				
Not anxious or depressed	1,305 (65.3%)	339 (77.4%)	681 (66.6%)	236 (50.6%)		806 (67.5%)	499 (62.1%)			
Slightly anxious or depressed	366 (18.3%)	67 (15.3%)	199 (19.5%)	92 (19.7%)	-	219 (18.3%)	147 (18.3%)			
Moderately anxious or depressed	265 (13.3%)	28 (6.4%)	127 (12.4%)	101 (21.7%)	<0.001	144 (12.1%)	121 (15.1%)	0.006		
Severely anxious or depressed	43 (2.2%)	2 (0.5%)	15 (1.5%)	23 (4.9%)		18 (1.5%)	25 (3.1%)			
Extremely anxious or depressed	18 (0.9%)	2 (0.5%)	1 (0.1%)	14 (3.0%)		7 (0.6%)	11 (1.4%)			
F20 Total score (EQ-5D-5L)										
Mean (median)	0.71 (0.74)	0.81 (0.80)	0.73 (0.75)	0.58 (0.65)	<0.001	0.71 (0.74)	0.72 (0.75)	0.327		
Missing	76									

PAM itom			Tie	er			Size	
PAM item	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value
H01 When all is said and done, I am the pers	son who is respons	ible for managin	ig my health con	dition(s) (Q20)				
Strongly disagree	19 (0.9%)	3 (0.7%)	9 (0.9%)	6 (1.3%)		14 (1.2%)	5 (0.6%)	
Disagree	70 (3.5%)	7 (1.6%)	33 (3.3%)	28 (6.1%)	0.001	40 (3.4%)	30 (3.8%)	0.049
Agree	1,002 (49.7%)	204 (47.0%)	525 (52.0%)	239 (52.4%)	0.001	624 (53.0%)	378 (47.8%)	0.066
Strongly agree	877 (43.5%)	220 (50.7%)	443 (43.9%)	183 (40.1%)		500 (42.4%)	377 (47.7%)	
Don't know	42 (2.1%)							
Refused	8 (0.4%)							
H02 Taking an active role in my own health	care is the most in	portant factor in	determining my	health and abili	ity to function	(Q20)		
Strongly disagree	13 (0.6%)	3 (0.7%)	7 (0.7%)	3 (0.7%)		9 (0.8%)	4 (0.5%)	
Disagree	31 (1.5%)	4 (0.9%)	13 (1.3%)	14 (3.1%)	0.000	18 (1.5%)	13 (1.6%)	0.170
Agree	922 (45.7%)	194 (44.5%)	476 (46.9%)	224 (49.1%)	0.007	572 (48.6%)	350 (43.9%)	0.100
Strongly agree	1,009 (50.0%)	235 (53.9%)	518 (51.1%)	215 (47.1%)		578 (49.1%)	431 (54.0%)	
Don't know	39 (1.9%)							
Refused	4 (0.2%)							
H03 I know what each of my prescribed me	dications do (Q20)			·				
Strongly disagree	12 (0.6%)	2 (0.5%)	7 (0.7%)	3 (0.7%)		12 (1.0%)		
Disagree	72 (3.6%)	9 (2.1%)	31 (3.0%)	29 (6.4%)	0.005	41 (3.5%)	31 (3.9%)	<0.001
Agree	859 (42.6%)	189 (43.9%)	432 (42.4%)	212 (46.7%)	0.005	550 (46.6%)	309 (39.0%)	~0.001
Strongly agree	1,030 (51.0%)	231 (53.6%)	550 (53.9%)	210 (46.3%)		578 (48.9%)	452 (57.1%)	
Don't know	39 (1.9%)							
Refused	6 (0.3%)							

Table 67 – Patient activation measure (PAM) by patient HCH tier and practice size

			Tie	er		Size		
PAM item	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value
H04 I understand the nature and causes of n	ny health conditio	n(s) (Q20)						
Strongly disagree	10 (0.5%)	2 (0.5%)	5 (0.5%)	3 (0.7%)		7 (0.6%)	3 (0.4%)	
Disagree	53 (2.6%)	7 (1.6%)	25 (2.5%)	21 (4.6%)	0.004	27 (2.3%)	26 (3.3%)	0.014
Agree	962 (47.7%)	212 (48.7%)	501 (49.3%)	218 (47.6%)	0.204	607 (51.4%)	355 (44.5%)	0.014
Strongly agree	954 (47.3%)	214 (49.2%)	486 (47.8%)	216 (47.2%)		540 (45.7%)	414 (51.9%)	
Don't know	37 (1.8%)							
Refused	2 (0.1%)							
H05 I know the different medical treatment of	options available f	or my health co	ndition(s) (Q20)					
Strongly disagree	18 (0.9%)		10 (1.0%)	8 (1.8%)		12 (1.0%)	6 (0.8%)	
Disagree	129 (6.4%)	21 (5.0%)	65 (6.5%)	40 (9.0%)	0.025	71 (6.2%)	58 (7.4%)	<0.001
Agree	1,081 (53.6%)	242 (57.5%)	565 (56.7%)	241 (54.3%)	0.035	688 (59.9%)	393 (50.4%)	<0.001
Strongly agree	699 (34.6%)	158 (37.5%)	357 (35.8%)	155 (34.9%)		377 (32.8%)	322 (41.3%)	
Don't know	85 (4.2%)							
Refused	6 (0.3%)							
H06 I have been able to maintain the lifestyl	e changes for my	health that I hav	ve made (Q20)			-		
Strongly disagree	28 (1.4%)	2 (0.5%)	12 (1.2%)	13 (2.9%)		17 (1.5%)	11 (1.4%)	
Disagree	135 (6.7%)	15 (3.6%)	69 (6.9%)	46 (10.3%)	<0.001	79 (6.9%)	56 (7.2%)	0.000
Agree	1,147 (56.8%)	262 (62.1%)	595 (59.7%)	259 (58.2%)	<0.001	705 (61.2%)	442 (56.7%)	0.228
Strongly agree	622 (30.8%)	143 (33.9%)	321 (32.2%)	127 (28.5%)		351 (30.5%)	271 (34.7%)	
Don't know	77 (3.8%)							
Refused	9 (0.4%)							
H07 I know how to prevent further problems	with my health co	ndition (Q20)						

			Tie	er			Size	
PAM item	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value
Strongly disagree	22 (1.1%)	1 (0.2%)	13 (1.3%)	7 (1.6%)		16 (1.4%)	6 (0.8%)	
Disagree	161 (8.0%)	29 (6.8%)	71 (7.2%)	57 (12.7%)	0.003	96 (8.4%)	65 (8.3%)	0.205
Agree	1,094 (54.2%)	242 (56.7%)	571 (58.2%)	247 (55.1%)	0.003	661 (57.9%)	433 (55.3%)	0.275
Strongly agree	648 (32.1%)	155 (36.3%)	326 (33.2%)	137 (30.6%)		369 (32.3%)	279 (35.6%)	
Don't know	86 (4.3%)							
Refused	7 (0.3%)							
H08 I am confident that I can take actions th	nat will help preve	nt or minimise so	me symptoms o	r problems assoc	ciated with my	health condition (Q21)	
Strongly disagree	17 (0.8%)	1 (0.2%)	8 (0.8%)	8 (1.7%)		13 (1.1%)	4 (0.5%)	
Disagree	118 (5.8%)	11 (2.6%)	54 (5.4%)	51 (11.1%)	<0.001	73 (6.2%)	45 (5.7%)	0.107
Agree	1,167 (57.8%)	267 (61.9%)	609 (60.4%)	252 (55.0%)	<0.001	708 (60.4%)	459 (57.8%)	0.176
Strongly agree	665 (33.0%)	152 (35.3%)	338 (33.5%)	147 (32.1%)		379 (32.3%)	286 (36.0%)	
Don't know	43 (2.1%)							
Refused	8 (0.4%)							
H09 I am confident that I can tell when I nee	ed to go get medic	al care and whe	en I can handle d	a health problem	n myself (Q21)			
Strongly disagree	12 (0.6%)		7 (0.7%)	5 (1.1%)		8 (0.7%)	4 (0.5%)	
Disagree	108 (5.4%)	17 (3.9%)	42 (4.2%)	45 (9.8%)	<0.001	64 (5.4%)	44 (5.5%)	0.200
Agree	1,036 (51.3%)	227 (52.1%)	542 (53.6%)	235 (51.2%)	<0.001	640 (54.3%)	396 (49.7%)	0.200
Strongly agree	818 (40.5%)	192 (44.0%)	420 (41.5%)	174 (37.9%)		466 (39.6%)	352 (44.2%)	
Don't know	37 (1.8%)							
Refused	7 (0.3%)							
H10 I am confident I can tell my health care	provider concern	s I have even wi	hen he or she do	es not ask (Q21)		-	-	-
Strongly disagree	14 (0.7%)	2 (0.5%)	8 (0.8%)	3 (0.6%)	0.023	11 (0.9%)	3 (0.4%)	0.001

			Tie	er			Size	
PAM item	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value
Disagree	45 (2.2%)	6 (1.4%)	18 (1.8%)	21 (4.5%)		22 (1.9%)	23 (2.9%)	
Agree	937 (46.4%)	202 (46.7%)	481 (47.2%)	224 (48.5%)		596 (50.4%)	341 (42.5%)	
Strongly agree	988 (49.0%)	223 (51.5%)	512 (50.2%)	214 (46.3%)		553 (46.8%)	435 (54.2%)	
Don't know	29 (1.4%)							
Refused	5 (0.2%)							
H11 I am confident that I can follow through	on medical treatm	nents I need to c	lo at home (Q21))				·
Strongly disagree	13 (0.6%)	2 (0.5%)	6 (0.6%)	5 (1.1%)		9 (0.8%)	4 (0.5%)	
Disagree	62 (3.1%)	4 (0.9%)	21 (2.1%)	36 (7.8%)	<0.001	35 (3.0%)	27 (3.4%)	0.020
Agree	1,002 (49.7%)	223 (52.0%)	510 (50.4%)	241 (51.9%)	<0.001	619 (52.5%)	383 (48.2%)	0.232
Strongly agree	895 (44.4%)	200 (46.6%)	474 (46.9%)	182 (39.2%)		515 (43.7%)	380 (47.9%)	
Don't know	39 (1.9%)							
Refused	7 (0.3%)							
H12 I am confident I can figure out solutions	when new situatio	ons or problems o	arise with my hea	alth condition (Q2	21)			
Strongly disagree	25 (1.2%)	5 (1.2%)	9 (0.9%)	11 (2.5%)		15 (1.3%)	10 (1.3%)	
Disagree	247 (12.2%)	48 (11.3%)	110 (11.2%)	78 (17.4%)	0.005	141 (12.3%)	106 (13.5%)	0.012
Agree	1,189 (58.9%)	264 (62.0%)	628 (63.7%)	259 (57.8%)	0.005	714 (62.5%)	475 (60.5%)	0.013
Strongly agree	466 (23.1%)	109 (25.6%)	239 (24.2%)	100 (22.3%)		272 (23.8%)	194 (24.7%)	
Don't know	83 (4.1%)							
Refused	8 (0.4%)							
H13 I am confident that I can maintain lifesty	/le changes like d	iet and exercise	even during time	es of stress (Q21)				
Strongly disagree	58 (2.9%)	5 (1.2%)	18 (1.8%)	32 (7.1%)	<0.001	35 (3.0%)	23 (2.9%)	0.007
Disagree	276 (13.7%)	45 (10.4%)	136 (13.5%)	90 (19.9%)	<0.001	143 (12.2%)	133 (16.8%)	0.026

			Tie	er			Size	
PAM item	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value
Agree	1,162 (57.6%)	266 (61.4%)	611 (60.7%)	240 (53.0%)		717 (61.4%)	445 (56.0%)	
Strongly agree	466 (23.1%)	117 (27.0%)	242 (24.0%)	91 (20.1%)		273 (23.4%)	193 (24.3%)	
Don't know	49 (2.4%)							
Refused	7 (0.3%)							
H14 PAM level		1						
Disengaged and overwhelmed	111 (5.5%)	12 (2.7%)	46 (4.4%)	52 (11.0%)		67 (5.6%)	44 (5.4%)	
Becoming aware but still struggling	393 (19.5%)	82 (18.6%)	203 (19.6%)	95 (20.1%)	<0.001	260 (21.6%)	133 (16.4%)	0.020
Taking action	825 (40.9%)	186 (42.1%)	430 (41.6%)	181 (38.3%)	<0.001	490 (40.6%)	335 (41.3%)	0.020
Maintaining beh. & pushing further	689 (34.1%)	162 (36.7%)	355 (34.3%)	144 (30.5%)		389 (32.3%)	300 (36.9%)	
H14 Total score (PAM)	-	·				-		
Mean (median)	66 (66)	68 (66)	66 (66)	64 (62)	<0.001	66 (63)	67 (66)	0.003
Missing	0							

Table 68 – Hospital utilisation by patient HCH tier and practice size

			Ti	er			Size		
Hospital utilisation	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value	
1 Patient attended an emergency department for their own medical care in last 12 months (Q23)									
Yes	728 (36.1%)	121 (27.4%)	361 (34.9%)	222 (47.0%)	<0.001	431 (35.7%)	297 (36.6%)	0.724	
No	1,290 (63.9%)	321 (72.6%)	673 (65.1%)	250 (53.0%)	<0.001	775 (64.3%)	515 (63.4%)	0.758	
12 Patient stayed one or more nights in h	ospital in last 12	months (Q23)			<u></u>				
Yes	628 (31.1%)	88 (19.9%)	314 (30.4%)	201 (42.6%)	<0.001	391 (32.4%)	237 (29.2%)	0.127	
No	1,390 (68.9%)	354 (80.1%)	720 (69.6%)	271 (57.4%)	<u>\0.001</u>	815 (67.6%)	575 (70.8%)	0.136	

			Ti	er			Size	
PACIC item	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value
J01 I was asked for my ideas when we n	nade decisions a	bout my treatme	ent (Q11)					
None of the time	287 (15.3%)	80 (18.9%)	144 (15.1%)	59 (13.5%)		187 (16.8%)	100 (13.1%)	
A little of the time	178 (9.5%)	37 (8.7%)	88 (9.2%)	48 (11.0%)		114 (10.2%)	64 (8.4%)	
Some of the time	484 (25.8%)	111 (26.2%)	246 (25.8%)	109 (24.9%)	0.438	298 (26.7%)	186 (24.4%)	0.020
Most of the time	487 (25.9%)	106 (25.1%)	248 (26.1%)	109 (24.9%)		271 (24.3%)	216 (28.4%)	
Always	441 (23.5%)	89 (21.0%)	226 (23.7%)	112 (25.6%)]	246 (22.0%)	195 (25.6%)	
J02 I was given choices about treatmen	t to think about (Q11)	<u></u>	2	-			
None of the time	292 (15.3%)	68 (16.1%)	149 (15.2%)	60 (13.6%)		204 (18.0%)	88 (11.4%)	
A little of the time	149 (7.8%)	31 (7.3%)	81 (8.3%)	31 (7.0%)		98 (8.6%)	51 (6.6%)	<0.001
Some of the time	373 (19.5%)	76 (18.0%)	197 (20.1%)	92 (20.9%)	0.579	229 (20.2%)	144 (18.6%)	
Most of the time	445 (23.3%)	105 (24.9%)	229 (23.4%)	91 (20.6%)]	250 (22.0%)	195 (25.2%)	
Always	651 (34.1%)	142 (33.6%)	323 (33.0%)	167 (37.9%)		354 (31.2%)	297 (38.3%)	
J03 I was sure that my doctor or nurse th	ought about my	values, beliefs, a	ind traditions who	en they recomm	ended treatment	s to me (Q11)		
None of the time	130 (6.9%)	31 (7.5%)	68 (7.0%)	28 (6.3%)		89 (7.9%)	41 (5.4%)	
A little of the time	64 (3.4%)	22 (5.3%)	28 (2.9%)	12 (2.7%)		36 (3.2%)	28 (3.7%)	
Some of the time	169 (8.9%)	30 (7.3%)	80 (8.3%)	56 (12.5%)	0.020	107 (9.5%)	62 (8.1%)	0.182
Most of the time	437 (23.1%)	87 (21.1%)	242 (25.0%)	92 (20.6%)		256 (22.7%)	181 (23.6%)	
Always	1,094 (57.8%)	243 (58.8%)	549 (56.8%)	259 (57.9%)		640 (56.7%)	454 (59.3%)	
J04 I was shown how what I did to care t	for myself influen	ced my conditio	n (Q11)	2	-			
None of the time	145 (7.7%)	34 (8.1%)	74 (7.6%)	32 (7.7%)		101 (9.0%)	44 (5.8%)	
A little of the time	102 (5.4%)	18 (4.3%)	50 (5.1%)	30 (7.2%)	0.316	66 (5.9%)	36 (4.8%)	0.025
Some of the time	269 (14.3%)	53 (12.6%)	152 (15.7%)	58 (13.9%)		168 (15.0%)	101 (13.4%)	

Table 69 – Patient assessment of chronic illness care (PACIC) by patient HCH tier and practice size

		Tier					Size		
PACIC item	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value	
Most of the time	561 (29.9%)	120 (28.4%)	281 (28.9%)	133 (31.8%)		334 (29.8%)	227 (30.0%)		
Always	801 (42.7%)	197 (46.7%)	414 (42.6%)	165 (39.5%)]	453 (40.4%)	348 (46.0%)		
J05 I was asked to talk about my goals i	n caring for my c	ondition (Q11)							
None of the time	296 (15.3%)	75 (17.5%)	149 (15.1%)	58 (12.8%)		204 (17.7%)	92 (11.8%)		
A little of the time	146 (7.5%)	32 (7.5%)	75 (7.6%)	37 (8.2%)]	94 (8.1%)	52 (6.7%)		
Some of the time	362 (18.7%)	63 (14.7%)	186 (18.9%)	96 (21.2%)	0.171	210 (18.2%)	152 (19.5%)	0.002	
Most of the time	499 (25.8%)	121 (28.3%)	260 (26.4%)	105 (23.2%)		296 (25.6%)	203 (26.1%)		
Always	631 (32.6%)	137 (32.0%)	316 (32.0%)	157 (34.7%)		351 (30.4%)	280 (35.9%)		
J06 I was helped to set specific goals to improve my eating or exercise (Q11)									
None of the time	306 (15.8%)	72 (17.0%)	153 (15.4%)	66 (14.7%)		208 (18.0%)	98 (12.6%)		
A little of the time	177 (9.2%)	36 (8.5%)	90 (9.1%)	47 (10.5%)		108 (9.4%)	69 (8.9%)		
Some of the time	407 (21.1%)	80 (18.9%)	216 (21.8%)	96 (21.4%)	0.668	237 (20.6%)	170 (21.9%)	0.024	
Most of the time	513 (26.6%)	104 (24.6%)	264 (26.6%)	122 (27.2%)		299 (25.9%)	214 (27.5%)		
Always	528 (27.3%)	131 (31.0%)	269 (27.1%)	117 (26.1%)		301 (26.1%)	227 (29.2%)		
J07 I was given a written list of things I sh	nould do to impro	ove my health (Q	12)						
None of the time	655 (33.8%)	141 (33.0%)	345 (34.6%)	137 (30.6%)		429 (37.0%)	226 (29.0%)		
A little of the time	185 (9.5%)	41 (9.6%)	89 (8.9%)	49 (10.9%)		117 (10.1%)	68 (8.7%)		
Some of the time	414 (21.3%)	93 (21.8%)	220 (22.0%)	88 (19.6%)	0.427	236 (20.3%)	178 (22.8%)	0.002	
Most of the time	373 (19.2%)	74 (17.3%)	195 (19.5%)	96 (21.4%)		205 (17.7%)	168 (21.6%)		
Always	313 (16.1%)	78 (18.3%)	149 (14.9%)	78 (17.4%)		174 (15.0%)	139 (17.8%)		
J08 I was asked questions, either directly	y or on a survey,	about my health	habits (Q12)						
None of the time	378 (19.4%)	92 (21.6%)	196 (19.6%)	76 (16.9%)	0.270	253 (22.0%)	125 (15.7%)	0.006	

			Ti	er			Size	
PACIC item	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value
A little of the time	202 (10.4%)	44 (10.3%)	101 (10.1%)	49 (10.9%)		126 (10.9%)	76 (9.6%)	
Some of the time	448 (23.0%)	82 (19.2%)	247 (24.7%)	102 (22.6%)		251 (21.8%)	197 (24.8%)	
Most of the time	503 (25.8%)	119 (27.9%)	239 (23.9%)	127 (28.2%)]	289 (25.1%)	214 (27.0%)	
Always	415 (21.3%)	89 (20.9%)	219 (21.9%)	97 (21.5%)		233 (20.2%)	182 (22.9%)	
J09 I was satisfied that my care was well	l organised (Q12))						
None of the time	38 (1.9%)	13 (3.0%)	13 (1.3%)	11 (2.4%)		28 (2.3%)	10 (1.2%)	
A little of the time	52 (2.6%)	6 (1.4%)	28 (2.7%)	16 (3.4%)		36 (3.0%)	16 (2.0%)	
Some of the time	114 (5.7%)	20 (4.6%)	63 (6.1%)	29 (6.2%)	0.110	66 (5.5%)	48 (6.0%)	0.088
Most of the time	469 (23.5%)	109 (24.9%)	253 (24.6%)	97 (20.9%)		293 (24.6%)	176 (21.9%)	
Always	1,325 (66.3%)	290 (66.2%)	670 (65.2%)	312 (67.1%)		770 (64.5%)	555 (68.9%)	
J10 I was contacted after a visit to see h	ow things were g	oing (Q12)						
None of the time	767 (39.5%)	176 (41.6%)	415 (41.3%)	150 (33.5%)		498 (42.9%)	269 (34.4%)	
A little of the time	186 (9.6%)	51 (12.1%)	88 (8.8%)	40 (8.9%)		116 (10.0%)	70 (8.9%)	
Some of the time	438 (22.5%)	84 (19.9%)	234 (23.3%)	109 (24.3%)	0.023	251 (21.6%)	187 (23.9%)	<0.001
Most of the time	282 (14.5%)	53 (12.5%)	143 (14.2%)	74 (16.5%)		147 (12.7%)	135 (17.2%)	
Always	270 (13.9%)	59 (13.9%)	125 (12.4%)	75 (16.7%)		148 (12.8%)	122 (15.6%)	
J11 I was encouraged to attend program	ns in the commu	nity that could he	elp me (Q12)	-	-	2		
None of the time	777 (40.4%)	192 (45.5%)	392 (39.7%)	159 (35.6%)		500 (43.6%)	277 (35.6%)	
A little of the time	195 (10.1%)	38 (9.0%)	101 (10.2%)	50 (11.2%)		115 (10.0%)	80 (10.3%)	
Some of the time	462 (24.0%)	88 (20.9%)	259 (26.2%)	109 (24.4%)	0.007	254 (22.1%)	208 (26.8%)	0.009
Most of the time	252 (13.1%)	49 (11.6%)	136 (13.8%)	56 (12.5%)		139 (12.1%)	113 (14.5%)	
Always	238 (12.4%)	55 (13.0%)	100 (10.1%)	73 (16.3%)		139 (12.1%)	99 (12.7%)	

		Tier Size					Size Medium Large Sole Small 452 (41.4%) 218 (29.3%) 68 (6.2%) 37 (5.0%) 171 (15.6%) 119 (16.0%) 152 (13.9%) 128 (17.2%) 250 (22.9%) 242 (32.5%) 52 3.3 (3.4) 3.5 (3.6) 94 3.3 (3.5) 3.6 (4.0)			
PACIC item	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value		
J12 I was asked how my visits with other	doctors were go	ing (Q12)								
None of the time	670 (36.5%)	172 (43.4%)	345 (36.1%)	127 (30.2%)		452 (41.4%)	218 (29.3%)			
A little of the time	105 (5.7%)	27 (6.8%)	56 (5.9%)	21 (5.0%)		68 (6.2%)	37 (5.0%)			
Some of the time	290 (15.8%)	51 (12.9%)	153 (16.0%)	77 (18.3%)	0.005	171 (15.6%)	119 (16.0%)	< 0.001		
Most of the time	280 (15.2%)	49 (12.4%)	157 (16.4%)	65 (15.5%)		152 (13.9%)	128 (17.2%)			
Always	492 (26.8%)	97 (24.5%)	246 (25.7%)	130 (31.0%)		250 (22.9%)	242 (32.5%)			
J13 Total score (PACIC)	<u></u>			-	2					
Mean (median)	3.4 (3.5)	3.3 (3.4)	3.3 (3.5)	3.4 (3.5)	0.152	3.3 (3.4)	3.5 (3.6)	<0.001		
Missing	3									
J14 PACIC: Patient activation score	<u>^</u>		·	-	2					
Mean (median)	3.4 (3.5)	3.4 (3.5)	3.4 (3.5)	3.5 (4.0)	0.194	3.3 (3.5)	3.6 (4.0)	<0.001		
Missing	34									
J15 PACIC: Decision support score										
Mean (median)	3.7 (3.7)	3.8 (4.0)	3.7 (3.7)	3.7 (4.0)	0.517	3.7 (3.7)	3.8 (4.0)	<0.001		
Missing	5									
J16 PACIC: Goal setting score										
Mean (median)	3.4 (3.7)	3.4 (3.6)	3.4 (3.7)	3.4 (3.7)	0.825	3.3 (3.3)	3.5 (3.7)	<0.001		
Missing	9									
J17 PACIC: Problem solving score	<u></u>			-	2					
Mean (median)	4.2 (5.0)	4.2 (5.0)	4.2 (5.0)	4.2 (5.0)	0.977	4.2 (5.0)	4.3 (5.0)	0.128		
Missing	124									
J18 PACIC: Follow-up/ co-ordination sco	pre									

			Ti	er	Size			
PACIC item	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value
Mean (median)	2.6 (2.7)	2.5 (2.3)	2.6 (2.7)	2.8 (3.0)	<0.001	2.5 (2.3)	2.8 (3.0)	<0.001
Missing	14							

Table 70 – Patient rating of HCH practice by patient HCH tier and practice size

			Ti	er	Size			
Patient rating of HCH practice	Total	Tier 1	Tier 2	Tier 3	p value	Medium Large	Sole Small	p value
K1 Patient rating of the HCH practice (0-	10)							
Mean (median)	9.0 (9.0)	9.0 (9.0)	9.0 (9.0)	9.0 (9.0)	0.588	8.9 (9.0)	9.1 (10.0)	<0.001
Missing	18							

Part B: Cross tabulations by ownership type and location

			Туре			Locatio	on	
Respondent characteristics	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value
A1 Sex								
Female	1,083 (54.4%)	207 (49.8%)	876 (55.6%)	0.038	783 (53.9%)	162 (59.1%)	138 (52.5%)	0.210
Male	908 (45.6%)	209 (50.2%)	699 (44.4%)	0.030	671 (46.1%)	112 (40.9%)	125 (47.5%)	0.217
A2 Age group								
00-24	18 (0.9%)	2 (0.5%)	16 (1.0%)		13 (0.9%)	5 (1.8%)		
25-44	128 (6.4%)	16 (3.9%)	112 (7.0%)		106 (7.2%)	15 (5.5%)	7 (2.6%)	
45-64	551 (27.4%)	113 (27.2%)	438 (27.4%)	0.144	429 (29.1%)	68 (24.9%)	54 (20.4%)	<0.001
65-74	658 (32.7%)	134 (32.3%)	524 (32.8%)	0.146	475 (32.2%)	89 (32.6%)	94 (35.5%)	
75-84	513 (25.5%)	118 (28.4%)	395 (24.7%)		348 (23.6%)	77 (28.2%)	88 (33.2%)	
85+	144 (7.2%)	32 (7.7%)	112 (7.0%)		103 (7.0%)	19 (7.0%)	22 (8.3%)	
A3 Indigenous status (Q34)	·				<u>.</u>			
Yes - Aboriginal or Torres Strait Islander	66 (3.3%)	9 (2.2%)	57 (3.6%)	0.200	41 (2.8%)	15 (5.5%)	10 (3.8%)	0.059
No	1,936 (95.9%)	405 (97.8%)	1,531 (96.4%)	0.200	1,428 (97.2%)	256 (94.5%)	252 (96.2%)	0.037
Don't know/ Refused	16 (0.8%)							
A4 Country of birth (Q35)								
Australia	1,379 (68.3%)	275 (66.1%)	1,104 (69.0%)		939 (63.6%)	218 (79.6%)	222 (83.8%)	
UK (incl. England, Scotland, Northern Ireland, Wales)	291 (14.4%)	56 (13.5%)	235 (14.7%)	<0.001	222 (15.0%)	36 (13.1%)	33 (12.5%)	<0.001
India	43 (2.1%)	14 (3.4%)	29 (1.8%)		43 (2.9%)			
New Zealand	31 (1.5%)	6 (1.4%)	25 (1.6%)		25 (1.7%)	3 (1.1%)	3 (1.1%)	

			Туре		Location				
Respondent characteristics	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value	
Italy	18 (0.9%)	4 (1.0%)	14 (0.9%)		18 (1.2%)				
Greece	28 (1.4%)	17 (4.1%)	11 (0.7%)		27 (1.8%)		1 (0.4%)		
Ireland	7 (0.3%)	2 (0.5%)	5 (0.3%)		6 (0.4%)	1 (0.4%)			
China	2 (0.1%)	1 (0.2%)	1 (0.1%)		2 (0.1%)				
Other	216 (10.7%)	41 (9.9%)	175 (10.9%)		194 (13.1%)	16 (5.8%)	6 (2.3%)		
Refused	3 (0.1%)								
A5 Highest level of education (Q36)									
Year 9 or below	427 (21.2%)	110 (26.7%)	317 (20.0%)		301 (20.5%)	51 (19.1%)	75 (28.6%)		
Year 10 or equivalent	326 (16.2%)	70 (17.0%)	256 (16.2%)		233 (15.9%)	43 (16.1%)	50 (19.1%)		
Year 11 or equivalent	112 (5.6%)	7 (1.7%)	105 (6.6%)		86 (5.9%)	9 (3.4%)	17 (6.5%)		
Year 12 or equivalent	244 (12.1%)	52 (12.6%)	192 (12.1%)		183 (12.5%)	35 (13.1%)	26 (9.9%)		
Certificate I to IV (incl. trade certificate)	416 (20.6%)	87 (21.1%)	329 (20.8%)	<0.001	296 (20.2%)	69 (25.8%)	51 (19.5%)	0.003	
Advanced diploma/Diploma	167 (8.3%)	36 (8.7%)	131 (8.3%)		125 (8.5%)	31 (11.6%)	11 (4.2%)		
Bachelor Degree	187 (9.3%)	28 (6.8%)	159 (10.0%)		143 (9.8%)	20 (7.5%)	24 (9.2%)		
Post-Graduate Degree	66 (3.3%)	8 (1.9%)	58 (3.7%)		58 (4.0%)	4 (1.5%)	4 (1.5%)		
Other	50 (2.5%)	14 (3.4%)	36 (2.3%)		41 (2.8%)	5 (1.9%)	4 (1.5%)		
Refused	23 (1.1%)								
A6 Household composition (Q33)									
Person living alone	486 (24.1%)	100 (24.0%)	386 (24.1%)		356 (24.1%)	67 (24.5%)	63 (23.8%)		
Couple only	934 (46.3%)	184 (44.2%)	750 (46.8%)	0.174	628 (42.5%)	142 (51.8%)	164 (61.9%)	<0.001	
Couple with non-dependent child(ren)	168 (8.3%)	43 (10.3%)	125 (7.8%)	0.174	146 (9.9%)	13 (4.7%)	9 (3.4%)	<0.001	
Couple with dependent child(ren)	148 (7.3%)	26 (6.2%)	122 (7.6%)		121 (8.2%)	14 (5.1%)	13 (4.9%)		

			Туре		Location				
Respondent characteristics	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value	
Single parent w non-dependent child(ren)	85 (4.2%)	24 (5.8%)	61 (3.8%)		65 (4.4%)	16 (5.8%)	4 (1.5%)		
Single parent with dependent child(ren)	36 (1.8%)	4 (1.0%)	32 (2.0%)		28 (1.9%)	5 (1.8%)	3 (1.1%)		
Other household type	161 (8.0%)	35 (8.4%)	126 (7.9%)		135 (9.1%)	17 (6.2%)	9 (3.4%)		
A9 Help provided to patient and answering th	e survey		-						
Yes - answered for them (proxy)	113 (5.6%)	44 (10.6%)	69 (4.3%)		97 (6.6%)	4 (1.5%)	12 (4.5%)		
Yes - helped them answer some questions	75 (3.7%)	19 (4.6%)	56 (3.5%)	<0.001	56 (3.8%)	8 (2.9%)	11 (4.2%)	0.012	
No - did not need any help	1,830 (90.7%)	353 (84.9%)	1,477 (92.2%)		1,326 (89.7%)	262 (95.6%)	242 (91.3%)		

Table 72 – B Patient use of HCH practice by practice ownership type and practice location

			Туре		Location				
Patient use of HCH practice	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value	
B1 HCH practice is the GP practice that patier	nt usually attends (Q2)							
Yes	1,983 (98.3%)	415 (99.8%)	1,568 (98.1%)	0.025	1,447 (98.0%)	273 (99.6%)	263 (99.2%)	0.077	
No	32 (1.6%)	1 (0.2%)	31 (1.9%)	0.025	29 (2.0%)	1 (0.4%)	2 (0.8%)	0.077	
Refused	3 (0.1%)								
B2 Length of time the patient has been attend	ing the HCH pract	ice (Q3)							
Less than 6 months	34 (1.7%)	5 (1.2%)	29 (1.8%)		31 (2.1%)	2 (0.7%)	1 (0.4%)		
At least 6 months but less than 1 year	52 (2.6%)	6 (1.4%)	46 (2.9%)		44 (3.0%)	4 (1.5%)	4 (1.5%)		
At least 1 year but less than 3 years	297 (14.7%)	43 (10.4%)	254 (15.9%)	<0.001	237 (16.1%)	42 (15.4%)	18 (6.8%)	<0.001	
At least 3 years but less than 5 years	315 (15.6%)	38 (9.2%)	277 (17.3%)		221 (15.0%)	72 (26.4%)	22 (8.3%)		
5 years or more	1,315 (65.2%)	323 (77.8%)	992 (62.1%)		942 (63.9%)	153 (56.0%)	220 (83.0%)		
Don't know	5 (0.2%)								

		Туре		Location				
Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value	
HCH practice in th	e last six months	; (Q4)						
82 (4.1%)	19 (4.6%)	63 (4.0%)		64 (4.4%)	6 (2.2%)	12 (4.6%)		
244 (12.1%)	47 (11.4%)	197 (12.5%)		187 (12.8%)	31 (11.4%)	26 (10.0%)		
324 (16.1%)	77 (18.6%)	247 (15.6%)	0.05/	234 (16.0%)	48 (17.7%)	42 (16.1%)	0 270	
296 (14.7%)	55 (13.3%)	241 (15.3%)	0.036	224 (15.3%)	28 (10.3%)	44 (16.9%)	0.377	
596 (29.5%)	105 (25.4%)	491 (31.1%)		426 (29.2%)	93 (34.3%)	77 (29.5%)		
434 (21.5%)	104 (25.2%)	330 (20.9%)		312 (21.4%)	64 (23.6%)	58 (22.2%)		
26 (1.3%)								
ir GP or other profe	essional at the H	CH practice by e	email or teleph	one about their h	ealth in the last s	ix months (apar	from	
121 (6.0%)	27 (6.6%)	94 (5.9%)		89 (6.1%)	22 (8.2%)	10 (3.8%)		
155 (7.7%)	28 (6.8%)	127 (8.0%)		113 (7.7%)	22 (8.2%)	20 (7.7%)		
99 (4.9%)	17 (4.1%)	82 (5.2%)	0.049	69 (4.7%)	18 (6.7%)	12 (4.6%)	0.054	
70 (3.5%)	13 (3.2%)	57 (3.6%)	0.066	46 (3.1%)	15 (5.6%)	9 (3.4%)	0.036	
128 (6.3%)	40 (9.8%)	88 (5.6%)		100 (6.8%)	18 (6.7%)	10 (3.8%)		
78 (3.9%)	19 (4.6%)	59 (3.7%)		53 (3.6%)	16 (5.9%)	9 (3.4%)		
27 (1.3%)								
	Total 82 (4.1%) 244 (12.1%) 324 (16.1%) 296 (14.7%) 596 (29.5%) 434 (21.5%) 26 (1.3%) Total 121 (6.0%) 155 (7.7%) 99 (4.9%) 70 (3.5%) 128 (6.3%) 78 (3.9%) 27 (1.3%)	Total Corporate 82 (4.1%) 19 (4.6%) 244 (12.1%) 47 (11.4%) 324 (16.1%) 77 (18.6%) 296 (14.7%) 55 (13.3%) 596 (29.5%) 105 (25.4%) 434 (21.5%) 104 (25.2%) 26 (1.3%) 27 (6.6%) 155 (7.7%) 28 (6.8%) 99 (4.9%) 17 (4.1%) 70 (3.5%) 13 (3.2%) 128 (6.3%) 40 (9.8%) 78 (3.9%) 19 (4.6%)	Total Type Corporate Other 82 (4.1%) 19 (4.6%) 63 (4.0%) 244 (12.1%) 47 (11.4%) 197 (12.5%) 324 (16.1%) 77 (18.6%) 247 (15.6%) 296 (14.7%) 55 (13.3%) 241 (15.3%) 596 (29.5%) 105 (25.4%) 491 (31.1%) 434 (21.5%) 104 (25.2%) 330 (20.9%) 26 (1.3%) 104 (25.2%) 330 (20.9%) 121 (6.0%) 27 (6.6%) 94 (5.9%) 155 (7.7%) 28 (6.8%) 127 (8.0%) 99 (4.9%) 17 (4.1%) 82 (5.2%) 70 (3.5%) 13 (3.2%) 57 (3.6%) 128 (6.3%) 40 (9.8%) 88 (5.6%) 78 (3.9%) 19 (4.6%) 59 (3.7%) 27 (1.3%) 19 (4.6%) 59 (3.7%)	TypeTotalCorporateOther p valueHCH practice in the last six months (Q4) $82 (4.1\%)$ 19 (4.6\%)63 (4.0%) $244 (12.1\%)$ 47 (11.4\%)197 (12.5%) $324 (16.1\%)$ 77 (18.6\%)247 (15.6%) $296 (14.7\%)$ 55 (13.3\%)241 (15.3\%) $596 (29.5\%)$ 105 (25.4\%)491 (31.1\%) $434 (21.5\%)$ 104 (25.2\%)330 (20.9\%) $26 (1.3\%)$ 104 (25.2\%)330 (20.9\%) $121 (6.0\%)$ 27 (6.6\%)94 (5.9\%) $155 (7.7\%)$ 28 (6.8\%)127 (8.0\%)99 (4.9\%)17 (4.1\%)82 (5.2\%)70 (3.5\%)13 (3.2\%)57 (3.6\%)128 (6.3\%)40 (9.8\%)88 (5.6\%)78 (3.9\%)19 (4.6\%)59 (3.7\%)27 (1.3\%)10 (11 (11 (11 (11 (11 (11 (11 (11 (11 (TotalTypeMMMM 1CorporateOther p valueMMM 1HCH practice in the last six months (Q4) $82 (4.1\%)$ 19 (4.6%)63 (4.0%) $244 (12.1\%)$ 47 (11.4%)197 (12.5%) $324 (16.1\%)$ 77 (18.6%)247 (15.6%) $296 (14.7\%)$ 55 (13.3%)241 (15.3%) $596 (29.5\%)$ 105 (25.4%)491 (31.1%) $434 (21.5\%)$ 104 (25.2%)330 (20.9%) $26 (1.3\%)$ 104 (25.2%)330 (20.9%) $26 (1.3\%)$ 27 (6.6%)94 (5.9%) $121 (6.0\%)$ 27 (6.6%)94 (5.9%) $155 (7.7\%)$ 28 (6.8%)127 (8.0%) $99 (4.9\%)$ 17 (4.1%)82 (5.2%) $70 (3.5\%)$ 13 (3.2%)57 (3.6%) $70 (3.5\%)$ 19 (4.6%)59 (3.7%) $78 (3.9\%)$ 19 (4.6\%)59 (3.7%) $27 (1.3\%)$ 19 (4.6\%)59 (3.7%)	Total Type Location Corporate Other P value MMM 1 MMM 2/3 HCH practice in the last six months (Q4) 82 (4.1%) 19 (4.6%) 63 (4.0%) 84 (4.4%) 6 (2.2%) 82 (4.1%) 19 (4.6%) 63 (4.0%) 87 (12.8%) 31 (11.4%) 197 (12.5%) 324 (16.1%) 77 (18.6%) 247 (15.5%) 187 (12.8%) 31 (11.4%) 234 (16.0%) 48 (17.7%) 296 (14.7%) 55 (13.3%) 241 (15.3%) 0.056 234 (16.0%) 48 (17.7%) 296 (12.5%) 105 (25.4%) 491 (31.1%) 224 (15.3%) 228 (10.3%) 434 (21.5%) 104 (25.2%) 330 (20.9%) 312 (21.4%) 64 (23.6%) 26 (1.3%) 104 (25.2%) 330 (20.9%) 312 (21.4%) 64 (23.6%) 121 (6.0%) 27 (6.6%) 94 (5.9%) 131 (2.1.4%) 22 (8.2%) 155 (7.7%) 28 (6.8%) 127 (8.0%) 89 (6.1%) 22 (8.2%) 155 (7.7%) 28 (6.8%) 127 (8.0%) 69 (4.7%) 18 (6.7%) 99 (4.9%) 13 (3.	Iteration Type Location Iteration Corporate Other p value MMM 1 MMM 2/3 MMM 4+ HCH practice in the last six months CA 63 (4.0%) 64 (4.4%) 6 (2.2%) 12 (4.6%) 244 (12.1%) 19 (4.6%) 63 (4.0%) 87 (12.8%) 31 (11.4%) 26 (10.0%) 324 (16.1%) 77 (18.6%) 247 (15.6%) 0.056 187 (12.8%) 31 (11.4%) 26 (10.0%) 296 (14.7%) 555 (13.3%) 241 (15.3%) 0.056 234 (16.0%) 48 (17.7%) 42 (16.1%) 396 (29.5%) 105 (25.4%) 491 (31.1%) 0.056 12 (4.6%) 358 (22.2%) 434 (21.5%) 104 (25.2%) 330 (20.9%) 312 (21.4%) 64 (23.6%) 58 (22.2%) 26 (1.3%) 104 (25.2%) 330 (20.9%) 312 (21.4%) 64 (23.6%) 58 (22.2%) 121 (6.0%) 27 (6.6%) 94 (5.9%) 89 (6.1%) 22 (8.2%) 10 (3.8%) 155 (7.7%) 28 (6.8%) 127 (8.0%) 113 (7.7%) 22 (8.2%) 20 (7.7%)	

			Type Location				Location				
Access	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value			
C1 Over the last 6 months, that patient contacted the HCH to get an appointment for an illness, injury, or condition that needed care right away (Q14)											
Yes	973 (48.2%)	204 (49.9%)	769 (48.5%)	0 455	695 (47.5%)	140 (51.7%)	138 (52.7%)	0 193			
No	1,022 (50.6%)	205 (50.1%)	817 (51.5%)	0.855	767 (52.5%)	131 (48.3%)	124 (47.3%)	0.105			
Don't know	23 (1.1%)										
C2 When requesting an appointment for care needed right away, how often the patient get an appointment as soon as required (Q15)											
None of the time	19 (2.0%)	5 (2.5%)	14 (1.8%)		16 (2.4%)	2 (1.4%)	1 (0.7%)				
A little of the time	37 (3.8%)	10 (5.0%)	27 (3.6%)		25 (3.7%)	4 (2.9%)	8 (5.8%)				
Some of the time	85 (8.7%)	23 (11.6%)	62 (8.2%)	0.426	58 (8.5%)	13 (9.3%)	14 (10.2%)	0.607			
Most of the time	300 (30.8%)	58 (29.1%)	242 (31.9%)		206 (30.3%)	45 (32.1%)	49 (35.8%)				
Always	516 (53.0%)	103 (51.8%)	413 (54.5%)		375 (55.1%)	76 (54.3%)	65 (47.4%)				
Don't know	16 (1.6%)										
C3 Over the last 6 months, that patient c	ontacted the HC	H to get an appo	pintment for a ch	eck-up or routine	e care (Q16)						
Yes	1,521 (75.4%)	283 (69.7%)	1,238 (78.6%)	<0.001	1,116 (76.9%)	217 (80.1%)	188 (72.6%)	0 101			
No	460 (22.8%)	123 (30.3%)	337 (21.4%)	<0.001	335 (23.1%)	54 (19.9%)	71 (27.4%)	0.121			
Don't know	37 (1.8%)										
C4 When requesting an appointment for	a check-up or r	outine care, how	often the patien	t get an appointi	ment as soon as r	equired (Q17)					
None of the time	20 (1.3%)	3 (1.1%)	17 (1.4%)		13 (1.2%)	2 (0.9%)	5 (2.7%)				
A little of the time	42 (2.8%)	12 (4.4%)	30 (2.5%)		28 (2.5%)	11 (5.2%)	3 (1.6%)				
Some of the time	143 (9.4%)	31 (11.3%)	112 (9.2%)	0.346	100 (9.1%)	21 (9.9%)	22 (11.9%)	0.009			
Most of the time	550 (36.2%)	98 (35.6%)	452 (37.0%)		386 (35.1%)	81 (38.2%)	83 (44.9%)				
Always	742 (48.8%)	131 (47.6%)	611 (50.0%)		573 (52.1%)	97 (45.8%)	72 (38.9%)				

Table 73 – Access measures by practice ownership type and practice location

			Туре		Location				
Access	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value	
Don't know	24 (1.6%)								
C5 When requesting an appointment or	attending for any	reason, how of	en did the patier	nt see their own p	personal GP (Q18)			
None of the time	21 (1.0%)	4 (1.0%)	17 (1.1%)		17 (1.2%)	2 (0.7%)	2 (0.8%)		
A little of the time	52 (2.6%)	9 (2.2%)	43 (2.7%)		30 (2.1%)	10 (3.7%)	12 (4.6%)		
Some of the time	106 (5.3%)	12 (2.9%)	94 (5.9%)	0.004	66 (4.5%)	14 (5.1%)	26 (10.0%)	< 0.001	
Most of the time	633 (31.4%)	111 (26.8%)	522 (33.0%)		434 (29.7%)	85 (31.2%)	114 (43.7%)		
Always	1,182 (58.6%)	278 (67.1%)	904 (57.2%)		914 (62.6%)	161 (59.2%)	107 (41.0%)		
Don't know	24 (1.2%)								

			Туре			Locc		
Care planning	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value
D1 Patient has registered for My Health F	Record (Q6)							
Yes	1,449 (71.8%)	284 (77.6%)	1,165 (82.0%)	0.044	1,000 (77.8%)	223 (88.1%)	226 (90.8%)	<0.001
No	338 (16.7%)	82 (22.4%)	256 (18.0%)	0.088	285 (22.2%)	30 (11.9%)	23 (9.2%)	<0.001
Don't know	231 (11.4%)							
D2 Before enrolling in HCH, patient had	a treatment/shar	ed care plan wh	ich their GP or pr	actice staff deve	loped with them	(Q7)		
Yes	1,159 (57.4%)	229 (58.3%)	930 (61.5%)	0.272	871 (62.3%)	144 (56.2%)	144 (56.9%)	0.073
No	747 (37.0%)	164 (41.7%)	583 (38.5%)	0.272	526 (37.7%)	112 (43.8%)	109 (43.1%)	0.073
Don't know	112 (5.6%)							
D3 Before enrolling in HCH, frequency the patient discussed their treatment/shared care plan with their GP or practice staff (Q8)								
At most or all consultations	485 (41.8%)	79 (38.2%)	406 (47.4%)		361 (45.0%)	72 (52.2%)	52 (41.9%)	
It was sometimes discussed	500 (43.1%)	113 (54.6%)	387 (45.2%)	0.043	383 (47.8%)	59 (42.8%)	58 (46.8%)	0.205
It was never discussed	79 (6.8%)	15 (7.2%)	64 (7.5%)		58 (7.2%)	7 (5.1%)	14 (11.3%)	
Don't know	95 (8.2%)							
D4 Patient was given a copy of their tree	atment plan/shar	ed care plan in t	he last 6 months	(Q9)				
Yes	850 (73.3%)	190 (86.0%)	660 (74.2%)	<0.001	627 (75.6%)	123 (86.6%)	100 (71.9%)	0.007
No	260 (22.4%)	31 (14.0%)	229 (25.8%)	<0.001	202 (24.4%)	19 (13.4%)	39 (28.1%)	0.007
Don't know	49 (4.2%)							
D5 A copy of the patient's treatment pla	n/shared care pl	an was included	in My Health Re	cord (Q10)				
Yes	420 (47.4%)	81 (88.0%)	339 (87.6%)	1.000	290 (87.3%)	67 (94.4%)	63 (82.9%)	0 101
No	59 (6.7%)	11 (12.0%)	48 (12.4%)	1.000	42 (12.7%)	4 (5.6%)	13 (17.1%)	0.101
Don't know	408 (46.0%)							

Table 74 – Care planning questions by practice ownership type and practice location

			Туре		Location				
Medications review	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value	
E1 Over the last six months, how often di	id the GP, or som	eone from the H	CH , talk to the po	atient about all th	ne prescription m	edicines they we	ere taking (Q13)		
Never	231 (11.4%)	61 (15.1%)	170 (11.1%)		171 (12.1%)	26 (10.0%)	34 (13.1%)		
Some of the times patient attended the practice	577 (28.6%)	129 (31.9%)	448 (29.3%)	0.026	428 (30.2%)	62 (23.8%)	87 (33.6%)	0.044	
Most of times patient attended the practice	1,128 (55.9%)	215 (53.1%)	913 (59.6%)		817 (57.7%)	173 (66.3%)	138 (53.3%)		
Not taking prescription medication	30 (1.5%)								
Don't know	52 (2.6%)								

Table 75 – Medications review question by practice ownership type and practice location

Source: CATI surveys conducted by The Social Research Centre between December 2017 and March 2019.

Table 76 – Health and health conditions by practice ownership type and practice location

Health and health conditions			Туре			Location				
Health and health conditions	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value		
F01 Patient rating of overall health (Q25)	1									
Excellent	77 (3.8%)	8 (1.9%)	69 (4.4%)		61 (4.2%)	7 (2.6%)	9 (3.5%)			
Very good	413 (20.5%)	76 (18.4%)	337 (21.3%)		322 (21.9%)	45 (16.5%)	46 (17.8%)			
Good	763 (37.8%)	149 (36.1%)	614 (38.7%)	0.014	549 (37.4%)	105 (38.6%)	109 (42.1%)	0.069		
Fair	543 (26.9%)	130 (31.5%)	413 (26.1%)		384 (26.2%)	93 (34.2%)	66 (25.5%)			
Poor	202 (10.0%)	50 (12.1%)	152 (9.6%)		151 (10.3%)	22 (8.1%)	29 (11.2%)			
Don't know	20 (1.0%)									
F02 Patient rating of overall mental or emotional health (Q26)										
Excellent	288 (14.3%)	50 (12.1%)	238 (14.9%)	0.074	224 (15.2%)	35 (12.9%)	29 (10.9%)	0.000		
Very good	530 (26.3%)	111 (26.9%)	419 (26.3%)	0.276	382 (26.0%)	74 (27.2%)	74 (27.9%)	- 0.090		

Health and health conditions			Туре		Location				
Health and health conditions	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value	
Good	717 (35.5%)	141 (34.2%)	576 (36.1%)		509 (34.6%)	109 (40.1%)	99 (37.4%)		
Fair	372 (18.4%)	84 (20.4%)	288 (18.1%)		270 (18.4%)	47 (17.3%)	55 (20.8%)		
Poor	99 (4.9%)	26 (6.3%)	73 (4.6%)		84 (5.7%)	7 (2.6%)	8 (3.0%)		
Don't know	12 (0.6%)								
F03 Number of chronic conditions									
None	28 (1.4%)		28 (1.7%)		25 (1.7%)	2 (0.7%)	1 (0.4%)		
One	173 (8.6%)	34 (8.2%)	139 (8.7%)		137 (9.3%)	24 (8.8%)	12 (4.5%)		
Тwo	329 (16.3%)	59 (14.2%)	270 (16.9%)	0.023	241 (16.3%)	40 (14.6%)	48 (18.1%)	0.044	
Three	492 (24.4%)	94 (22.6%)	398 (24.8%)	0.023	365 (24.7%)	72 (26.3%)	55 (20.8%)	0.004	
Four	436 (21.6%)	98 (23.6%)	338 (21.1%)		317 (21.4%)	61 (22.3%)	58 (21.9%)		
Five or more	560 (27.8%)	131 (31.5%)	429 (26.8%)		394 (26.6%)	75 (27.4%)	91 (34.3%)		
F04 Heart disease (Q22)									
Yes	653 (32.4%)	138 (33.7%)	515 (32.9%)	0.910	469 (32.5%)	82 (30.5%)	102 (38.9%)	0.078	
No	1,322 (65.5%)	272 (66.3%)	1,050 (67.1%)	0.017	975 (67.5%)	187 (69.5%)	160 (61.1%)	0.078	
Don't know	43 (2.1%)								
F05 Stroke (includes mini strokes, TIA, an	eurisms) (Q22)								
Yes	216 (10.7%)	63 (15.2%)	153 (9.6%)	0.000	146 (10.0%)	37 (13.6%)	33 (12.5%)	0 100	
No	1,787 (88.6%)	352 (84.8%)	1,435 (90.4%)	0.002	1,321 (90.0%)	235 (86.4%)	231 (87.5%)	0.128	
Don't know	15 (0.7%)								
F06 Cancer (includes skin cancer)(Q22)									
Yes	490 (24.3%)	105 (25.4%)	385 (24.2%)	0.451	364 (24.8%)	64 (23.8%)	62 (23.4%)	00/1	
No	1,514 (75.0%)	308 (74.6%)	1,206 (75.8%)	0.001	1,106 (75.2%)	205 (76.2%)	203 (76.6%)	0.001	

			Туре			Loco	ıtion			
Health and health conditions	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value		
Don't know	14 (0.7%)									
F07 Osteoporosis(Q22)	-									
Yes	495 (24.5%)	110 (27.1%)	385 (24.6%)	0.240	368 (25.4%)	57 (21.5%)	70 (27.3%)	0.074		
No	1,474 (73.0%)	296 (72.9%)	1,178 (75.4%)	0.340	1,080 (74.6%)	208 (78.5%)	186 (72.7%)	0.276		
Don't know	49 (2.4%)									
F08 Depression or anxiety(Q22)										
Yes	828 (41.0%)	161 (38.8%)	667 (42.0%)	0.0/4	593 (40.4%)	122 (44.9%)	113 (43.0%)	0.207		
No	1,176 (58.3%)	254 (61.2%)	922 (58.0%)	0.204	876 (59.6%)	150 (55.1%)	150 (57.0%)	0.326		
Don't know	14 (0.7%)									
F09 Arthritis(Q22)	F09 Arthritis(Q22)									
Yes	1,170 (58.0%)	259 (62.6%)	911 (57.5%)	0.070	833 (56.9%)	162 (59.3%)	175 (67.3%)	0.007		
No	828 (41.0%)	155 (37.4%)	673 (42.5%)	0.072	632 (43.1%)	111 (40.7%)	85 (32.7%)	0.007		
Don't know	20 (1.0%)									
F10 Diabetes(Q22)			· · · · · · · · · · · · · · · · · · ·				'			
Yes	703 (34.8%)	164 (39.4%)	539 (33.9%)	0.020	515 (35.0%)	93 (34.2%)	95 (36.0%)	0.000		
No	1,305 (64.7%)	252 (60.6%)	1,053 (66.1%)	0.039	957 (65.0%)	179 (65.8%)	169 (64.0%)	0.909		
Don't know	10 (0.5%)									
F11 High blood pressure(Q22)			· · · · · · · · · · · · · · · · · · ·				'			
Yes	1,230 (61.0%)	269 (65.6%)	961 (61.0%)	0.007	893 (61.4%)	164 (60.7%)	173 (66.3%)	0.004		
No	756 (37.5%)	141 (34.4%)	615 (39.0%)	0.076	562 (38.6%)	106 (39.3%)	88 (33.7%)	0.274		
Don't know	32 (1.6%)									
F12 Asthma(Q22)							I			

			Туре			Locc	ition		
Health and health conditions	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value	
Yes	546 (27.1%)	114 (27.7%)	432 (27.2%)	0.900	391 (26.7%)	71 (26.2%)	84 (32.1%)	0 177	
No	1,454 (72.1%)	298 (72.3%)	1,156 (72.8%)	0.099	1,076 (73.3%)	200 (73.8%)	178 (67.9%)	0.177	
Don't know	18 (0.9%)								
F13 Another chronic health condition(Q2	22)								
Yes	912 (45.2%)	192 (47.2%)	720 (46.2%)	0.7/0	658 (45.5%)	136 (51.1%)	118 (46.3%)	0.040	
No	1,054 (52.2%)	215 (52.8%)	839 (53.8%)	0.763	787 (54.5%)	130 (48.9%)	137 (53.7%)	0.243	
Don't know	52 (2.6%)								
F15 Mobility today (Q27)									
no problems in walking about	840 (42.1%)	146 (35.5%)	694 (43.8%)		630 (42.9%)	105 (39.3%)	105 (40.1%)		
slight problems in walking about	474 (23.7%)	108 (26.3%)	366 (23.1%)		343 (23.4%)	74 (27.7%)	57 (21.8%)		
moderate problems in walking about	467 (23.4%)	101 (24.6%)	366 (23.1%)	0.015	339 (23.1%)	57 (21.3%)	71 (27.1%)	0.669	
severe problems in walking about	177 (8.9%)	43 (10.5%)	134 (8.4%)		129 (8.8%)	25 (9.4%)	23 (8.8%)		
unable to walk about	39 (2.0%)	13 (3.2%)	26 (1.6%)		27 (1.8%)	6 (2.2%)	6 (2.3%)		
F16 Self-care today (Q27)									
no problems washing or dressing	1,637 (81.4%)	312 (75.5%)	1,325 (83.0%)		1,205 (81.8%)	221 (81.2%)	211 (79.6%)		
slight problems washing or dressing	182 (9.1%)	47 (11.4%)	135 (8.5%)		128 (8.7%)	27 (9.9%)	27 (10.2%)		
moderate problems washing or dressing	138 (6.9%)	36 (8.7%)	102 (6.4%)	0.005	100 (6.8%)	18 (6.6%)	20 (7.5%)	0.993	
severe problems washing or dressing	28 (1.4%)	11 (2.7%)	17 (1.1%)		21 (1.4%)	3 (1.1%)	4 (1.5%)		
unable to wash or dress	25 (1.2%)	7 (1.7%)	18 (1.1%)		19 (1.3%)	3 (1.1%)	3 (1.1%)		
F17 Usual activities today (Q27)									
no problems doing usual activities	1,042 (52.2%)	201 (48.9%)	841 (53.1%)	0.044	799 (54.7%)	117 (43.5%)	126 (47.5%)	<0.001	
slight problems doing usual activities	466 (23.4%)	101 (24.6%)	365 (23.0%)	0.044	315 (21.6%)	87 (32.3%)	64 (24.2%)	<u>\0.001</u>	

		Туре			Location				
Health and health conditions	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value	
moderate problems doing usual activities	341 (17.1%)	71 (17.3%)	270 (17.0%)		235 (16.1%)	52 (19.3%)	54 (20.4%)		
severe problems doing usual activities	80 (4.0%)	15 (3.6%)	65 (4.1%)		56 (3.8%)	9 (3.3%)	15 (5.7%)		
unable to do usual activities	66 (3.3%)	23 (5.6%)	43 (2.7%)		56 (3.8%)	4 (1.5%)	6 (2.3%)		
F18 Pain or discomfort today (Q27)									
no pain or discomfort	565 (28.3%)	105 (25.4%)	460 (29.0%)		427 (29.1%)	75 (28.2%)	63 (24.0%)		
slight pain or discomfort	686 (34.4%)	137 (33.2%)	549 (34.7%)		503 (34.2%)	96 (36.1%)	87 (33.2%)		
moderate pain or discomfort	565 (28.3%)	131 (31.7%)	434 (27.4%)	0.097	404 (27.5%)	75 (28.2%)	86 (32.8%)	0.343	
severe pain or discomfort	153 (7.7%)	30 (7.3%)	123 (7.8%)		111 (7.6%)	17 (6.4%)	25 (9.5%)		
extreme pain or discomfort	28 (1.4%)	10 (2.4%)	18 (1.1%)		24 (1.6%)	3 (1.1%)	1 (0.4%)		
F19 Anxiety or depression today (Q27)									
not anxious or depressed	1,305 (65.3%)	255 (62.2%)	1,050 (66.2%)		957 (65.5%)	175 (63.9%)	173 (66.0%)		
slightly anxious or depressed	366 (18.3%)	85 (20.7%)	281 (17.7%)		263 (18.0%)	59 (21.5%)	44 (16.8%)		
moderately anxious or depressed	265 (13.3%)	57 (13.9%)	208 (13.1%)	0.303	187 (12.8%)	36 (13.1%)	42 (16.0%)	0.160	
severely anxious or depressed	43 (2.2%)	7 (1.7%)	36 (2.3%)		37 (2.5%)	3 (1.1%)	3 (1.1%)		
extremely anxious or depressed	18 (0.9%)	6 (1.5%)	12 (0.8%)		17 (1.2%)	1 (0.4%)			
F20 Total score (EQ-5D-5L)									
Mean (median)	0.71 (0.74)	0.68 (0.73)	0.72 (0.75)	0.004	0.71 (0.75)	0.72 (0.73)	0.70 (0.73)	0.331	
Missing	76								

PAM item		Туре			Location					
PAM item	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value		
H01 When all is said and done, I am the	person who is res	sponsible for ma	naging my healt	h condition(s) (Q	20)					
Strongly disagree	19 (0.9%)	7 (1.7%)	12 (0.8%)		15 (1.0%)	3 (1.1%)	1 (0.4%)			
Disagree	70 (3.5%)	17 (4.2%)	53 (3.4%)	0.021	56 (3.9%)	6 (2.2%)	8 (3.1%)	0 410		
Agree	1,002 (49.7%)	222 (55.4%)	780 (49.8%)	0.021	717 (49.8%)	150 (56.2%)	135 (51.9%)	0.417		
Strongly agree	877 (43.5%)	155 (38.7%)	722 (46.1%)		653 (45.3%)	108 (40.4%)	116 (44.6%)			
Don't know	42 (2.1%)									
Refused	8 (0.4%)									
H02 Taking an active role in my own health care is the most important factor in determining my health and ability to function (Q20)										
Strongly disagree	13 (0.6%)	8 (2.0%)	5 (0.3%)		12 (0.8%)	1 (0.4%)				
Disagree	31 (1.5%)	8 (2.0%)	23 (1.5%)	<0.001	26 (1.8%)	3 (1.1%)	2 (0.8%)	0.221		
Agree	922 (45.7%)	199 (49.1%)	723 (46.1%)	<0.001	666 (46.1%)	120 (44.3%)	136 (52.3%)	0.221		
Strongly agree	1,009 (50.0%)	190 (46.9%)	819 (52.2%)]	740 (51.2%)	147 (54.2%)	122 (46.9%)			
Don't know	39 (1.9%)									
Refused	4 (0.2%)									
H03 I know what each of my prescribed	medications do	(Q20)	1							
Strongly disagree	12 (0.6%)	9 (2.2%)	3 (0.2%)		10 (0.7%)	1 (0.4%)	1 (0.4%)			
Disagree	72 (3.6%)	16 (3.9%)	56 (3.6%)	<0.001	48 (3.3%)	16 (5.9%)	8 (3.1%)	0 100		
Agree	859 (42.6%)	184 (45.0%)	675 (43.2%)	~0.001	615 (42.6%)	113 (42.0%)	131 (50.4%)	0.100		
Strongly agree	1,030 (51.0%)	200 (48.9%)	830 (53.1%)		771 (53.4%)	139 (51.7%)	120 (46.2%)			
Don't know	39 (1.9%)									
Refused	6 (0.3%)									

Table 77 – Patient activation measure (PAM) by practice ownership type and practice location

			Туре		Location				
PAM item	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value	
H04 I understand the nature and causes	s of my health co	ndition(s) (Q20)							
Strongly disagree	10 (0.5%)	6 (1.5%)	4 (0.3%)		9 (0.6%)	1 (0.4%)			
Disagree	53 (2.6%)	11 (2.7%)	42 (2.7%)	<0.001	36 (2.5%)	7 (2.6%)	10 (3.8%)	0.404	
Agree	962 (47.7%)	224 (55.4%)	738 (46.9%)	<0.001	704 (48.5%)	121 (45.5%)	137 (52.3%)	0.400	
Strongly agree	954 (47.3%)	163 (40.3%)	791 (50.2%)		702 (48.4%)	137 (51.5%)	115 (43.9%)		
Don't know	37 (1.8%)								
Refused	2 (0.1%)			1					
H05 I know the different medical treatment options available for my health condition(s) (Q20)									
Strongly disagree	18 (0.9%)	8 (2.0%)	10 (0.7%)		16 (1.1%)	1 (0.4%)	1 (0.4%)		
Disagree	129 (6.4%)	27 (6.9%)	102 (6.7%)	0.049	95 (6.7%)	16 (6.2%)	18 (7.1%)	0.007	
Agree	1,081 (53.6%)	228 (57.9%)	853 (55.6%)	0.048	797 (56.4%)	129 (49.6%)	155 (60.8%)	0.007	
Strongly agree	699 (34.6%)	131 (33.2%)	568 (37.1%)		504 (35.7%)	114 (43.8%)	81 (31.8%)		
Don't know	85 (4.2%)								
Refused	6 (0.3%)			1					
H06 I have been able to maintain the life	estyle changes fo	or my health that	l have made (Q	20)					
Strongly disagree	28 (1.4%)	9 (2.3%)	19 (1.2%)		21 (1.5%)	4 (1.5%)	3 (1.2%)		
Disagree	135 (6.7%)	33 (8.4%)	102 (6.6%)	0.04/	107 (7.6%)	13 (4.9%)	15 (5.9%)	0 722	
Agree	1,147 (56.8%)	242 (61.9%)	905 (58.7%)	0.046	829 (58.6%)	161 (60.8%)	157 (62.1%)	0.733	
Strongly agree	622 (30.8%)	107 (27.4%)	515 (33.4%)		457 (32.3%)	87 (32.8%)	78 (30.8%)		
Don't know	77 (3.8%)								
Refused	9 (0.4%)			1					
H07 I know how to prevent further proble	ems with my heal	th condition (Q2	0)						

			Туре		Location				
PAM item	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value	
Strongly disagree	22 (1.1%)	8 (2.0%)	14 (0.9%)		19 (1.3%)		3 (1.2%)		
Disagree	161 (8.0%)	34 (8.6%)	127 (8.3%)	0 128	114 (8.1%)	15 (5.7%)	32 (12.6%)	0 030	
Agree	1,094 (54.2%)	233 (59.1%)	861 (56.2%)	0.120	792 (56.2%)	159 (60.5%)	143 (56.3%)	0.037	
Strongly agree	648 (32.1%)	119 (30.2%)	529 (34.6%)		483 (34.3%)	89 (33.8%)	76 (29.9%)		
Don't know	86 (4.3%)								
Refused	7 (0.3%)								
H08 I am confident that I can take actio	ns that will help p	prevent or minimi	se some sympto	ms or problems o	associated with n	ny health condition	on (Q21)		
Strongly disagree	17 (0.8%)	7 (1.7%)	10 (0.6%)		13 (0.9%)	1 (0.4%)	3 (1.2%)		
Disagree	118 (5.8%)	32 (7.9%)	86 (5.5%)	0.014	95 (6.6%)	10 (3.8%)	13 (5.0%)	0.254	
Agree	1,167 (57.8%)	246 (60.7%)	921 (59.0%)	0.016	836 (58.0%)	164 (61.7%)	167 (64.2%)	0.234	
Strongly agree	665 (33.0%)	120 (29.6%)	545 (34.9%)		497 (34.5%)	91 (34.2%)	77 (29.6%)		
Don't know	43 (2.1%)								
Refused	8 (0.4%)								
H09 I am confident that I can tell when I	need to go get r	nedical care and	d when I can har	idle a health pro	blem myself (Q2	1)			
Strongly disagree	12 (0.6%)	4 (1.0%)	8 (0.5%)		10 (0.7%)	2 (0.7%)			
Disagree	108 (5.4%)	25 (6.1%)	83 (5.3%)	0.424	81 (5.6%)	12 (4.4%)	15 (5.8%)	0.071	
Agree	1,036 (51.3%)	217 (52.8%)	819 (52.4%)	0.034	745 (51.5%)	139 (51.5%)	152 (58.9%)	0.271	
Strongly agree	818 (40.5%)	165 (40.1%)	653 (41.8%)		610 (42.2%)	117 (43.3%)	91 (35.3%)		
Don't know	37 (1.8%)								
Refused	7 (0.3%)								
H10 I am confident I can tell my health o	care provider co	ncerns I have ev	en when he or sh	e does not ask (Q21)				
Strongly disagree	14 (0.7%)	9 (2.2%)	5 (0.3%)	<0.001	14 (1.0%)			0.196	

			Туре		Location				
PAM item	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value	
Disagree	45 (2.2%)	9 (2.2%)	36 (2.3%)		37 (2.5%)	5 (1.9%)	3 (1.2%)		
Agree	937 (46.4%)	204 (50.1%)	733 (46.5%)		681 (46.8%)	124 (45.9%)	132 (51.0%)		
Strongly agree	988 (49.0%)	185 (45.5%)	803 (50.9%)		723 (49.7%)	141 (52.2%)	124 (47.9%)		
Don't know	29 (1.4%)								
Refused	5 (0.2%)								
H11 I am confident that I can follow thro	ugh on medical	treatments I nee	d to do at home	(Q21)	2				
Strongly disagree	13 (0.6%)	9 (2.2%)	4 (0.3%)		13 (0.9%)				
Disagree	62 (3.1%)	18 (4.4%)	44 (2.8%)	<0.001	52 (3.6%)	4 (1.5%)	6 (2.3%)	0.042	
Agree	1,002 (49.7%)	205 (50.5%)	797 (50.9%)	<0.001	722 (50.1%)	134 (49.4%)	146 (55.9%)	0.000	
Strongly agree	895 (44.4%)	174 (42.9%)	721 (46.0%)		653 (45.3%)	133 (49.1%)	109 (41.8%)		
Don't know	39 (1.9%)								
Refused	7 (0.3%)								
H12 I am confident I can figure out solut	ions when new si	tuations or probl	ems arise with m	y health condition	on (Q21)	·	`		
Strongly disagree	25 (1.2%)	9 (2.3%)	16 (1.0%)		17 (1.2%)	4 (1.5%)	4 (1.6%)		
Disagree	247 (12.2%)	47 (12.0%)	200 (13.0%)	0.104	185 (13.2%)	25 (9.4%)	37 (14.5%)	0 5 4 4	
Agree	1,189 (58.9%)	251 (64.0%)	938 (61.1%)	0.124	858 (61.1%)	171 (64.0%)	160 (62.7%)	0.544	
Strongly agree	466 (23.1%)	85 (21.7%)	381 (24.8%)		345 (24.6%)	67 (25.1%)	54 (21.2%)		
Don't know	83 (4.1%)								
Refused	8 (0.4%)								
H13 I am confident that I can maintain li	ifestyle changes	like diet and exe	ercise even during	g times of stress	(Q21)	·	`		
Strongly disagree	58 (2.9%)	18 (4.5%)	40 (2.6%)	0.144	44 (3.1%)	5 (1.9%)	9 (3.5%)	0.271	
Disagree	276 (13.7%)	50 (12.6%)	226 (14.4%)	0.144	214 (14.9%)	29 (10.9%)	33 (12.7%)	0.361	

			Туре			Loco	ation		
PAM item	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value	
Agree	1,162 (57.6%)	239 (60.4%)	923 (58.9%)		834 (58.1%)	165 (61.8%)	163 (62.7%)		
Strongly agree	466 (23.1%)	89 (22.5%)	377 (24.1%)		343 (23.9%)	68 (25.5%)	55 (21.2%)		
Don't know	49 (2.4%)								
Refused	7 (0.3%)								
H14 PAM level									
Disengaged and overwhelmed	111 (5.5%)	34 (8.2%)	77 (4.8%)		86 (5.8%)	11 (4.0%)	14 (5.3%)		
Becoming aware but still struggling	393 (19.5%)	76 (18.3%)	317 (19.8%)		280 (18.9%)	51 (18.6%)	62 (23.4%)		
Taking action	825 (40.9%)	189 (45.4%)	636 (39.7%)	0.001	601 (40.6%)	114 (41.6%)	110 (41.5%)	0.463	
Maintaining behaviours and pushing further	689 (34.1%)	117 (28.1%)	572 (35.7%)		512 (34.6%)	98 (35.8%)	79 (29.8%)		
H14 Total score (PAM)	H14 Total score (PAM)								
Mean (median)	66 (66)	64 (63)	67 (66)	0.008	66 (66)	67 (66)	65 (63)	0.106	
Missing	0								

Hospital utilisation			Туре			Locc	ition			
Hospital utilisation	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value		
11 Patient attended an emergency department for their own medical care in last 12 months (Q23)										
Yes	728 (36.1%)	151 (36.3%)	577 (36.0%)	0.941	517 (35.0%)	116 (42.3%)	95 (35.8%)	0.045		
No	1,290 (63.9%)	265 (63.7%)	1,025 (64.0%)	0.781	962 (65.0%)	158 (57.7%)	170 (64.2%)	0.005		
12 Patient stayed one or more nights in h	I2 Patient stayed one or more nights in hospital in last 12 months (Q23)									
Yes	628 (31.1%)	124 (29.8%)	504 (31.5%)	0.557	445 (30.1%)	98 (35.8%)	85 (32.1%)	0.175		
No	1,390 (68.9%)	292 (70.2%)	1,098 (68.5%)	0.356	1,034 (69.9%)	176 (64.2%)	180 (67.9%)	0.165		

Table 78 – Hospital utilisation by practice ownership type and practice location

Source: CATI surveys conducted by The Social Research Centre between December 2017 and March 2019.

Table 79 – Patient assessment of chronic illness care (PACIC) by practice ownership type and practice location

PACIC item		Туре				Loco	ation	
PACIC item	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value 0.645 0.245
J01 I was asked for my ideas when we made decisions about my treatment (Q11)								
None of the time	287 (15.3%)	63 (16.6%)	224 (15.0%)		207 (15.1%)	37 (14.2%)	43 (17.6%)	
A little of the time	178 (9.5%)	45 (11.8%)	133 (8.9%)		140 (10.2%)	17 (6.5%)	21 (8.6%)	
Some of the time	484 (25.8%)	107 (28.2%)	377 (25.2%)	0.063	353 (25.7%)	67 (25.7%)	64 (26.1%)	0.645
Most of the time	487 (25.9%)	93 (24.5%)	394 (26.3%)		352 (25.7%)	76 (29.1%)	59 (24.1%)	
Always	441 (23.5%)	72 (18.9%)	369 (24.6%)		319 (23.3%)	64 (24.5%)	58 (23.7%)	
J02 I was given choices about treatmen	t to think about (Q11)						
None of the time	292 (15.3%)	84 (21.4%)	208 (13.7%)		207 (14.7%)	38 (14.6%)	47 (19.1%)	
A little of the time	149 (7.8%)	43 (10.9%)	106 (7.0%)	<0.001	105 (7.5%)	21 (8.1%)	23 (9.3%)	0.245
Some of the time	373 (19.5%)	76 (19.3%)	297 (19.6%)		278 (19.8%)	45 (17.3%)	50 (20.3%)	
Most of the time	445 (23.3%)	84 (21.4%)	361 (23.8%)		336 (23.9%)	53 (20.4%)	56 (22.8%)	

			Туре			Location				
PACIC item	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value 0.143 0.764		
Always	651 (34.1%)	106 (27.0%)	545 (35.9%)		478 (34.0%)	103 (39.6%)	70 (28.5%)			
J03 I was sure that my doctor or nurse thought about my values, beliefs, and traditions when they recommended treatments to me (Q11)										
None of the time	130 (6.9%)	39 (10.1%)	91 (6.0%)		101 (7.3%)	15 (5.8%)	14 (5.5%)			
A little of the time	64 (3.4%)	13 (3.4%)	51 (3.4%)		43 (3.1%)	10 (3.9%)	11 (4.3%)			
Some of the time	169 (8.9%)	38 (9.8%)	131 (8.7%)	0.020	121 (8.8%)	19 (7.3%)	29 (11.5%)	0.143		
Most of the time	437 (23.1%)	97 (25.1%)	340 (22.6%)		329 (23.8%)	46 (17.8%)	62 (24.5%)			
Always	1,094 (57.8%)	200 (51.7%)	894 (59.3%)		788 (57.0%)	169 (65.3%)	137 (54.2%)			
J04 I was shown how what I did to care	for myself influen	ced my conditio	n (Q11)	-	-					
None of the time	145 (7.7%)	35 (9.0%)	110 (7.4%)		102 (7.4%)	22 (8.6%)	21 (8.5%)	0.764		
A little of the time	102 (5.4%)	23 (5.9%)	79 (5.3%)		74 (5.4%)	16 (6.3%)	12 (4.9%)			
Some of the time	269 (14.3%)	65 (16.8%)	204 (13.7%)	0.293	191 (13.9%)	39 (15.3%)	39 (15.9%)			
Most of the time	561 (29.9%)	114 (29.4%)	447 (30.0%)]	411 (29.8%)	69 (27.1%)	81 (32.9%)			
Always	801 (42.7%)	151 (38.9%)	650 (43.6%)]	599 (43.5%)	109 (42.7%)	93 (37.8%)			
J05 I was asked to talk about my goals i	n caring for my c	ondition (Q11)	2	-	-					
None of the time	296 (15.3%)	81 (20.3%)	215 (14.0%)		221 (15.6%)	33 (12.5%)	42 (16.5%)			
A little of the time	146 (7.5%)	29 (7.3%)	117 (7.6%)]	108 (7.6%)	14 (5.3%)	24 (9.4%)	0.021		
Some of the time	362 (18.7%)	94 (23.6%)	268 (17.5%)	<0.001	285 (20.1%)	36 (13.7%)	41 (16.1%)			
Most of the time	499 (25.8%)	94 (23.6%)	405 (26.4%)]	365 (25.8%)	73 (27.8%)	61 (23.9%)			
Always	631 (32.6%)	101 (25.3%)	530 (34.5%)		437 (30.9%)	107 (40.7%)	87 (34.1%)			
J06 I was helped to set specific goals to	improve my eati	ng or exercise ((Q11)	-	-					
None of the time	306 (15.8%)	79 (19.5%)	227 (14.9%)	0147	216 (15.3%)	33 (12.7%)	57 (22.3%)	0.070		
A little of the time	177 (9.2%)	42 (10.3%)	135 (8.9%)	0.14/	135 (9.5%)	24 (9.2%)	18 (7.0%)	0.079		

PACIC item			Туре		Location				
	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value	
Some of the time	407 (21.1%)	83 (20.4%)	324 (21.2%)		297 (21.0%)	54 (20.8%)	56 (21.9%)		
Most of the time	513 (26.6%)	101 (24.9%)	412 (27.0%)		382 (27.0%)	77 (29.6%)	54 (21.1%)		
Always	528 (27.3%)	101 (24.9%)	427 (28.0%)		385 (27.2%)	72 (27.7%)	71 (27.7%)		
J07 I was given a written list of things I sh	nould do to impro	ove my health (Q	12)						
None of the time	655 (33.8%)	142 (34.9%)	513 (33.5%)		485 (34.1%)	82 (31.9%)	88 (34.0%)		
A little of the time	185 (9.5%)	37 (9.1%)	148 (9.7%)	0.530	130 (9.1%)	24 (9.3%)	31 (12.0%)	0.568	
Some of the time	414 (21.3%)	79 (19.4%)	335 (21.9%)		301 (21.1%)	56 (21.8%)	57 (22.0%)		
Most of the time	373 (19.2%)	74 (18.2%)	299 (19.5%)		266 (18.7%)	55 (21.4%)	52 (20.1%)		
Always	313 (16.1%)	75 (18.4%)	238 (15.5%)		242 (17.0%)	40 (15.6%)	31 (12.0%)		
J08 I was asked questions, either directly	y or on a survey,	about my health	habits (Q12)						
None of the time	378 (19.4%)	86 (21.7%)	292 (18.9%)		266 (18.7%)	47 (17.5%)	65 (25.8%)	0.079	
A little of the time	202 (10.4%)	38 (9.6%)	164 (10.6%)		148 (10.4%)	24 (8.9%)	30 (11.9%)		
Some of the time	448 (23.0%)	103 (25.9%)	345 (22.3%)	0.108	337 (23.6%)	68 (25.3%)	43 (17.1%)		
Most of the time	503 (25.8%)	102 (25.7%)	401 (25.9%)		365 (25.6%)	78 (29.0%)	60 (23.8%)		
Always	415 (21.3%)	68 (17.1%)	347 (22.4%)		309 (21.7%)	52 (19.3%)	54 (21.4%)		
J09 I was satisfied that my care was well	l organised (Q12)								
None of the time	38 (1.9%)	10 (2.4%)	28 (1.8%)		27 (1.8%)	5 (1.8%)	6 (2.3%)		
A little of the time	52 (2.6%)	17 (4.1%)	35 (2.2%)		34 (2.3%)	8 (3.0%)	10 (3.8%)	0.326	
Some of the time	114 (5.7%)	27 (6.5%)	87 (5.5%)	0.005	81 (5.5%)	13 (4.8%)	20 (7.6%)		
Most of the time	469 (23.5%)	116 (28.0%)	353 (22.3%)		342 (23.4%)	56 (20.7%)	71 (27.0%)		
Always	1,325 (66.3%)	244 (58.9%)	1,081 (68.2%)		980 (66.9%)	189 (69.7%)	156 (59.3%)		
J10 I was contacted after a visit to see how things were going (Q12)									

			Туре		Location				
PACIC item	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value 0.027 0.685 <0.001	
None of the time	767 (39.5%)	175 (43.4%)	592 (38.4%)		571 (40.2%)	79 (29.8%)	117 (45.7%)		
A little of the time	186 (9.6%)	46 (11.4%)	140 (9.1%)) () () () () () () () () () (138 (9.7%)	26 (9.8%)	22 (8.6%)		
Some of the time	438 (22.5%)	80 (19.9%)	358 (23.2%)	0.125	314 (22.1%)	68 (25.7%)	56 (21.9%)	0.027	
Most of the time	282 (14.5%)	51 (12.7%)	231 (15.0%)	.) 0.125 .) .) .) .) .) .) .) .) .) .)	204 (14.3%)	50 (18.9%)	28 (10.9%)		
Always	270 (13.9%)	51 (12.7%)	219 (14.2%)		195 (13.7%)	42 (15.8%)	33 (12.9%)		
J11 I was encouraged to attend program	ms in the commu	nity that could h	elp me (Q12)		-	<u> </u>			
None of the time	777 (40.4%)	187 (47.7%)	590 (38.5%)		579 (41.0%)	94 (36.0%)	104 (41.3%)		
A little of the time	195 (10.1%)	36 (9.2%)	159 (10.4%)	0.011	143 (10.1%)	26 (10.0%)	26 (10.3%)	0.685	
Some of the time	462 (24.0%)	89 (22.7%)	373 (24.3%)		337 (23.9%)	67 (25.7%)	58 (23.0%)		
Most of the time	252 (13.1%)	37 (9.4%)	215 (14.0%)		184 (13.0%)	41 (15.7%)	27 (10.7%)		
Always	238 (12.4%)	43 (11.0%)	195 (12.7%)		168 (11.9%)	33 (12.6%)	37 (14.7%)		
J12 I was asked how my visits with other	doctors were go	oing (Q12)	-	-	-				
None of the time	670 (36.5%)	174 (45.1%)	496 (34.2%)		484 (35.8%)	86 (34.5%)	100 (42.4%)		
A little of the time	105 (5.7%)	19 (4.9%)	86 (5.9%)		70 (5.2%)	13 (5.2%)	22 (9.3%)		
Some of the time	290 (15.8%)	60 (15.5%)	230 (15.9%)	<0.001	222 (16.4%)	30 (12.0%)	38 (16.1%)	<0.001	
Most of the time	280 (15.2%)	55 (14.2%)	225 (15.5%)		214 (15.8%)	32 (12.9%)	34 (14.4%)		
Always	492 (26.8%)	78 (20.2%)	414 (28.5%)		362 (26.8%)	88 (35.3%)	42 (17.8%)		
J13 Total score (PACIC)									
Mean (median)	3.4 (3.5)	3.2 (3.3)	3.4 (3.5)	<0.001	3.4 (3.5)	3.5 (3.6)	3.2 (3.3)	0.007	
Missing	3								
J14 PACIC: Patient activation score									
Mean (median)	3.4 (3.5)	3.2 (3.5)	3.5 (3.5)	<0.001	3.4 (3.5)	3.5 (4.0)	3.3 (3.5)	0.041	

			Туре		Location				
PACIC item	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+	p value	
Missing	34								
J15 PACIC: Decision support score									
Mean (median)	3.7 (3.7)	3.6 (3.7)	3.8 (4.0)	0.053	3.7 (3.7)	3.8 (4.0)	3.6 (3.7)	0.061	
Missing	5								
J16 PACIC: Goal setting score									
Mean (median)	3.4 (3.7)	3.2 (3.3)	3.4 (3.7)	< 0.001	3.4 (3.7)	3.5 (3.7)	3.3 (3.3)	0.097	
Missing	9								
J17 PACIC: Problem solving score				-					
Mean (median)	4.2 (5.0)	4.0 (5.0)	4.3 (5.0)	0.003	4.2 (5.0)	4.3 (5.0)	4.2 (5.0)	0.048	
Missing	124								
J18 PACIC: Follow-up/ co-ordination score									
Mean (median)	2.6 (2.7)	2.5 (2.3)	2.7 (2.7)	<0.001	2.6 (2.7)	2.8 (3.0)	2.5 (2.3)	0.002	
Missing	14								

Table 80 – Patient rating of HCH practice by practice ownership type and practice location

K Patient rating of HCH practice			Туре			Locat	ion	p value 9 (9.0) 0.007		
	Total	Corporate	Other	p value	MMM 1	MMM 2/3	MMM 4+ 8.9 (9.0)	p value		
K1 Patient rating of the HCH practice (0-10)										
Mean (median)	9.0 (9.0)	8.9 (9.0)	9.0 (9.0)	<0.001	9.0 (9.0)	9.1 (10.0)	8.9 (9.0)	0.007		
Missing	18									

Appendix 4 – Risk stratification data: Additional tables

Table 81 – HARP: Presenting clinical symptoms, by tier, and score

Clinical symptom and score	Total	Tier 1	Tier 2	Tier 3	P				
Presenting clinical symptoms (such as diagnosis of chronic diseases and complex care needs)									
Diagnosis of Chronic Respiratory condition such as COPD, Paediatric asthma	4,193 (33.7%)	534 (23.6%)	2,003 (32.7%)	1,656 (40.9%)	<0.001				
Diagnosis of Chronic Cardiac condition such as CHF, Angina	4,137 (33.2%)	623 (27.5%)	1,907 (31.1%)	1,607 (39.7%)	<0.001				
Diagnosis of Complex care needs in frail aged such as dementia, falls, incontinence	2,216 (17.8%)	106 (4.7%)	713 (11.6%)	1,397 (34.5%)	<0.001				
Diagnosis of Complex care needs in people under 55 years, such as mental health issues	2,001 (16.1%)	135 (6.0%)	885 (14.4%)	981 (24.2%)	<0.001				
Co-morbid diagnosis of diabetes and/or renal failure and/or liver disease	5,368 (43.1%)	822 (36.3%)	2,570 (41.9%)	1,976 (48.8%)	<0.001				
Z: Score (out of 5)									
Zero	1,588 (12.8%)	590 (26.1%)	832 (13.6%)	166 (4.1%)					
One	5,580 (44.8%)	1,189 (52.6%)	3,017 (49.2%)	1,374 (33.9%)					
Тwo	3,766 (30.3%)	419 (18.5%)	1,839 (30.0%)	1,508 (37.2%)	<0.001				
Three	1,263 (10.1%)	63 (2.8%)	403 (6.6%)	797 (19.7%)	<0.001				
Four	241 (1.9%)	1 (0.0%)	41 (0.7%)	199 (4.9%)					
Five	10 (0.1%)		2 (0.0%)	8 (0.2%)					

Source: Risk stratification data provided by Precedence Health Care, to June 2019.

Service access profile and score	Total	Tier 1	Tier 2	Tier 3	P value	
Service access profile						
Have you been to hospital more than once in the last 12 months including today?	2,974 (23.9%)	167 (7.4%)	1,135 (18.5%)	1,672 (41.3%)	<0.001	
Regular medical checks (2 times a year)	1,986 (16.0%)	227 (10.0%)	1,218 (19.9%)	541 (13.4%)	<0.001	
Reduced ability to self care	3,350 (26.9%)	33 (1.5%)	786 (12.8%)	2,531 (62.5%)	<0.001	
Z: Score (out of 10)						
Zero	5,685 (45.7%)	1,844 (81.5%)	3,230 (52.7%)	611 (15.1%)		
Ten	102 (0.8%)		4 (0.1%)	98 (2.4%)		
Three	3,564 (28.6%)	250 (11.1%)	1,721 (28.1%)	1,593 (39.3%)	<0.001	
Four	1,754 (14.1%)	159 (7.0%)	952 (15.5%)	643 (15.9%)	<0.001	
Six	225 (1.8%)	1 (0.0%)	48 (0.8%)	176 (4.3%)		
Seven	1,118 (9.0%)	8 (0.4%)	179 (2.9%)	931 (23.0%)		

Table 82 – HARP: Service access profile items, by tier, and score

Source: Risk stratification data provided by Precedence Health Care, to June 2019.
Lifestyle characteristic and score	Total	Tier 1	Tier 2	Tier 3	P value
Lifestyle characteristics (such as smoking, overweigh	t, physical activity)				
Smoking	2,238 (18.0%)	241 (10.7%)	1,036 (16.9%)	961 (23.7%)	<0.001
Overweight / Obesity (Guide: BMI 26-35)	8,228 (66.1%)	1,365 (60.3%)	4,248 (69.3%)	2,615 (64.5%)	<0.001
Underweight (Guide: BMI < 19)	506 (4.1%)	44 (1.9%)	209 (3.4%)	253 (6.2%)	<0.001
High cholesterol (total cholesterol \geq 5.5mmol/L, HDL \leq 1.0mmol/L, LDL \geq 2.0mmol/L)	8,846 (71.1%)	1,586 (70.1%)	4,502 (73.4%)	2,758 (68.1%)	<0.001
High blood pressure (≥ 140/90mmHg or on medication for high blood pressure)	6,256 (50.3%)	1,016 (44.9%)	3,216 (52.4%)	2,024 (50.0%)	<0.001
Physical inactivity (less than 30 mins/d & 4 days/wk)	6,936 (55.7%)	675 (29.8%)	3,269 (53.3%)	2,992 (73.8%)	<0.001
Polypharmacy > 5 medications with difficulty managing	8,159 (65.5%)	1,054 (46.6%)	3,884 (63.3%)	3,221 (79.5%)	<0.001
Z: Score (out of 6)					
Zero	171 (1.4%)	91 (4.0%)	58 (0.9%)	22 (0.5%)	
One	911 (7.3%)	332 (14.7%)	415 (6.8%)	164 (4.0%)	
Тwo	2,095 (16.8%)	597 (26.4%)	992 (16.2%)	506 (12.5%)	
Three	3,558 (28.6%)	690 (30.5%)	1,858 (30.3%)	1,010 (24.9%)	<0.001
Four	3,362 (27.0%)	380 (16.8%)	1,721 (28.1%)	1,261 (31.1%)	
Five	2,160 (17.4%)	167 (7.4%)	1,033 (16.8%)	960 (23.7%)	
Six	191 (1.5%)	5 (0.2%)	57 (0.9%)	129 (3.2%)	

Table 83 – HARP: Lifestyle characteristics, by tier, and score

Complication and score	Total	Tier 1	Tier 2	Tier 3	P value
Complications (such as chronic pain, skin integrity, c	ognitive impairment)				
Use of services previously	4,659 (37.4%)	463 (20.5%)	2,020 (32.9%)	2,176 (53.7%)	<0.001
Carer Stress issues	2,219 (17.8%)	138 (6.1%)	750 (12.2%)	1,331 (32.8%)	<0.001
No Carer availability	1,240 (10.0%)	54 (2.4%)	396 (6.5%)	790 (19.5%)	<0.001
Cognitive impairment	1,340 (10.8%)	61 (2.7%)	325 (5.3%)	954 (23.5%)	<0.001
Change to drug regimen	2,053 (16.5%)	188 (8.3%)	926 (15.1%)	939 (23.2%)	<0.001
Chronic Pain	5,430 (43.6%)	652 (28.8%)	2,711 (44.2%)	2,067 (51.0%)	<0.001
Compromised skin integrity e.g. Wounds, PAC, Cellulitis	1,352 (10.9%)	101 (4.5%)	473 (7.7%)	778 (19.2%)	<0.001
Exposure to triggers for asthma	1,686 (13.5%)	210 (9.3%)	825 (13.4%)	651 (16.1%)	<0.001
Z: Score (out of 8)	·	·	·	·	
Zero	2,442 (19.6%)	954 (42.2%)	1,311 (21.4%)	177 (4.4%)	
One	4,271 (34.3%)	870 (38.5%)	2,419 (39.4%)	982 (24.2%)	
Тwo	3,085 (24.8%)	342 (15.1%)	1,542 (25.1%)	1,201 (29.6%)	
Three	1,602 (12.9%)	79 (3.5%)	618 (10.1%)	905 (22.3%)	
Four	681 (5.5%)	10 (0.4%)	175 (2.9%)	496 (12.2%)	<0.001
Five	246 (2.0%)	6 (0.3%)	48 (0.8%)	192 (4.7%)	
Six	79 (0.6%)	1 (0.0%)	18 (0.3%)	60 (1.5%)	
Seven	32 (0.3%)		3 (0.0%)	29 (0.7%)	
Eight	10 (0.1%)			10 (0.2%)	

Table 84 – HARP: Complication items, by tier, and score

Psycho-social issue and score	Total	Tier 1	Tier 2	Tier 3	P value			
Psycho-social issues								
Mental health (depression, anxiety or psychiatric illness)	5,474 (44.0%)	523 (23.1%)	2,647 (43.2%)	2,304 (56.9%)	<0.001			
Disability (Intellectual, physical, visual, hearing)	3,190 (25.6%)	148 (6.5%)	1,234 (20.1%)	1,808 (44.6%)	<0.001			
Transport to services	2,586 (20.8%)	96 (4.2%)	821 (13.4%)	1,669 (41.2%)	<0.001			
Financial issues (inability to afford health services and/or medication)	2,884 (23.2%)	116 (5.1%)	1,128 (18.4%)	1,640 (40.5%)	<0.001			
CALD or Indigenous (health beliefs)	1,538 (12.4%)	102 (4.5%)	684 (11.2%)	752 (18.6%)	<0.001			
Illiteracy and/or limited English	804 (6.5%)	24 (1.1%)	253 (4.1%)	527 (13.0%)	<0.001			
Unstable Living Environment	647 (5.2%)	17 (0.8%)	188 (3.1%)	442 (10.9%)	<0.001			
Socially isolated	2,167 (17.4%)	59 (2.6%)	725 (11.8%)	1,383 (34.1%)	<0.001			
Drug and Alcohol problems	710 (5.7%)	24 (1.1%)	248 (4.0%)	438 (10.8%)	<0.001			
Z: Impact these combined factors have on the perso	n's ability to self-man	age their condition as	nil, low or high.		<u></u>			
Nil (score = 0)	1,734 (13.9%)	1,512 (66.8%)	222 (3.6%)					
Low (score = 7)	6,468 (52.0%)	750 (33.2%)	5,424 (88.4%)	294 (7.3%)	<0.001			
High (score = 15)	4,246 (34.1%)		488 (8.0%)	3,758 (92.7%)				

Table 85 – HARP: Psycho-social issue items, by tier, and score

Risk profile and self-management impact	Total	Tier 1	Tier 2	Tier 3	P							
					value							
Patients who had the HARP completed followin	atients who had the HAKP completed following the clinician overriding their PKM score											
Yes	3,674 (29.5%)	935 (41.3%)	1,931 (31.5%)	808 (19.9%)	<0.001							
HARP risk profile												
Low (risk score 1 to 10)	1,470 (11.8%)	1,470 (65.0%)										
Medium (risk score 11 to 23)	6,926 (55.6%)	792 (35.0%)	6,134 (100.0%)		<0.001							
High (risk score 24 to 38)	4,011 (32.2%)			4,011 (99.0%)	<0.001							
Urgent (risk score 39 to 49)	41 (0.3%)			41 (1.0%)								
Readiness to change assessment	<u>^</u>											
0: Relapse	131 (1.1%)	5 (0.2%)	44 (0.7%)	82 (2.0%)								
1: Maintenance	2,621 (21.1%)	857 (37.9%)	1,375 (22.4%)	389 (9.6%)								
2: Action	2,401 (19.3%)	588 (26.0%)	1,137 (18.5%)	676 (16.7%)]							
3: Preparation	2,139 (17.2%)	399 (17.6%)	1,147 (18.7%)	593 (14.6%)	<0.001							
4: Contemplation	2,775 (22.3%)	285 (12.6%)	1,493 (24.3%)	997 (24.6%)								
5: Pre-contemplation	1,569 (12.6%)	107 (4.7%)	852 (13.9%)	610 (15.1%)								
6: No capacity for self-management	812 (6.5%)	21 (0.9%)	86 (1.4%)	705 (17.4%)								

Table 86 – HARP risk profile and self-management impact items, by tier, and score

Appendix 5 – Community Pharmacy in HCH Trial: Additional tables

	Table 87	7 – Patient characteristics	, by tier		
Characteristic	Total (n = 468)	Tier 1 (n = 44)	Tier 2 (n = 235)	Tier 3 (n = 189)	P value
A1 Sex					
Female	261 (57.5%)	22 (56.4%)	123 (53.9%)	116 (62.0%)	0.051
Male	193 (42.5%)	17 (43.6%)	105 (46.1%)	71 (38.0%)	0.231
A2 Age group		·			· ·
00-24	18 (4.0%)	1 (2.7%)	9 (4.0%)	8 (4.3%)	
25-44	27 (6.0%)		11 (4.9%)	16 (8.6%)	
45-64	138 (30.7%)	10 (27.0%)	53 (23.6%)	75 (40.1%)	<0.001
65-74	108 (24.1%)	13 (35.1%)	61 (27.1%)	34 (18.2%)	<0.001
75-84	107 (23.8%)	9 (24.3%)	72 (32.0%)	26 (13.9%)	
85+	51 (11.4%)	4 (10.8%)	19 (8.4%)	28 (15.0%)	
A4 English speaking			1	1	
FALSE	43 (9.2%)	1 (2.3%)	20 (8.5%)	22 (11.6%)	0.124
TRUE	425 (90.8%)	43 (97.7%)	215 (91.5%)	167 (88.4%)	0.134
A5 Hospitalised in the last 6 mont	hs				
FALSE	393 (84.0%)	39 (88.6%)	214 (91.1%)	140 (74.1%)	<0.001
TRUE	75 (16.0%)	5 (11.4%)	21 (8.9%)	49 (25.9%)	<0.001
A6 Medication adherence (Meds	index score)	·			· ·
0 to <50	21 (4.5%)	2 (4.5%)	8 (3.4%)	11 (5.8%)	0.207
50 to <80	99 (21.2%)	6 (13.6%)	54 (23.0%)	39 (20.6%)	0.207

Characteristic	Total (n = 468)	Tier 1 (n = 44)	Tier 2 (n = 235)	Tier 3 (n = 189)	P value
80 to <85	59 (12.6%)	5 (11.4%)	37 (15.7%)	17 (9.0%)	
85 to <90	58 (12.4%)	6 (13.6%)	29 (12.3%)	23 (12.2%)	m
90 to <95	89 (19.0%)	14 (31.8%)	42 (17.9%)	33 (17.5%)	m
95 to 100	142 (30.3%)	11 (25.0%)	65 (27.7%)	66 (34.9%)	m
A7 Patients MedsIndex score					
	89.0 (0.0, 100.0)	90.0 (1.0, 100.0)	87.0 (0.0, 100.0)	90.0 (0.0, 100.0)	0.424
A8 Pharmacists belief of patients	s' adherence to solids (0 to 10)				
	9.0 (0.0, 10.0)	9.0 (4.0, 10.0)	9.0 (0.0, 10.0)	9.0 (0.0, 10.0)	0.092

Source: Community Pharmacy in HCH trial Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2019.

Table 88 – Conditions patients are taking medication for, by tier

Condition	Total (n = 468)	Tier 1 (n = 44)	Tier 2 (n = 235)	Tier 3 (n = 189)
F04 Heart disease	190 (40.6%)	15 (34.1%)	94 (40.0%)	81 (42.9%)
F05 Stroke	34 (7.3%)	4 (9.1%)	22 (9.4%)	8 (4.2%)
F06 Cancer	13 (2.8%)	0	7 (3.0%)	6 (3.2%)
F07 Osteoporosis	66 (14.1%)	8 (18.2%)	30 (12.8%)	28 (14.8%)
F08 Depression or anxiety	126 (26.9%)	7 (15.9%)	57 (24.3%)	62 (32.8%)
F09 Arthritis	150 (32.1%)	13 (29.5%)	88 (37.4%)	49 (25.9%)
F10 Diabetes	205 (43.8%)	11 (25.0%)	94 (40.0%)	100 (52.9%)
F11 High blood pressure	339 (72.4%)	32 (72.7%)	175 (74.5%)	132 (69.8%)
F12 Asthma	1 (0.2%)	0	1 (0.4%)	0
F13 High blood cholesterol	247 (52.8%)	26 (59.1%)	121 (51.5%)	100 (52.9%)
F14 Pain	122 (26.1%)	10 (22.7%)	59 (25.1%)	53 (28.0%)
F15 Digestive	116 (24.8%)	14 (31.8%)	57 (24.3%)	45 (23.8%)
F16 Kidney disease	56 (12.0%)	2 (4.5%)	22 (9.4%)	32 (16.9%)

Condition	Total (n = 468)	Tier 1 (n = 44)	Tier 2 (n = 235)	Tier 3 (n = 189)
F17 Respiratory	152 (32.5%)	7 (15.9%)	84 (35.7%)	61 (32.3%)
F18 Other conditions	392 (83.8%)	26 (59.1%)	191 (81.3%)	175 (92.6%)

Source: Community Pharmacy in HCH trial Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2019.

Table 89 – Agreed medication management goals, by tier

Goal	Total (n = 468)	Tier 1 (n = 44)	Tier 2 (n = 235)	Tier 3 (n = 189)
Improved medication adherence	195 (41.7%)	3 (6.8%)	76 (32.3%)	116 (61.4%)
Improved patient knowledge about their medicines leading to improved medication use and disease self-management	238 (50.9%)	32 (72.7%)	149 (63.4%)	57 (30.2%)
Improved technique/usage of medication devices	69 (14.7%)	5 (11.4%)	33 (14.0%)	31 (16.4%)
Optimise the medication dose and/or number or type of medicines	83 (17.7%)	7 (15.9%)	40 (17.0%)	36 (19.0%)
Reduced medication side effects	38 (8.1%)	4 (9.1%)	14 (6.0%)	20 (10.6%)
Other	87 (18.6%)	10 (22.7%)	40 (17.0%)	37 (19.6%)

Source: Community Pharmacy in HCH trial Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2019.

Table 90 – Person responsible for medication management goal

Goal	Patients with goal	Person responsible (% of patients with goal)				Number of person types responsible for goal (% of patients with goal)			
	(% of total)	Patient/carer	Pharmacist	GP	Other	1	2	3	4
Improved medication adherence	195 (41.7%)	123 (63.1%)	172 (88.2%)	23 (11.8%)	5 (2.6%)	88 (45.1%)	84 (43.1%)	21 (10.8%)	1 (0.5%)
Improved patient knowledge about their medicines leading to improved medication use and disease self- management	238 (50.9%)	164 (68.9%)	207 (87.0%)	79 (33.2%)	3 (1.3%)	96 (40.3%)	72 (30.3%)	67 (28.2%)	3 (1.3%)
Improved technique/usage of medication devices	69 (14.7%)	57 (82.6%)	55 (79.7%)	12 (17.4%)	0 (0.0%)	23 (33.3%)	37 (53.6%)	9 (13.0%)	0 (0.0%)

Goal	Patients with goal	Person responsible (% of patients with goal)				Number of person types responsible for goal (% of patients with goal)			
	(% of total)	Patient/carer	Pharmacist	GP	Other	1	2	3	4
Optimise the medication dose and/or number or type of medicines	83 (17.7%)	54 (65.1%)	56 (67.5%)	47 (56.6%)	5 (6.0%)	28 (33.7%)	27 (32.5%)	24 (28.9%)	2 (2.4%)
Reduced medication side effects	38 (8.1%)	27 (71.1%)	23 (60.5%)	23 (60.5%)	4 (10.5%)	7 (18.4%)	23 (60.5%)	8 (21.1%)	0 (0.0%)
Other	87 (18.6%)	56 (64.4%)	59 (67.8%)	42 (48.3%)	11 (12.6%)	35 (40.2%)	27 (31.0%)	21 (24.1%)	4 (4.6%)

Source: Community Pharmacy in HCH trial Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2019.

Table 91 – Supporting services provided by pharmacist, by patient goal

		Number r	receiving service (percent of patients	with goal)	
Goal	Asthma management plan Blood glucose Blood pressure Do monitoring monitoring administ		Dose administration aid	Medical device usage training/education	Other	
Improved medication adherence	3 (1.5%)	7 (3.6%)	16 (8.2%)	95 (48.7%)	9 (4.6%)	16 (8.2%)
Improved patient knowledge about their medicines leading to improved medication use and disease self-management	6 (2.5%)	23 (9.7%)	90 (37.8%)	6 (2.5%)	5 (2.1%)	7 (2.9%)
Improved technique/usage of medication devices	6 (8.7%)	5 (7.2%)	2 (2.9%)	0	15 (21.7%)	1 (1.4%)
Optimise the medication dose and/or number or type of medicines	2 (2.4%)	0	8 (9.6%)	5 (6.0%)	1 (1.2%)	17 (20.5%)
Reduced medication side effects	0	0	2 (5.3%)	0	1 (2.6%)	10 (26.3%)
Other	3 (3.4%)	5 (5.7%)	26 (29.9%)	9 (10.3%)	2 (2.3%)	13 (14.9%)
Total number of patients receiving the service	20	40	144	115	33	64

Source: Community Pharmacy in HCH trial Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2019.

	Session		
Outcome	Initial (n = 468)	2nd (n = 141)	3rd (n = 2)
M01 Pharmacist updated reconciled medication list	460 (98.3%)	138 (97.9%)	2 (100.0%)
M02 Pharmacist provided patient with medicine education	416 (88.9%)	123 (87.2%)	1 (50.0%)
M03 Pharmacist provided patient with disease-state information	352 (75.2%)	98 (69.5%)	1 (50.0%)
M04 HCH/GP advised of issues identified through other communication	140 (29.9%)	26 (18.4%)	
M05 Pharmacist used technology-assisted follow-up reminders (e.g. text messages, email messages)	108 (23.1%)	35 (24.8%)	
M06 Health Care Home/GP verbally consulted about patient	66 (14.1%)	19 (13.5%)	
M07 Pharmacist suggested patient referred to other health provider (e.g. allied health)	51 (10.9%)	14 (9.9%)	
M08 Pharmacist participated in HCH team care meetings	11 (2.4%)	1 (0.7%)	
M09 Pharmacist referred patient for an additional medication management service	56 (12.0%)	35 (24.8%)	
M10 Other	31 (6.6%)	6 (4.3%)	

Table 92 – Outcomes of medication management plan (MMP)

Source: Community Pharmacy in HCH trial Health Outcomes data set provided by the Pharmacy Guild, to 30 June 2019.

Appendix 6 – SNOMED-CT textual descriptions

Patient conditions	SNOMED-CT textual descriptions
Asthma	Acute asthma, acute exacerbation of asthma, allergic asthma, asthma,
	asthma attack, asthmatic bronchitis, childhood asthma, chronic
	obstructive airway disease with asthma, cough variant asthma, eosinophilic
	asthma, exacerbation of asthma, exercise-induced asthma, hay fever with
	asthma, late onset asthma, occupational asthma, seasonal asthma, severe
	asthma, thunderstorm asthma, viral exacerbation of asthma.
COPD	Acute exacerbation of chronic obstructive airways disease, COPD, chronic
	lung disease, chronic obstructive airway disease with asthma, interstitial
	lung disease, pulmonary fibrosis, restrictive lung disease.
Atrial fibrillation	Atrial fibrillation, atrial fibrillation and flutter, chronic atrial fibrillation,
	controlled atrial fibrillation, non-rheumatic atrial fibrillation, paroxysmal atrial
	fibrillation, rapid atrial fibrillation.
Coronary heart	Acute ST segment elevation myocardial infarction, acute coronary
disease	syndrome, acute myocardial infarction, acute non-ST segment elevation
	myocardial infarction, angina, cardiac arrest, coronary angioplasty,
	coronary artery bypass gratt, coronary artery bypass gratt, myocardial
	intarction, percutaneous transluminal coronary angioplasty, prinzmetal
	angina, silent myocardial intarction, stable angina.
Stroke	Brain stem inforction, brainstem stroke syndrome, cerebral embolism,
	cerebral haemorrhage, cerebral infarction, cerebrovascular accident,
	embolic stroke, haemorrhagic cerebral infarction, infracranial
	ndemorrnage, lett sided cerebral nemisphere cerebrovascular accident,
	subarachnola haemorrhage, subaural haemorrhage, thalamic infarction,
Concertive beart	Diventrieuler congective beert feilure, chronic beert feilure, congective
failure	bivenincular congestive near failure, chronic near failure, congestive
ICIIOIE	niedi failure, diastolic fiedi failure, fiedi failure, fiedi failure with feabced
	dysfunction, right heart failure
Osteoarthritis	Patellofemoral osteoarthritis
Osteoporosis	Osteoporosis, osteoporosis due to corticosteroids, osteoporotic fracture
0310000010313	posttraumatic osteoporosis, postmenopausal osteoporosis
Anxiety	Adjustment disorder with anxious mood, anxiety, anxiety, anxiety, anxiety
	disorder, anxiety neurosis, anxious personality disorder, chronic anxiety.
	aeneralised anxiety disorder, mixed anxiety and depressive disorder.
	separation anxiety disorder of childhood, social phobia.
Depression	adjustment disorder with depressed mood, agitated depression, chronic
	depression, depressed mood, depression, endogenous depression, major
	depressive disorder, mixed anxiety and depressive disorder, recurrent
	depression, severe depression, severe major depression with psychotic
	features, symptoms of depression.
Bipolar disorder	Bipolar, bipolar i disorder, bipolar ii disorder, bipolar disorder, schizoaffective
	disorder, bipolar type.
Schizophrenia	Catatonic schizophrenia, chronic paranoid schizophrenia, chronic
	schizophrenia, paranoid schizophrenia, psychotic disorder, schizoaffective
	disorder, schizophrenia.

Patient conditions	SNOMED-CT textual descriptions	
Dementia	Dementia, dementia associated with alcoholism, dementia of frontal lobe	
	type, frontotemporal dementia, senile dementia of the Lewy body type,	
	senile dementia with psychosis multi-infarct dementia, vascular dementia.	
High blood	Antihypertensive therapy, diastolic hypertension, essential hypertension,	
pressure	hypertensive, malignant hypertension, ocular hypertension, portal	
	hypertension, pulmonary hypertension, renal hypertension, renovascular	
	hypertension, systolic hypertension.	
High cholesterol	Cholesterol, dyslipidaemia, familial combined hyperlipidaemia, familial	
	hypercholesterolaemia, hypercholesterolaemia, hyperlipidaemia, mixed	
	hyperlipidaemia.	
Diabetes type 1	Diabetes mellitus type 1	
Diabetes type 2	Diabetes mellitus type 2	
Chronic kidney	Anaemia of chronic renal failure, chronic kidney disease, chronic renal	
disease	impairment, end stage renal disease, hypertensive renal disease, IGA	
	nephropathy, medullary sponge kidney, renal dialysis, transplant of kidney	