RCPA

The Royal College of Pathologists of Australasia

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PATHSUPPORT – ELECTRONIC CLINICAL DECISION SUPPORT (ECDS) WORKFLOW REQUIREMENTS FOR USE WITHIN THE AUSTRALIAN HEALTH SYSTEM

Document Control

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22/07/2024	1.0	Final Report	Report finalised	David Willock

Contents

1. Glossary of terms & acronyms

Acronym	Detail
ADHA	Australian Digital Health Agency
CME	Continuing Medical Education
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DI	Diagnostic Imaging
eCDS	electronic Clinical Decision Support
EMR	Electronic Medical Record
FHIR	Fast Healthcare Interoperability Resources
GBR	Guidance Based Requesting
GPs	General Practitioners
HL7	Health Level Seven
HL7 AU	HL7 Australia
LIS	Laboratory Information System
LOINC	Logical Observation Identifiers Names and Codes (Home – LOINC)
MBS	Medicare Benefits Schedule
MSIA	Medical Software Industry Association
MHR	My Health Record
NATA	National Association of Testing Authorities
NPAAC	National Pathology Accreditation Advisory Council
PHNs	Primary Health Networks
PMS	Practice Management System
POC	Proof of Concept
PSPs	Pathology Service Providers
QUPP	Quality Use of Pathology Program
RACGP	The Royal Australian College of General Practitioners
RCPA	The Royal College of Pathologists of Australasia
RCPAQAP	RCPA Quality Assurance Programs
SNOMED CT	Systemized Nomenclature of Medicine – Clinical Terms
SNOMED CT - AU	Systemized Nomenclature of Medicine – Clinical Terms - Australia
SPIA	Standardised Pathology Informatics in Australia

2. Executive summary

e-requesting for Pathology, along with e-Clinical Decision Support (eCDS), has the ability to support GPs and other requestors. To understand the current state of e-requesting and eCDS, under a Quality Use of Pathology Program Targeted Project Grant, this Project has reviewed the landscape for Pathology requesting in Australia.

This work included significant consultation with GPs, Pathology Service Providers, the Medical Software industry, Primary Health Networks and others. With over 100 sources of input, including webinars, surveys and meetings, and in excess of 150 hours of contributed time, the Project team gained valuable insights into the use of technology for requesting and supporting decisions for requesting. The Project team acknowledges the input and thanks all contributors for their efforts.

Whilst the National Digital Health Blueprint and Action Plan were published during the term of this Project there is clear alignment to the Blueprint's outcomes and the recommendations within this Report can provide information for consideration of both current and future initiatives on e-requesting and eCDS for Pathology.

The Project has delivered Workflows (Appendix A) that have been reviewed and received input from a range of stakeholders. These have used to describe workflows today and outline some of the opportunities for the future. It became clear during the consultations that there are actually two workflows, one for the specimen and the other for associated information.

The workflows, along with the consultation, have enabled the Project team to document a series of findings (Section 7.1), attributed to e-requesting, eCDS and the use of My Health Record (MHR). It is clear that paper requests will remain for a period of time, for various reasons including patient preference. It is equally clear that e-requesting is used by many GPs and many more would use it for telehealth if it was available. There is a clear benefit for Pathology Service Providers for the implementation of e-requests, including the provision of clinical information which enables them to provide reports in the clinical context.

There were few GPs using eCDS currently. There is an appetite for eCDS however, acknowledging that it would not be used by Requestors universally, should not reduce clinical autonomy and content needs to be peer reviewed by both GPs (and other Requestors) and Pathologists.

MHR was identified by some GPs as a source of information that they used, and it is clear from published reports that the use of MHR is increasing. GPs noted that use would increase if they were certain that information would be there, was easy to find and if MHR could be integrated into the GP workflow. With the Sparked initiative and the progression towards atomic data, there is opportunity for greater use, including longitudinal reporting and analysis.

The Recommendations contained within Section 7.2 provide items for consideration to improve the use of e-requesting, eCDS and MHR. Additionally, it is recommended that consideration is given to adopting the SPIA Guidelines on Requesting and Reporting of Pathology as standards, and including them as mandatory laboratory accreditation and assessment criteria under NPAAC.

The Report also includes recommendations for Pathology Reporting, which although out of scope for the Project, became evident when discussing workflows. This includes the rendering of Pathology Reports in a standard format, which is not the case today and can lead to errors in interpretation.

3. Project Statement

3.1 Background

Currently, some General Practitioners (GPs) can generate e-requests with electronic Clinical Decision Support (eCDS) at a range of levels and through a variety of software vendors. Uptake is largely dependent upon vendor software, ease of use, demographics, practice location, integration into workflow, cost, resources, trust, and time.

PathSupport, through the use of eCDS tools for clinicians, has the potential to assist workflow, guide electronic pathology requesting (e-requests), increase efficiencies with the Medicare Benefits Schedule (MBS) through more appropriate requesting, and enhance the delivery of quality pathology services.

The NPAAC Requirements for Medical Pathology Services (Second Edition 2018) and NPAAC Requirements for Information Communication and Reporting (Fifth Edition 2022) address guiding principles for pathology requesting and set the minimum requirements for pathology request data components. The RCPA Standardised Pathology Informatics in Australia (SPIA) Guidelines V4.0 is an enhancement of the NPAAC requirements; additionally, the RCPA Best Practice Guideline published in 2021 was developed to improve the use and interpretation of pathology test results by enabling clinicians to compare pathology test results from different providers when uploaded to the My Health Record (MHR). To date, practical implementation has focussed largely on reporting.

This Project has expanded on previous SPIA Guidelines and Best Practice Guideline development work, and the current Pathology Informatics - Interoperability Project, assessing the compliance of a pathology Laboratory Information System (LIS) against the SPIA Guidelines and Best Practice Guideline for receiving and reporting e-requests. E-requests in the context of this Report are specifically for the requesting of Pathology tests. Activities were undertaken in collaboration with the RCPAQAP.

The recommendations from this Project are intended to contribute to the following outcomes:

- improve the management, delivery and/or consumption of Medicare pathology services to ensure it is sustainable into the future
- support government eHealth strategies
- contribute to the program objective Quality Referrals (Requesting/Ordering): to support referral practices that:
    - are informed and facilitated by best practice professional relationships and protocols between referrers and providers;
    - are informed by evidence;
    - maximise health benefits; and
    - inform and engage consumers.

It is expected that the Project findings will further guide the RCPA in considering and recommending requirements to meet minimum accreditation standards e.g., NATA and NPAAC, that laboratories could implement to support eCDS and e-requests.

This Project was progressed under a Department of Health and Aged Care Grant (the Grant), as outlined in the Quality Use of Pathology Targeted Project Grants 2022-23 Grant Opportunity Guidelines GO6060.

3.2 Project Outline

The overall purpose of the Project was to identify factors that support , and barriers that prevent, digital health adoption in the Australian pathology sector. The project used a variety of mechanisms to identify these factors and barriers including mapping workflows and consulting broadly, as well as input, review and advice from the Working Group members.

The objectives the Project operated under are to:

- undertake a comprehensive analysis of current manual and digital workflow processes for pathology tests and the requirements for an end-to-end digital workflow process, i.e. identification of current processes for the ordering of a pathology test to the generation of test results.
- undertake a survey of at least 90% of pathology service providers on current workflow processes and capacity to inform the analysis of the workflow processes towards identifying an end-to-end digital workflow process.
- identify any gaps and/ or barriers that would decrease or fail to increase access to atomic or discreet data through MHR to improve timely diagnosis, treatment and care.
- develop a pilot (or Proof of Concept) that would test the usability of electronic clinical decision support tools for pathology requesting by clinicians and develop strategies to support engagement, best practice and reduce inappropriate pathology requesting.

  The Proof of Concept concentrated on expanding previous RCPA SPIA Guideline development work and the current RCPA Pathology Informatics Interoperability Pilot – Pathology and the Patient Project (QUPP funded) to assess the compliance of a pathology LIS against the RCPA SPIA Guidelines for receiving and reporting e-requests.

4. Scope

The Project scope statement is “to provide an overview of the maturity of pathology eCDS within Australia and some recommendations for consideration to positively drive forward the use of eCDS”.

The Project worked with stakeholders to understand potential barriers, including what differing factors affect the use of eCDS, for example trust, awareness, peer support (as opposed to eCDS), provider length of time in practice, clinical practice time pressures, geographic location, software configuration constraints, multiple standalone solutions, ease of navigation, etc.

The POC (or Proof of Concept) concentrated on expanding previous RCPA SPIA Guideline development work and the current RCPA Pathology Informatics Interoperability Pilot – Pathology and the Patient Project (QUPP funded) to assess the compliance of a pathology LIS against the RCPA SPIA Guidelines for receiving and reporting e-requests.

Activities in scope are

- Workflow analysis: Survey of Pathology Service Providers
  Survey at least 90% of providers on existing workflow process and capacity (and digital maturity), as well as barriers to currently achieving interoperability and uptake of the RCPA SPIA Guidelines V4.1. This work will inform the end-end digital workflow.
- Workflow Analysis: GP Survey.
  Survey a diverse range of GPs to understand requirements for, benefits of, and barriers to eCDS as part of the consultation process. This will aim to understand different cohorts’ use of eCDS, including its use as a tool to assist with e-requesting and e-requesting.

- Digital Readiness and Adoption: Consultation with RACGP and some selected Public Health Networks (PHNs).
  Consult with RACGP and selected PHNs to discuss eCDS current state, barriers to adoption and strategies to enhance adoption. In addition, discuss mechanisms to enhance appropriate ordering.
- Digital Readiness and Adoption: Medical Software Industry Association (MSIA).
  Consult with MSIA members on e-requesting and eCDS, including SPIA compliance, barriers to adoption, etc.
- Informatics: My Health Record usage and Informatics Standards.
  Broad consultation, including but not limited to the above channels, identifying gaps to the use of MHR, provide insights on known complexities, limitations and risks to uploading.
- Digital Readiness and Adoption: selected Jurisdictions.
  Meet with 2 or 3 States or Territories to discuss their compliance with SPIA Guidelines within both their public laboratories and within their Electronic Medical Records (EMR) implementations.
- eCDS Pilot: SPIA compliance.
  Work closely with the Pathology Interoperability Pilot Project in association with the RCPAQAP which is assessing the electronic reporting compliance for 7 pathology tests and 6 pathology panels against the SPIA Guidelines. This eCDS Project will extend this initial body of work and assess RCPA SPIA compliance for requesting for the same limited subset of tests and panels.

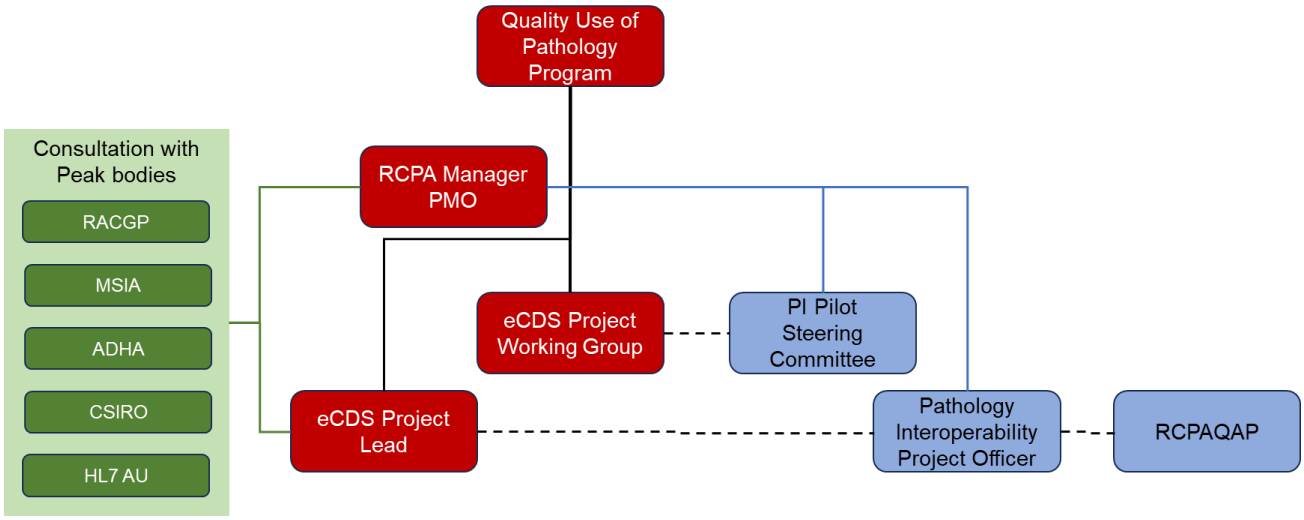
Exclusions from Scope include:

- Informatics work including the creation of content, for example specifications for the exchange of pathology information.
- Development of software and/or approaching the software industry to develop software, noting consultation on current use and future plans for industry is in scope.

No scope was changed during the life of the Project.

5. Governance and Reporting

5.1 Governance Structure



Given the close inter-relationship between the eCDS Project and the Pathology Interoperability Pilot Project, both are represented here.

5.2 eCDS Working Group

The Working Group is responsible for co-ordination and oversight of the Project. The core responsibilities are:

- Provide expert advice on e-requesting, including eCDS, and strategic approach(es) to increase use
- Engage other colleagues to seek feedback on the eCDS Project activities
- Inform decisions regarding the
    - Direction and approach of the Project, and
    - Findings from the Project
- Where authorised, consider issues, risks and dependencies relating to the Project, for example provide advice and input into incorporating SPIA Guidelines in LIS

5.3 Stakeholders

Pathology Service Providers (PSPs) – Several PSPs provided advice and guidance as members of the Working Group, including Working Group Chair. Other means of input included one-to-one meetings with PSPs, responding to a survey on e-requesting and eCDS, as well as providing e-requesting data for SPIA compliance.

GPs – General Practitioners provided input during webinars and in responding to the GP Survey. They also provided membership representation on the Working Group via the RACGP.

Medical Software Vendors – members representing a range of clinical and laboratory software companies utilised in Australia attended the webinar event advertised by the MSIA, and additionally membership on the Working Group.

The Department of Health and Aged Care – The Department funded the eCDS Project via a Grant under the Quality Use of Pathology Program Targeted Project Grants 2022-23. The Department provided input and oversight as a member of the Working Group.

RACGP – worked closely with the Project, including distribution of the GP survey, membership on the Working Group and enabling feedback from expert committees on the e-requesting and eCDS. Furthermore, the RACGP released information to members on the GP webinars and provided input and insights at a meeting with the Project team.

RCPAQAP – members developed automated SPIA compliance testing, undertook the testing and provided reports on the same.

Sullivan Nicolaides Pathology and SA Pathology – provided e-requesting data for SPIA compliance testing.

PHNs – 3 PHNs provided valuable information on the use of e-requesting locally, as well as thoughts for eCDS. There is much work being undertaken locally including work on digital maturity as well as supporting the use of Health Pathways.

Jurisdictions – two Jurisdictions provided valuable feedback on e-requesting initiatives either in place or underway, including immediate access to pathology results for patients.

Medical Software Industry Association (MSIA) – the association for Australian healthcare software industry which develops, supplies and services information management products for healthcare practitioners, service providers and organisations. MSIA assisted by distributing the Software Providers survey and advertising the Webinars for members.

Commonwealth Scientific and Industrial Research Organisation (CSIRO) – an Australian Government corporate entity, the CSIRO is leading the Program Management of the Fast Healthcare Interoperability Resources (FHIR) Sparked initiative aimed, in part, on e-requesting. A consortium has been formed to deliver Sparked, with members including the Australian Government Department of Health and Aged Care, CSIRO, the Australian Digital Health Agency, and HL7 Australia. The RCPA has provided significant input into the Sparked initiative, noting alignment between the two bodies of work.

The Australian Digital Health Agency (ADHA) – The ADHA mission is *to create a collaborative environment to accelerate adoption and use of innovative digital services and technologies*. The Project team gained input and advice from ADHA in relation to e-requesting.

6. Project Activities

6.1 Active versus Passive Decision Support

For the purposes of providing stakeholders with appropriate guidance and in all events where we asked questions, the following definitions were used:

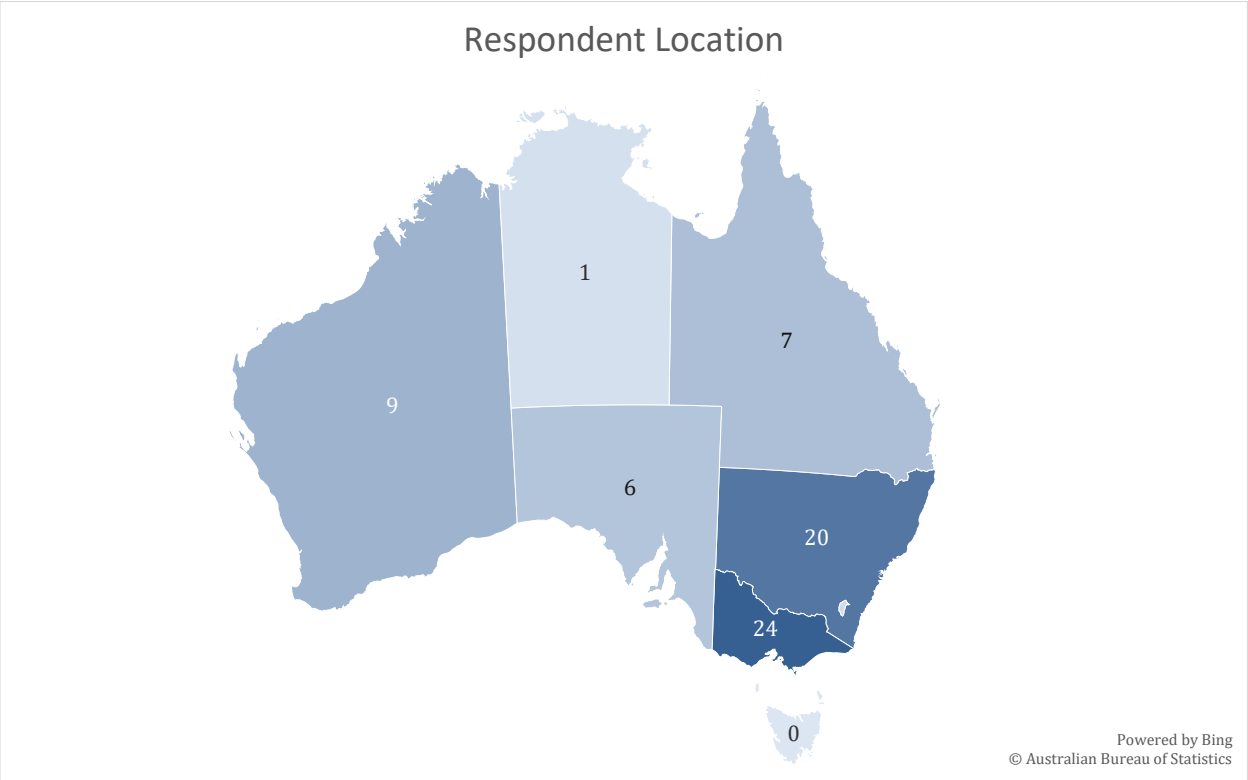
> Active eCDS: software that supports clinical practice, is available within the Practice Management Software, does not decrease clinical efficiency and does not impact clinical autonomy.
>
> Passive eCDS: there are a range of other decision support tools available that sit outside the Practice Management Software, and for the purposes of this Project these are defined as Passive eCDS. These tools include My Health Record, the RCPA Manual, the RACGP Red Book, as well as other sources including published guidelines.

6.2 Project Surveys

6.2.1 GP Survey

The GP Survey covered Practice and GP Information, e-requesting of Pathology, eCDS usage (if available), and use of My Health Record. It was released with the assistance of RACGP via a newsletter and also targeted communications to members of Expert Committees.

69 responses were received from across the country:



Response locations were classified using the Modified Monash Model. 56 respondents were based in metropolitan areas, with a further 4 each from large rural, and regional centres. No responses were received from very remote communities, and 2 from remote communities, with a further response from a small rural town and two from medium rural towns. This appears to be representative, with Department of Health and Aged Care statistics for the Medical Profession as a whole showing 90,422 FTEs working in Metropolitan areas, on a sliding scale to 472 FTE working in very remote areas (Summary Statistics, Medical Profession).

The percentage of respondents across the following age ranges were: 30-39 (20%), 40-49 (26%), 50-59 (23%), and 60-69 (25%). 4 respondents were outside these ranges or preferred not to comment. Whilst difficult to compare directly with the RACGP GP Health of the Nation 2021 Report (RACGP - 2.2 GP workforce), as different age ranges are used, there appears to be a correlation.

The majority (62%) had been practising for 11 years plus, with 29% practising for 4-10 years and only 9% early in their GP career. 35% of respondents were International Medical Graduates, noting this is less than RACGP findings where 52% of GPs attained their basic qualification outside of Australia or NZ (GP Health of the Nation 2021 RACGP - 2.2 GP workforce).

e-requesting of Pathology

In terms of Practice Management Software (PMS), the majority of practices used Best Practice (50 users – 72%), with Medical Director accounting for 13% (or 9 users). Others PMS used included Zedmed (4), Medtech Global (2), and Genie with 1 user. No respondents used Communicare or Stat Health and 3 respondents used "Other" undefined software.

58% of respondents said that their PMS allowed e-requests to be sent to their Pathology Provider, and of those only a third always used e-requesting. Reasons for the two-thirds (28 respondents) who did not always use e-requesting included:

- software not working correctly which also lead to one GP only using it with telehealth
- linked to the above comment, some reported that the software was not set up, was difficult to set up or was set up incorrectly
- the ease of printing a request directly from the PMS
- the patient requesting a paper request
- patient autonomy, and patient choice with e-requests is not available
- financial information for overseas visitors or self-insured is easier on paper requests
- some e-requests are delayed i.e. the patient does not get the request immediately (up to 24 hours delay

eCDS for Pathology Requesting

Not all respondents answered in relation to Active eCDS, with 35 responses received. Of the 35 who responded 8 stated that they have Active eCDS available to them. For those 8, the mix of respondents who either used eCDS or not were equally divided.

For the 4 users who used Active eCDS the following is a summary of the responses to its use and benefits:

What aspects worked well	Benefits	Barriers
Improved efficiency	Saves time, improves efficiency	IT Skills
Information is good, once you get there	Mobile practice – essential to access information quickly	The time it takes to use
Suggested grouping of tests, to investigate certain clinical presentations	Suggests a full range of tests in a given clinical situation(s)	Lack of awareness that some tests are do not attract MBS rebate
Broad guidelines visible	Aid for difficult conditions and information confirms clinical impressions	Requests often beyond GP scope of practice.

Of the four who did not use Active eCDS, all four noted that "Existing knowledge of what to order based on experience" was the main reason for not using Active eCDS. Views varied on the next reason for non-use which included Active eCDS is not always accurate/ suggested tests are not correct and there are a high volume of pop-ups and alerts.

In relation to Passive Decision Support, we received 55 responses. Of those 8 or 15% of respondents noted they never use decision support in any form. The RCPA Manual was the leading source of information on pathology requesting, with 30 (55%) respondents using it. The other leading sources of information are RACGP Red Book (20 users, 36%), Health Pathways (18 users, 33%), My Health Record (16 Users, 29%), Therapeutic Guidelines (17 users, 31%) and Pathology Service Providers Manuals/ Catalogues (12 users, 22%).

There was minimal use (between 1 - 4 respondents) for UpToDate, Google, Dr Control Panel, Pathology Tests Explained, Australian Journal GPs, and Choosing Wisely.

My Health Record

There were 55 respondents who provided information on My Health Record (MHR). Of those 43 (78%) requested that pathology reports be uploaded to MHR by default.

The reasons for use included:

- the user was mobile and used it frequently
- it improves communication between community and hospital-based care
- access to hospital information (discharge summaries)
- information on new patients
- critical to use as patients visit many service providers for different clinical care
- patients often do not know or forget the names of the tests
- sharing of pathology information reduces duplication and increases efficiency
- can be the primary source of information, especially after hours

The availability of information appears to be an issue, with commentary including “I use it when the information is there”, “information is uploaded inconsistently”, etc.

Other reasons for non-use of MHR included:

- reports are requested to be uploaded, but they are not there: not all PSP upload to MHR
- lack of atomic data in MHR
- functionality of MHR, described as clunky, difficult to navigate. One provider noted that it was difficult to use in the early days, and the experience has put them off returning
- search functionality was seen as problematic i.e. it is hard and time consuming to find patient information
- lack of integration into the PMS
- pathology reports must be opened one at a time
- MHR is not available for all patients.

Of the 55 respondents, 7 (13%) did not look at information on MHR at all. The following table provides information on what GPs do look at on MHR:

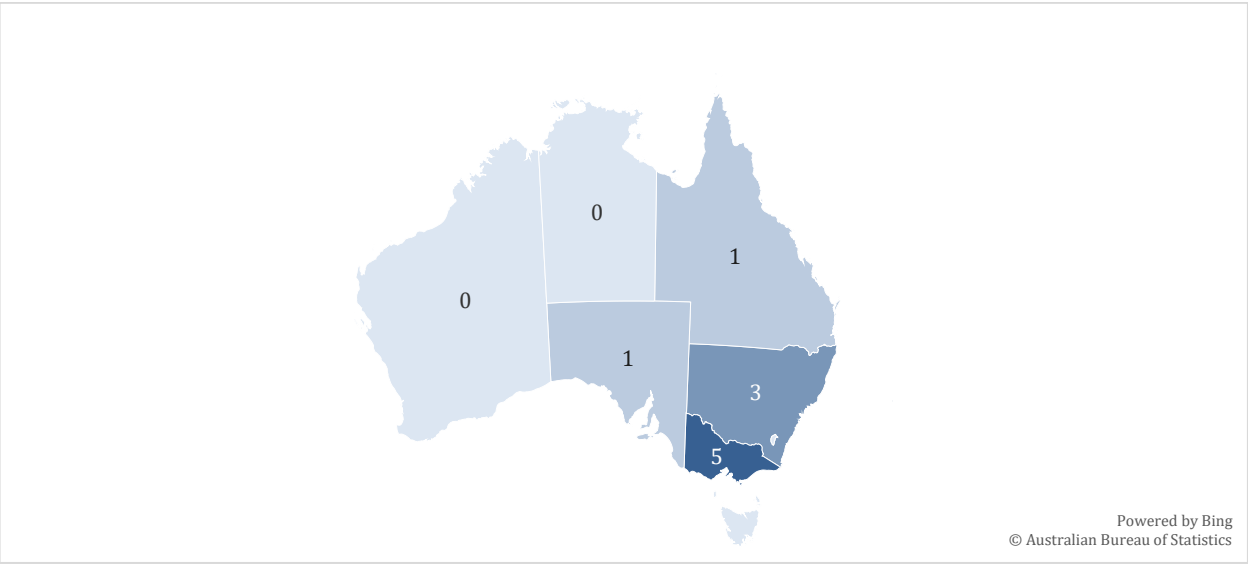
Information	Number of GPs	% of Respondents
Pathology results	31	56%
Discharge Summaries	29	53%
Diagnostic Imaging results	25	45%
Medications	21	38%
Medicare History	14	25%

Health Summaries	9	16%
Immunisation records	5	9%
Specialist letters	2	4%
New Patients	2	4%
Allergies	1	2%

6.2.2 Pathology Service Providers Survey

The Survey covered PSP information (location, size, etc), e-requesting of Pathology, barriers to e-requesting and information on requests, and use of MHR. It was released to PSPs via a targeted email.

10 responses were received from across the country. This represented just under a third of Pathology Service Providers within Australia. The following information and analysis should be considered with that in mind, i.e. that is whilst it provides very useful insights, it may not fully reflect the position of all PSPs within Australia. The geographic spread was as follows, noting that some respondents were multi-state organisations:



6 responses came from public providers and 4 from private, and similarly 6 were part of a network of laboratories and 4 were a single, standalone laboratory.

e-requesting

90% of providers could receive electronic requests and of those the percentage of e-requests received were:

Percentage volume range	% of e-requests
1 - 25%	38%
26 – 50%	13%
51 – 75%	25%
76 – 100%	13%

Unknown	13%

When e-requests are received there is an e-acknowledgement by the PSP on 50% of occasions.

National standard for e-requesting, and barriers to e-requesting today

Just under two-thirds (63%) could accept SNOMED CT-AU codes. In terms of lead time to implement a national standard for e-requests into the PSPs LIS the results were very positive, with 38% able to achieve implementation within a year, and 38% within 1-3 years. Majority of the respondents suggested this could be achieved within a 5-year window. Five reported that either no changes or no major changes to their LIS would be required.

The above is particularly useful when considering the major barrier to digital information exchange identified within the survey is legacy systems/ non-compliant systems (63%) which was followed by complexity of environment/ multiple LIS (50%). Limited skills resources (38%) and fiscal constraints (38%) were identified as the next largest barriers by respondents.

Clinical information on requests today

In terms of information available on the request, respondents unanimously agreed that the position identified in 2015, that circa 50% of all requests received did not include clinical information or reason for request, remains true today.

50% of respondents noted they contacted the requestor for further information or to approve different/ further tests on 1 - 10% of occasions, and the remaining 50% on 11 – 25% of occasions.

The results from what clinical information would be useful within the request provided, noting respondents could provide more than one answer, identified relevant family/ genetic history and current symptoms as the most important at 75%. The full list is:

Information	%
Current Symptoms	75%
Relevant family/ genetic history	75%
Management of a known condition	63%
Current Medications (and Medications List)	63%
Provisional, different, or suspected diagnosis	38%
Past history, especially cancer	13%
Clinical context	13%
Patient history	13%

As to the importance of clinical details accompanying the request, the respondents noted that interpreting the results in the clinical context was the most important reason, with it all agreeing it was essential or somewhat important. The full responses, of which there were 8, are below:

Reasons why clinical information accompanying the request is important	Essential	Somewhat important	Neutral	Somewhat unimportant	Not important
Interpreting results in the clinical context	88%	13%	0%	0%	0%

Identifying appropriate tests to perform	63%	25%	13%	0%	0%
Reimbursement requirements	50%	25%	0%	0%	25%

eCDS

88% of respondents believed that eCDS would provide a more effective pathology service, with the remainder unsure. The main reasons for supporting eCDS were to improve efficiency, reduce unnecessary tests and reduce duplication. Specific comments made in support of eCDS included:

- “improve test utilisation and interpretation”
- “avoidance of inappropriate test ordering”
- “reducing unnecessary tests”
- “reduce duplication and unnecessary testing, divert resources to more complex testing”
- “should be a reduction in unnecessary variation in requesting and, hopefully, more guideline compliant testing. Hopefully fewer unnecessary tests and more useful tests”
- “Better test selection in testing cascades, better interpretation of results and more tailored commenting, quality check to detect wrong blood in tube/analytical errors”.

My Health Record

In relation to My Health Record, all noted that they could upload to MHR. However, only half of PSPs rendered the report in the same manner as is provided to the GP. MHR was rarely used to look at previous lab results or clinical history, with 12% who do and the vast majority (88%) who do not.

6.3 Consultation

In terms of consultation, including the surveys, there have been 101 different sources of input (working group meetings, survey responses, webinars, etc), provided by 142 individual representatives, and an estimated 166 hours of time provided by the individuals. The amount of input from colleagues across the health sector was valued and welcome.

6.3.1 GP Webinar

In addition to the GP survey, the Project ran two webinars, with lunchtime and early evening sessions held on 29 November 2023. The invitation was released to GPs with the assistance and support of the RACGP. 8 GPs attended the lunchtime session, and 8 also attended the evening session.

The webinars’ primary purpose was to engage directly with GPs to obtain more qualitative information, in other words to find out why GPs did or did not use e-requesting and MHR.

e-requesting

Some GPs find e-requesting easy, for example where there is only a single PSP locally, and they provide e-requesting.

Similarly, a GP from a large metropolitan practice noted that e-requesting is used extensively in their practice, works seamlessly and their experience was that those who took time to implement and learn the product reaped the benefits. This was also supported by a GP from South Brisbane, who

noted e-requesting has been used extensively locally and is generally well accepted. Both of these GPs are experienced and have been practicing for many years.

The main use case for e-requesting for some GPs was seen as telehealth. This was also supported when the Project Team met with a GP who runs a national telehealth service. Currently workarounds are necessary for providers of telehealth (and other remote services) to provide patients with a pathology request. These workarounds include scanning of requests and emailing these to patients, to address the distance barrier.

A further benefit that could be built into an e-requesting solution is the ability to provide immediate feedback to the GP, which is currently not possible given the workflow; if an information exchange was possible between the GP and PSP (or collection centre) it could benefit all, including reducing the need for recollection.

Many GPs noted that some patients will always prefer paper so that option needs to be available to consumers who want to “put the request on the fridge as a reminder”. There are also technical reasons for not moving to e-requesting, for example non-compliant version of the Practice Management Software. One GP advised that their software had no capability to provide e-requests, and the closest they can currently achieve is to complete a PDF form and send that to the patient.

Some of the issues with e-requesting solutions include lists that are provided by some PSP for e-requesting are too long, for example 23 options for a test; the search function in an e-requesting solution needs to function well. Similarly, some software pre-populates the test and cannot be over-written, which leads to manual entry, and then the barcode cannot be produced, meaning digital information exchange cannot function as intended throughout the process.

As noted in the GP Survey, some GPs experienced a lag of up to 24 hours prior to the e-request being received; this leads to patient uncertainty and even confusion in some cases. Additionally, some practices currently cannot switch off paper printing when e-requests are produced, which was noted as a waste of paper; for many however, paper requests are the only way to currently provide choice of PSP.

GPs need to be able to understand if an item attracts the MBS rebate; e-requesting software needs to consider this as a requirement. Currently staff within a practice often are required to undertake additional work to provide advice on whether a test is covered under MBS for patients or not.

<u>eCDS</u>

One GP who has been practising for many years has been using Guidance Based Reporting (GBR) for the past 18 months. GBR is an eCDS solution co-developed by Sonic HealthCare and Best Practice (BP). The GP did not always use GBR, but certainly did in more complex cases, and has the additional advantages of populating the PMS and providing advice on MBS rebated items.

Not all BP users were aware of GBR, including one who reviewed it during the webinar! Of those who were aware, several stated that they will use it at some point.

Use of eCDS may be influenced by time in practice i.e. an eCDS providing advice on more appropriate tests. Continuing Medical Education (CME) was raised, and GPs generally focus on areas of particular interest; pathology requesting is not currently considered under CME, most likely for that reason, i.e. pathology covers a broad range of specialties and sub-specialties.

Any eCDS must not be intrusive; some GPs provided feedback that pop-ups and alerts are not always useful in the clinical setting.

Discussion was held about what eCDS is trying to achieve. Is it to adhere to guidelines (more appropriate testing), to meet Medicare criteria, and/ or timing (for following up on orders, etc)? Clinical autonomy was raised and there were concerns that if requesting practices were monitored that it would not generally be acceptable.

The top 6 sources of decision support (RCPA Manual, RACGP Red Book, Health Pathways, My Health Record, Therapeutic Guidelines and PSP Manuals) as evidenced by the GP Survey, were generally agreed to.

GPs will use different tools dependent upon the condition or symptoms; so, one of the issues is that not all resources are available in one place. And, a secondary issue, is that maintaining all the resources is expensive and GPs need to be confident that the information is current (which is a factor for both passive and active decision support).

Feedback was provided on developing and implementing an eCDS. This included concerns that if an eCDS tries to cover everything, it will become difficult to use and will be 'clunky'. There were also concerns that different PMS providers would implement eCDS in different ways, leading to non-standard user experience and potential non-use. As one GP stated, poor development and implementation "may lead to harm, to be honest, if it's done in the wrong way".

My Health Record

Uses of MHR vary, for example a GP who also worked in Palliative care, noted that they used MHR far more in that field than in 'regular practice'. This is because public facilities upload pathology to MHR by default, meaning that GPs are certain the information will be there. Another GP echoed this, with some of his patients traveling 10 kilometres to a public facility, therein ensuring it would be available in MHR.

This is one of the main issues that was reported with MHR, that GPs simply don't know if or when information will be there; additionally, there is consumer expectation that everything is on MHR and therefore the GP should be able to access it.

GPs noted other concerns, including the poor search functionality (esp. in a time-pressured consultation window), it is difficult to navigate, pathology is individually reported meaning each result needs to be opened separately rather than viewing results within a single report, and that data is not atomic therefore cannot be easily put into a longitudinal view. (Note: Whilst Pathology Overview is available, as a single view of Pathology Reports, knowledge of it is not widespread; and as noted later, the functionality could be improved).

Information is available immediately now in some cases outside of MHR, and that was noted as a cause of concern for some patients "*may well actually be quite a significant problem simply because it will provoke a lot of anxiety amongst the patients in whom you absolutely try not to provoke anxiety*". Patients are reviewing their results on MHR and elsewhere, often in advance of the GP.

6.3.2 Individual GP Consult

Separately to the GP Webinar, the Project Team met with a GP who runs a national telehealth service, with other GPs and health professionals providing advice on a particular area of health. Whilst most of what was discussed was covered at the webinar, some highlights for a national telehealth service bear consideration:

> If telehealth services are provided at the clinician's home address, Medicare lists that address, which is then provided to the patient on requests. If, as a workaround, the Head

Office address is used, the reports go to that address, not the requestor's address. This is problematic, as firstly the patient knows the GPs home address. Secondly if a Head Office address is the default, the report does not go directly to the GP ordering the test, and additional time and effort is then required to direct the report to the requesting GP.

For national telehealth providers the reporting of Diagnostic Imaging (DI) and Pathology is an issue; to get secure e-requests, they need to subscribe to multiple services, so they simply use the major services. The alternative is to receive paper reports, which are often sent back to the Head Office.

6.3.3 MSIA Webinar

The Project held two webinar sessions for the medical software industry. The invitations to the webinar were distributed with the assistance of the Medical Software Industry Association (MSIA), who released the invitation through their newsletter and sent a calendar invite to pathology members. 16 members attended the webinars sessions.

E-requesting

One provider noted that some of the messages provided by some PMS are in different formats, due to the way in which the differing Pathology Service Provider needs to receive them. Notwithstanding that, there is also a need to provide the same workflow for GPs as they also use the PMS, irrespective of where the request is being sent.

Another provider gave feedback that they use HL7 v2.x and they cover both EMR (Acute setting) and LIS, and they send messages to each other. They also use the SPIA pathology terminology reference sets, but noted that they needed to extend them due to specialty tests requested in the hospital setting.

Another provider noted that neither of their EMR systems send HL7 messages, so there is a degree of work required to input this information into the LIS.

There was general support to move to standards to make implementation and development as seamless as possible.

eCDS

One PMS provider noted that they have multiple requests to integrate CDS functionality into their product(s). They have a unit that reviews the requests to ensure it is in the interests of GPs, patients and the medical software industry, whilst not disrupting the GP workflow. This was supported by another provider, who quoted an example for radiology decision support (in another country) where the advice was obvious, and therefore of no value to the GP.

This was supported, with a participant noting that the clinical decision support tone has to be suitably informative rather than directive.

The provider who had a dedicated team to assess software decision support requests, advised they had undertaken some analysis and noted that on average doctors are three times more likely to do what is being suggested by software when decision support is available as opposed to when it is not; there are control groups in place to support this.

Another provider noted they are investigating a solution to provide eCDS. They are keen to understand the value proposition in Australia (and elsewhere) of developing eCDS, including the maintenance of a knowledgebase.

6.3.4 Individual Medical Software Company meetings

Several entities had individual discussions with the Project Team on their development, proposed development, or eCDS software currently in use. Most of these discussions were in confidence, as they were products under development. It did become clear during some of those discussions that the value proposition for each software vendor developing, maintaining, and managing content to provide decision support was resource intensive and may not be the best or most efficient way forward.

Of note, Guidance Based Requesting, which has been co-developed by Sonic Healthcare and Best Practice, was discussed and demonstrated to the Project Team as a living example of practical/integrated eCDS. GBR was trialled extensively and is now available for some Best Practice users to access, and some GPs noted its use during our discussions. GBR is a knowledgebase, that has been developed using an evidence-based approach, and peer reviewed by Pathologists. GBR has been developed based on the RCPA findings from the 2015 PathSupport Project:

> that clinical decision support is integrated into the workflow, is based on peer-reviewed evidence, clinical autonomy is maintained, and the requestor can choose to accept or reject any/all suggestions either in part or in full.

6.3.5 PHN meetings

The Project Team undertook an analysis of each of the 31 PHN websites; based on analysis of e-requesting information available on their websites, invitations were sent to 6 PHNs, of whom 3 met with the Project Team.

The main work on e-requesting that the PHNs have most recently undertaken is that driven through the ADHA. However, this work was not funded on an ongoing basis, and therefore is supported on a ‘best efforts' basis.

e-requesting functionality was not available for PSPs in all cases i.e. some PSPs cannot accept e-requests. There are several IT steps that must be completed in a medical centre’s software for each PSP used by the practice and often this involves enlistment of IT service providers both at the medical centre and pathology provider end. It is not a simple “switch” in the software. This is currently a disincentive to use e-requesting.

All 3 PHNs indicated they would assist practices to set up e-requesting if asked. Getting time in clinicians diaries for training for e-requesting was noted as an issue by one PHN. Digital standards for e-requesting would assist with standardised implementation for the PMS providers and therefore for the GPs.

All 3 PHNs have undertaken work with Health Pathways, which also featured as one of the top 6 passive decision support resources in the GP survey. In 2 PHNs the Health Pathways software is integrated into Best Practice (BP) and Medical Director (MD) and provides an e-referral directly to the local hospital, including pre-agreed local service requirements for requests.

Interestingly whilst e-requests are available in 96% of practices that use MD or BP across one PHN, only 60% use it. The key insight provided by that PHN is that having the software available is not enough; there needs to be targeted change management. Having the eCDS embedded within the software, whilst seen as essential, was simply not enough to ensure use. Another factor they found

was that younger GPs are more inclined to use e-tools, especially if they start to use e-tools earlier in their practice.

Two of the three PHNs have undertaken a Digital Maturity Assessment across their areas with participation rates from practices at a generally high level. Anecdotally there are many PHNs that have either undertaken or are in the process of undertaking Digital Maturity Assessments. Firstly, this provides a rich amount of information that PHNs are using to target digital campaigns and support their digital health strategies. Secondly, PHNs can provide valuable insights and should be engaged on any campaign to implement e-requesting.

One other source of information that PHNs use is a monthly report from ADHA on the use of MHR by GP practice. One PHN was in the process of completing a bi-annual report on MHR uploads, and the general themes include:

- Larger, multi-GP Practices are more likely to use national tools, given they have more time, capability, and resources
- Digital literacy
- Resource availability impacts on usage of MHR
- The overall use of MHR was increasing.

6.3.6 Jurisdictions

The Project Team met with two Jurisdictions, one who just implemented the EPIC Beaker LIS solution and another who are developing their technologies on a FHIR-based approach.

The EPIC Beaker solution implemented does allow for immediate reporting of most results to patients, which has been well received by patients under an opt out model. Decision support within the system is available but has not been used and would need further investigation prior to use; the immediate focus has been on refining functionality available post implementation; SNOMED CT and LOINC are available within the LIS.

The jurisdiction that is mapping terminology has SNOMED CT and LOINC in the LIS too, but they have not been used to this point, as modelling against local codes needs to occur and this particular Jurisdiction is seeking assistance to undertake this body of work. An instance of a local Ontoserver is being used; Ontoserver is provided free for use within Australia by CSIRO, and is used to model, or define and link, terminology. The jurisdiction has commenced terminology modelling and a working group has been formed to specifically look at the work of an orders catalogue. Lack of resources, especially those with FHIR expertise, is an important issue facing all Jurisdictions.

The Jurisdiction is taking a FHIR-based approach, building a FHIR platform to support pathology requesting, with an eCDS Orders module on top of the pathology orders catalogue. The benefits of taking this approach include being able to track all stages from request to report as well as workload planning i.e. sighting what is in the pathology orders pipeline. The Manager of ICT Services noted that they are looking for assistance in developing terminology to support e-requests from external parties; he also noted that people with FHIR skills and experience are limited and currently difficult to find in Australia.

6.4 Pathology Workflows

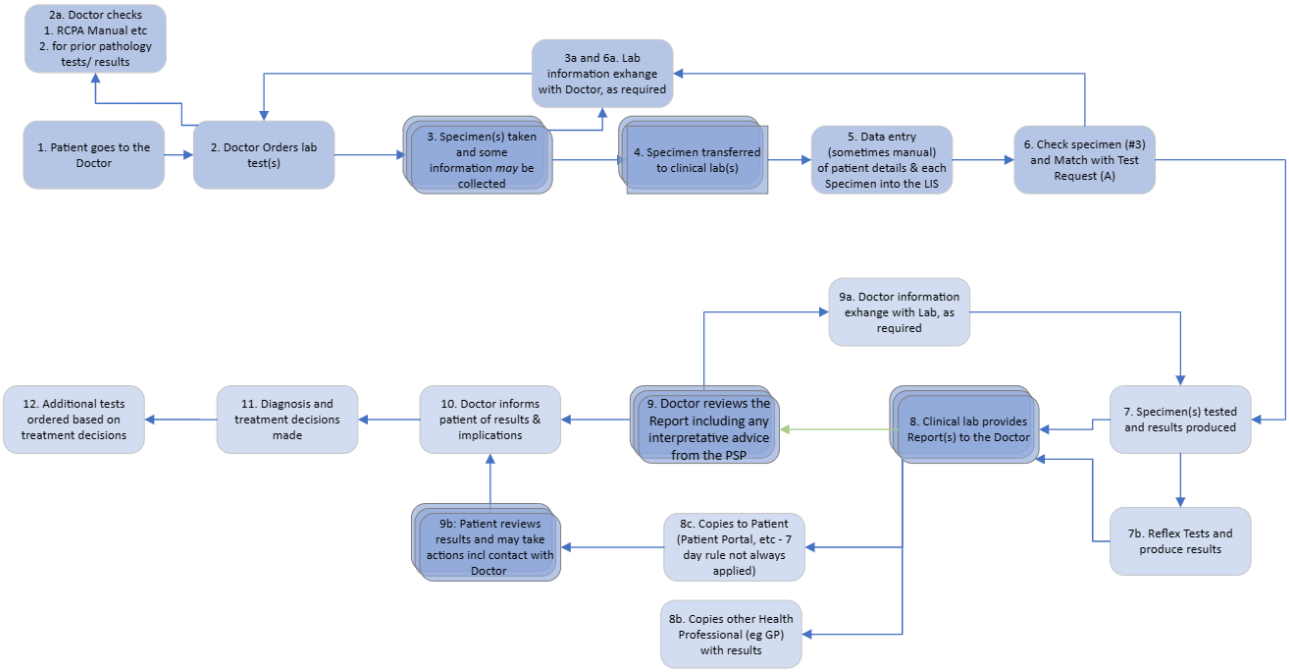
The Project Team developed end-to-end Pathology Workflows, that cover both digital and paper-based exchange of information and have been reviewed by the eCDS Working Group. These

workflows represent the current state, unless otherwise stated; there are processes today that are paper based, which may in future be digital.

The Workflows, one for Request and Receipt, and another for Test and Report, are attached at Appendix A.

At first glance, the workflow appears a simple process, namely a GP or other requestor provides a request for some tests to be undertaken, then specimens are collected, tests performed, and a report provided. In reality, there are many quality and safety steps, feedback and information loops, third-party contact points (for example, others involved in patient care), and other factors that add layers of complexity.

A simple rendition of the Workflow is below, however when reading the additional comments, the detailed Workflows at Appendix A should be referred to.



The detailed workflows describe where:

- there is a paper and/ or electronic information exchange
- the relevant SPIA Guidelines are within the workflow
- the informatics including exchange specifications (HL7 V2.x) and terminology (SNOMED CT and LOINC) fit within the workflow, and
- there is a referral from one laboratory to another for specialised testing.

It became clear during consultations on the workflows, that the information flow and the specimen flow can actually be two separate flows. Additionally, information can be captured at different points within the workflow, for example at the collection centre or at the laboratory. It is reasonably common to obtain information at the point of collection, including permission to direct bill to Medicare, Medicare payment type, and administrative information.

It is less common for clinical information to be viewed at the point of collection, although collection of clinical information at the point of collection can be very important, for example for

immunohaematology requests relating to transfusion of blood products. Similarly, there is a need to understand when a patient presents for a thyroid test, whether they are pregnant and, if so, at what stage of pregnancy.

Both requesting of clinical information and access to it for pathologists, scientists, and those working in collection centres are seen as areas of ambiguity that should be clarified. Examples include whether the GP should be contacted to add the pregnancy status or if pathologists in the lab setting should view MHR or other sources of clinical information or not.

Notes and commentary associated with steps are:

A. Doctor orders lab tests:

There are occasions where the patient may present to a GP having reviewed information elsewhere and request particular tests (or other courses of action).

There was strong feedback that whilst upload to MHR was the default, there is a need to clearly articulate within the workflow that this is the patient's choice, with the option to opt-out available to all.

The patient may decide not to progress with the test.

There is a need to consider 'business rules' that address certain scenarios when requesting, for example adding additional tests post the e-request being submitted. Some Pathology Service Providers (PSP) triage their requests and fulfill the last request received as a business rule. How this is managed within any digital exchange of information needs to be considered.

B. Paper and e-requests are given to the patient:

There will mainly be separate test requests for different specimen types, for example blood and urine. Additionally, in the case of multiple paper requests, they can be taken to different providers which has an impact on information in MHR i.e. the Requestor has to look for multiple providers.

There may be clinical reasons for the request not being presented immediately by the patient, e.g. "if you feel no better by next week, then please have the following test", or to complete a test within a defined period of a medication dose change. This needs to be considered by any digital e-requesting solution, i.e. that requests can be held for a period of time before being submitted for collection or not be submitted at all. There are also the Medicare Rule 3 exemptions, where once the maximum number of tests have been reached or six months have passed since the initial request, a new request form for repeat testing will be required.

C. Specimen(s) taken, and some information *may* be collected

As noted above, some additional information, both clinical and administrative can be taken at the point of specimen collection.

D. Check specimen (at lab) and match with test request

Often there is information missing from the request, which means contact between the PSP and the requestor is sometimes necessary. Notifications can also be provided when a patient fails to attend for a follow up test. e-requests should allow for asynchronous, bi-directional exchange of information at any stage of the request (and report) process.

E. Specimens transferred to a specialist referral laboratory

It is worth noting that most tests are performed within the initial laboratory that receives the request; onward referrals are for highly specialised tests which are often performed by specialist referral laboratories.

F. Reports sent to GPs and other requestors

Notifications need to be considered in any e-requesting solution. GPs and other requestors do not generally want to see every report as it arrives. However, there need to be conditions agreed for immediate notifications provided to the requestor, for example in the case of abnormal results or urgent request results. Potentially the use of requesting categories could assist, for example routine monitoring, emergency/ urgent request, etc.

G. Reports from Specialist Referral Labs

This comes about when a requestor sends a request to their usual pathology provider who is unable to perform some or all of the tests and then refers them on to a specialist laboratory to be performed. Currently there is no clear pathway for specialist referral laboratories to send back reports consistently. This can result in each lab (specialist and usual) assuming the other has sent the report to the requestor.

As a result, the result is either not received by the requestor, or, if it is sent by each lab, the requestor receives it twice. For example, the report may be sent directly to the GP or it may be sent back to the originating laboratory for inclusion in their report; sometimes the report is provided in PDF containing significant data, which then needs to be re-entered in the originating laboratory's system prior to reporting. It is unclear whether the reports are sent to MHR. Any e-Reporting solution needs to consider a clear process for reporting from multiple sources, and inclusion within MHR.

6.5 SPIA Analysis

The Project worked with one public and one private Pathology Service Providers to undertake analysis of RCPA SPIA Compliance (use of SNOMED CT) for requesting.

Four request sets (from different requesting software) were analysed. One set only contained SNOMED CT, and that was not completely mapped.

Based on the analysis undertaken,

- there is currently little adoption of SNOMED CT for e-requesting of pathology.
- Just under two-thirds of laboratory information systems are able to accept SNOMED CT

Note that whilst there are relatively few findings for SNOMED use, its use bears a direct relationship with e-requesting and eCDS. To exchange information unambiguously requires agreed terminology to be used in the information exchange.

The current initiatives being introduced under the Sparked FHIR Accelerator should see a marked increase in the use of SNOMED CT with the adoption of the RCPA SPIA Requesting Pathology Reference Set V4.2 (RCPA Resources).

7. Project Outcomes

7.1 Findings from Consultation

The findings from the surveys and consultations have been included below, sectioned into e-request, eCDS and MHR.

7.1.1 e-request findings

Paper requests will remain for many reasons, including patient preference.

e-requesting is used by many GPs, where it is available, and would be adopted by more with the use of telehealth. e-requesting solutions can further support GPs by providing more appropriate test list search functionality (including enhancements such as clinical decision support at the point of request generation), providing an option to switch off paper requests, and providing advice on MBS rebated items.

The availability of e-requesting does not lead to its use by some GPs for many reasons. Findings suggest that there is a body of work to be done technically, and when complete, there will be a need to undertake change management activities.

A benefit that could be built into an e-requesting solution is the ability for the PSP to provide immediate feedback to, or request clarification from, the GP, which is currently not possible given the workflow; if a digital information exchange was possible between the GP and PSP (or collection centre) it could benefit all, including reducing the need for recollection, and improvements in the management, delivery and/or consumption of Medicare pathology services. This would require a move away from HL7 batch processing to modern information exchange standards.

There is a requirement for e-requesting software to include information on MBS requirements, as GPs (and others) need to be able to access that information quickly within the consultation, to inform patients.

If telehealth services are provided at the clinician’s home address, the pathology request lists that address. If, as a workaround, a Head office is used, the reports go to the Head Office, not the requestor. Consideration needs to be given for use of and access to personal information for GPs and other clinicians working from home, for example in the case of telehealth services.

For national telehealth providers, ordering and reporting of DI and Pathology is currently an issue. To receive secure e-requests, they need to subscribe to multiple services, so they simply use the larger providers.

Feedback from PHN on e-requesting is it is used intermittently, even when it is readily available. There are several IT steps that must be completed in a medical centre’s software for each PSP used by the practice and often this involves enlistment of IT service providers both at the medical centre and pathology provider end. It is not a simple “switch” in the software. Whilst this is currently a disincentive to use e-requesting, National digital standards for e-requesting would assist in resolving this issue.

PHNs offer some digital support to GPs and should be considered as a local support resource in any campaign to broaden the use of e-requesting. PHNs have a detailed understanding of their stakeholders and local issues and are well placed to provide valuable insights on the implementation of e-requesting on the GP desktop.

Any campaign to broaden the use of e-requesting should be funded for an ongoing period, not for a single year, to allow PHNs and others to support requestors on a more stable and productive basis.

Whilst the majority of PSPs can receive e-requests, an e-receipt is not always provided. E-requests would benefit from e-acknowledgement, in accordance with SPIA Guidelines (12.05 and 12.02b) with only half of PSP Survey respondents doing this currently.

Feedback from PSPs suggests that if a national standard for e-requests was introduced and properly resourced (fiscally and with skilled resources), it could be implemented within a 5-year timeframe for the majority of PSPs, and 76% could implement in 3 years or less.

Anecdotally, circa 50% of pathology requests contain clinical information or the reason for the request. However, follow up by laboratories to clarify or gather further information occurs significantly less than that, possibly due to PSPs experience and the time required for the pathologist to do so.

The most important information to include on requests is current symptoms, relevant family/ genetic history, management of a known condition, and medication information.

The primary reason, and one that's seen as essential by most, for providing clinical information is to enable PSPs to interpret results in the appropriate clinical context.

Jurisdictions are at differing stages of implementation for e-requesting, however feedback from the two consulted with (and the Project suspects others) significant advances are being made.

Jurisdictions (and others) would benefit from assistance to map terminology (SNOMED CT, LOINC) to local order catalogues.

Lack of FHIR expertise is a barrier to entry for the development of FHIR-based services for Jurisdictions (and likely others).

The landscape for e-requesting is changing rapidly, including the Sparked Program initiative managed by CSIRO to progress standards for e-requesting, along with industry providing e-requesting capabilities. For example, Sonic Healthcare and Magentus worked together to develop an e-requesting solution that enables referring specialists to provide laboratories with all relevant patient information electronically and, in the future, for patients to receive a digital version of their pathology request. Furthermore, the requestor can track the request, to see if it has been fulfilled. Sonic Healthcare Global CIO stated (ref: Genie Solutions partners with Sonic Healthcare to release eRequest solution | Magentus)

"As a digital-first workflow for diagnostic requests, e-requests has been helping clinicians provide digital pathology requests to patients, enabling tracking from the moment of creation to the delivery of results.

"The status of tests is also visible from the referring practice, which helps build more collaborative relationships by improving transparency between practices and laboratories.

"This is the perfect example of the kind of solution benefiting specialists and patients alike that can be developed in this interoperability space."

7.1.2 eCDS findings

Whilst there was insufficient information (responses) to inform a position on eCDS use, there was a suggestion that it would support some GPs some of the time, depending on many factors including

familiarity with the condition being managed. Future investigations should focus on those who would use eCDS and resource change management strategies to encourage use.

The above finding from the survey was supported in the GP webinars; that is, whilst eCDS is generally supported, it will not be universally used, and when it is used, it will be more likely be for complex cases. There remain levels of concern about how Medical Software Providers may implement eCDS (with respect to associated quality and compliance issues), whether it will be complex and what the 'drivers' will be for the provision of eCDS.

GPs need to be assured that evidence is up to date for both Active and Passive eCDS.

The reasons for implementing eCDS need to be clearly stated; clinical autonomy is mandatory for any implementation of eCDS.

GPs need to be confident that the development and implementation of eCDS is safe, current, evidence-based, clinically lead and trusted; concerns that it may do harm must be addressed.

GPs use a wide range of passive decision support tools (which are effectively resources), and the RCPA Manual is one of these that is well recognised as a source of truth. eCDS knowledgebases should consider a wide range of information sources, which are evidence-based and relate specifically to General Practice (not imposing hospital or specialty based CDS which don't translate to primary care)

In terms of eCDS, PHNs have invested heavily in the implementation of Health Pathways, working with local hospitals and health services, and two of the PHNs consulted noted the integration into the PMS was useful in supporting local referrals.

88% of PSP survey respondents believed that eCDS would provide a more effective pathology service, with the remainder unsure. The main reasons for supporting eCDS were to improve efficiency, reduce unnecessary tests, identify under-utilisation (i.e. useful tests not ordered,) and reduce duplication.

As with e-requesting, there are initiatives underway to advance eCDS. A prime example of this is Guidance Based Requesting, co-developed between Sonic Healthcare and Best Practice Software. This eCDS is now available for some Best Practice users who refer to Sonic, and Sonic note the key features include (ref: Guidance Based Requesting | Sullivan Nicolaides Pathology (snp.com.au))

- Improve patient communication with customised resources and pre-test information.
- Expand requestor scope of pathology investigations based on current and Medicare-compliant guidelines.
- Refresh requestor clinical knowledge with access to up-to-date and reputable sources.

7.1.3 MHR Findings

The majority of GPs do use MHR. Pathology results are the main data reviewed by GPs on MHR, although there are close contenders for views, including Discharge Summaries, DI Reports, and Medications. The volume of information on MHR is increasing; for example a 40% increase in the volume of pathology reports uploaded in the last year to December 2023 (ref Australian Digital Health Agency *Statistics (digitalhealth.gov.au)*.

MHR would be used more readily if GPs were assured information was consistently available; if it was better integrated into the PMS; if it was easier to search and navigate; and whilst there is a single view for a pathology report, named "Pathology Overview", the functionality could be improved upon for example navigation. Additionally, atomic data being available would allow for longitudinal

analysis, the ability to download from MHR into the investigations section of the PMS directly (currently this goes to the Correspondence section for some), and that reports be presented in a consistent format.

In relation to My Health Record, all PSP survey respondents noted that they could upload to MHR. However, only half rendered the report in the same manner as is provided to the GP. MHR was rarely used to look at previous laboratory results or clinical history, with 13% who do and the vast majority (88%) who do not.

7.2 Recommendations

In setting the context for these recommendations, it is important to consider the future of any e-requesting and eCDS in the context of modern, contemporary digital health strategies, including alignment to the Australian Government Digital Health Blueprint and Action Plan 2023-2033.The Blueprint identifies four outcomes:

1. Australians have choice in how they manage their health and wellbeing, and can navigate the health system knowing their story follows them.
2. Australia's health workforce is digitally empowered to provide connected care with confidence, whenever or wherever it is needed.
3. Data and information are shared and reused securely to deliver a sustainable learning health system.
4. Modern digital foundations underpin and strengthen a collaborative, standards-based health system that is safe and secure.

This Report's recommendations align with and contribute to these outcomes. The Action Plan outlines the work that is now in place for e-requesting, and this Report, including the workflows, can provide valuable input into the CSIRO managed Sparked program.

Similarly, the Action Plan identifies that "This work will establish information and data standards for pathology and diagnostic imaging, enabling electronic Clinical Decision Support (eCDS) tools and systems to support health professionals across their scope of practice." The recommendations below relating to eCDS can inform the future work on eCDS.

A. That the findings in this report provide input into a digital roadmap for electronic Requesting of Pathology within Australia.

1 RCPA SPIA Guidelines V4.1 have been developed; these guidelines provide advice relating to standardised requesting and reporting terminology, standardised units of measure, and report rendering in Australian pathology laboratories. These could readily become standards and should be reviewed for consideration of inclusion as mandatory laboratory accreditation and assessment criteria under NPAAC.

2 Work on e-requesting should consider:

- where relevant the ability to either include, or digitally provide on request, inclusion of fields for current symptoms, relevant family/ genetic history, management of a known condition, and medication information as a minimum
- "business rules" when requesting, for example adding additional tests post the e-request being submitted or simultaneous requests to multiple providers. Some PSPs triage their requests and fulfill the last request received, as a business rule. How this is dealt with needs to be considered in any digital exchange

- Where presentation for collection is delayed. There may be clinical reasons for the request not being presented immediately by the patient or not at all, e.g. if you feel no better by next week, then please have the following test
- That work be undertaken to link Practice Management Systems to the Medicare Benefits Schedule for checking against MBS requirements.

3 e-requesting information flows should allow for asynchronous, bi-directional exchange of information between the requestor and the provider. Consideration should be given to these exchanges forming part of the patient record in future.
4 Whether further clinical information should be requested of GPs (for example Pregnancy Status) or pathologists and those working in collection centres should simply access it (on MHR for example) are seen as areas of ambiguity that should be clarified.
5 Where clinicians are working from home, for example national telehealth providers, personal identifying information (for example their address) is not provided to patients on requests, as is sometimes currently the case.

B. **That eCDS should be progressed, as it assists many requestors some of the time, but not all requestors all of the time, with more appropriate ordering of Pathology. The next steps for implementing an eCDS within Australia requires careful consideration, given its complexity and the effort to maintain a knowledgebase**. Consideration should be given to the following:
1 Clear governance, management, processes and infrastructure are identified to support eCDS moving forward.
2 Any peer review of evidence includes peer review by both GPs (and other Requestors) and PSPs for supporting eCDS (including knowledgebases).
3 A Business Case is developed to investigate models for an RCPA-endorsed national eCDS knowledgebase for implementation and use within the Australian health system. The Business Case would consider many factors, including the RCPA management of the knowledgebase content, and the establishment of an Authority by Government to provide oversight of all eCDS knowledgebases. Contingent on the Business Case outcome, that eCDS knowledgebase(s) be developed and/or implemented as a demonstration of national decision support tools and provide evidence and knowledge for informing other clinical specialties.
4 Provision of a national knowledgebase could be linked to other knowledgebases, including for example Monthly Index of Medical Specialties (MIMS), Therapeutic Guidelines, RACGP Guidelines for Preventive Health (Red Book), RCPA Manual, Australian Medicines Handbook, Royal Women's Hospital guidelines, etc, to provide linked or integrated decision support.

C. **That support for development and implementation of e-requesting and eCDS are considered**, including
1 Change management activities for implementation and adoption should be supported on a multi-year basis until accepted as normal practice.
2 Development of FHIR resources and skills be bolstered nationally.
3 Entities that develop or contribute to national content are supported where possible, for example, terminology development and content mapping.

D. **That the matters noted in "Findings" in relation to use of MHR are considered in future developments and releases**.

E. **That for Reporting of Pathology**

1 Rules supporting Report notifications need to be defined and agreed upon between Requestors and Providers.
2 Reports for Pathology need to be rendered in a standard and consistent (SPIA recommended) format to reduce the time required for interpretation e.g. chronological display of cumulative reports from left to right; to reduce misinterpretation of non-standardised terminology and units of measurement; to reduce errors relating to non-standardised date formatting; etc.
3 Rules for the provision of specialist referral pathology reports need to be developed, i.e. whether the reports are provided by the originating laboratory or separately, need to be defined. This should include how MyHR receives specialist pathology reports.

8. Project Challenges

Clinicians (and others) have multiple competing demands on their time. Whilst the level of support for the Project has been very high, in some cases, for example, the responses to the PSP Survey and attendance at the Medical Software Providers webinars, there was perhaps insufficient information to draw robust conclusions, and therefore some findings within the Report need to be considered in this context.

As with Stakeholder input above, there were also challenges with availability leading to an inability to attend meetings or provide input in a timely manner to meet project timeframes/deadline for the College to consider.

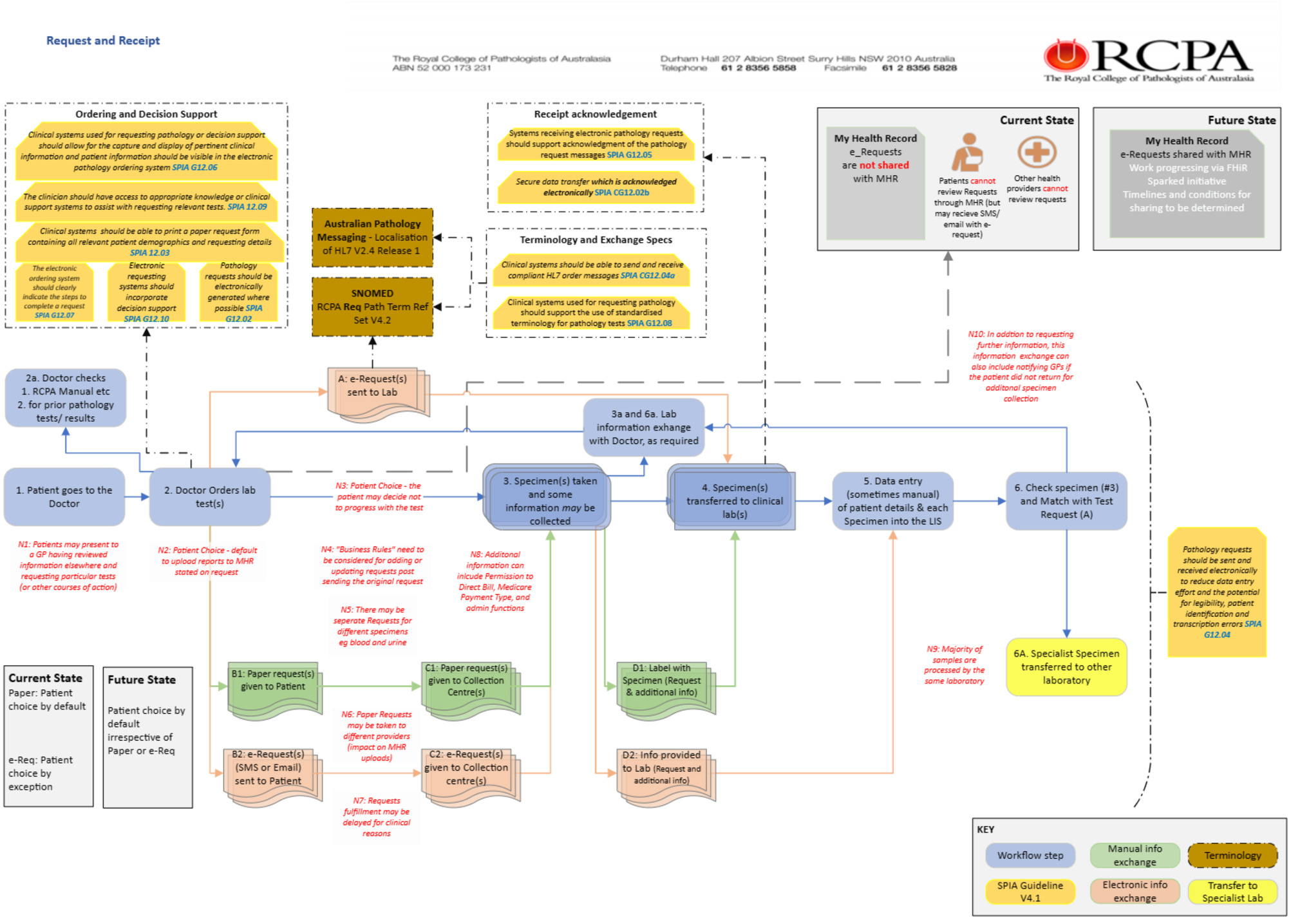
Whilst over 80 GPs did provide input into the Project, no responses were received from very remote communities, 2 from remote communities and 4 each from large rural centres and rural centres. Whilst this is likely reflective of the distribution of GPs, it meant that the hypothesis that e-requesting and eCDS would benefit more remote locations could not be readily tested. Similarly, relatively few responses to the survey (9%) were received from GPs early in their practice, and this was a further target group; anecdotally, the PHNs did confirm that GPs tend to adopt digital tools earlier on in their practice and, therefore, are more likely to use them.

The Project was keen to engage with Medical Software vendors and contacted the MSIA on several occasions seeking assistance. As a final step, the Project contacted an MSIA Board member to obtain support and subsequently used that contact to then engage with several members of the medical software industry. However, initially, it was difficult to engage with ‘industry’ via the MSIA.

A future challenge will be to secure funding to support technical changes and, equally, if not, more importantly, the support for greater use (change, engagement, adoption activities) with clinicians who request pathology.

9. Appendices

9.1 A: End to End Workflows



Test and Report

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