# eHealth Literacy Study – Ballarat

# Technical Report

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Health Services Improvement Unit
Centre for Population Health Research
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# Table of contents

*Tables*

## Figures

*Boxes*

## Acknowledgements

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## Abbreviations and acronyms

| | |
|---|---|
| ADHA | Australian Digital Health Agency |
| eHLQ | eHealth Literacy Questionnaire |
| HLQ | Health Literacy Questionnaire |
| MyHR | My Health Record |
| OR | Odds Ratio |
| WVPHN | Western Victoria Primary Health Network |

## Executive summary

This report presents the outcomes of a body of work undertaken by Deakin University on behalf of the Western Victoria Primary Health Network (WVPHN) and the Australian Digital Health Agency (ADHA). The rationale for the project was the knowledge that, globally, there are numerous examples of failures of implementation of technology and the recognition that successful uptake and utilisation of My Health Record (MyHR) by the full range of Australian citizens, including hard to reach populations, can only be done with deep knowledge of the diversity of eHealth literacy capabilities.

The aim of this project was to understand the eHealth literacy of residents in Ballarat and surrounding regions (City of Ballarat, Shire of Central Goldfields, Hepburn Shire, Moorabool Shire, and Pyrenees Shire), and to apply the Optimising Health Literacy and Access (Ophelia) process to access local experience and wisdom in order to identify existing effective local practices and potential innovative solutions to maximise the use of My Health Record (MyHR) and other digital technologies.

Specifically, the project sought to:
- Develop specific, implementable recommendations for ADHA and other stakeholders to address barriers and enablers;
- Identify education and communication strategies across eHealth engagement and uptake of MyHR, and;
- Recommendations that cover actions required at the individual, family/community, practitioner/professional and system level. These will include short term immediate solutions through to longer term structural solutions.

## Methods and the Ophelia process

The project was based on the Optimising Health Literacy and Access (Ophelia) process which was developed by Deakin University as a means to:
a) Document and understand the diverse health literacy (or eHealth literacy) strengths and weaknesses in the community or in target groups for particular services or initiatives;
b) Obtain and organise experiential and tacit knowledge of both local healthcare providers and local consumers to develop intervention ideas to address these diverse strengths and weaknesses.

The Ophelia process as implemented in this project involved the following major activities:
1. Population-based survey using computer assisted telephone interviews (CATI) of 1000 people who completed the eHealth Literacy Questionnaire (eHLQ)[1] and selected scales of the Health Literacy Questionnaire (HLQ)[2].
2. Cluster analysis to identify groups of people with similar strengths and weaknesses across the seven scales of the eHLQ.
3. Semi-structured interviews with 50 of the respondents to the CATI including at least three from each of the identified clusters.

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[1] **eHLQ** Scale 1: Using technology to process health information; Scale 2: Understanding health concepts and language; Scale 3: Ability to actively engage with digital health services; Scale 4: Feel safe and in control; Scale 5: Motivated to engage with digital services; Scale 6: Access to digital services that work; Scale 7: Digital services that suit individual needs
[2] **HLQ** Scale 1: Feeling understood by healthcare providers; Scale 3: Actively managing my health; Scale 4: Social support for health; Scale 7: Navigating the healthcare system

4. The creation of vignettes (brief plain language case stories) to illustrate each of the clusters, informed by both the CATI survey data and the semi-structured interviews of people in that cluster. Five vignettes were selected for discussion in community workshops on the basis of representing maximum diversity among the clusters.

5. Six Ophelia co-design workshops: workshops that follow a structured process to elicit intervention ideas to improve the use of digital health technologies, including MyHR, with health providers and consumers with extensive experience in the local community. This step is the heart of the Ophelia process and all previous steps lead into it. It is the basis of most of the recommendations in this report.

6. Organisation of the intervention ideas and the development of draft recommendations and a draft report followed by feedback and a workshop with WVPHN and ADHA personnel to refine the recommendations and to align them with past and current activities already underway.

## Population-based CATI survey findings related to MyHR

Two key indicators of levels of engagement with MyHR were identified and the eHealth literacy, health literacy, and demographic information collected in the CATI survey was analysed in order to identify which factors were and were not associated with these indicators. The two indicators were:

**Awareness of MyHR:** People who knew that they either had or did not have a MyHR.

**Intention to use MyHR:** People who knew that they had a MyHR and expressed the intention to use it.

The strongest association with both indicators was with eHealth literacy, both the average score across all seven scales and the scores for most of the individual scales. The following table summarises factors that did and did not show an association with each of the indicators.

| Factors associated with MyHR indicators | Factors not associated with MyHR indicators |
|---|---|
| **Indicator 1: Awareness of MyHR** | |
| <ul><li>Sex</li><li>Using the Internet to search for health-related information in the past 12 months</li><li>eHealth literacy (eHLQ Scales 1, 3, 4, 5, 6, 7)</li></ul> | <ul><li>Age</li><li>Educational attainment</li><li>Number of long-standing diseases or conditions</li><li>Self-rated health</li><li>Number of contacts with a health professional in the past 12 months</li><li>eHLQ Scale 2: Understanding health concepts and language</li><li>Health literacy (HLQ Scales 1, 3, 4 and 7)</li></ul> |
| **Indicator 2: Intention to use MyHR** | |
| <ul><li>Sex</li><li>Using the Internet to search for health-related information in the past 12 months</li><li>Educational attainment</li><li>eHealth literacy (eHLQ Scales 1 to 7)</li><li>Health literacy (HLQ Scales 1, 3 and 4)</li></ul> | <ul><li>Age</li><li>Number of long-standing diseases or conditions</li><li>Self-rated health</li><li>Number of contacts with a health professional in the past 12 months</li><li>Health literacy (HLQ Scale 7)</li><li>HLQ Scale 7: Navigating the healthcare system</li></ul> |

The following graph shows the strong relationship between eHealth literacy and the intention to use MyHR. The horizontal axis shows the 12 clusters identified through the cluster analysis in descending order of overall eHealth literacy (also indicated by green to brown shading). The height of the bars is the number of people in each cluster while the blue line is the percentage of people in that cluster who intend to use MyHR.
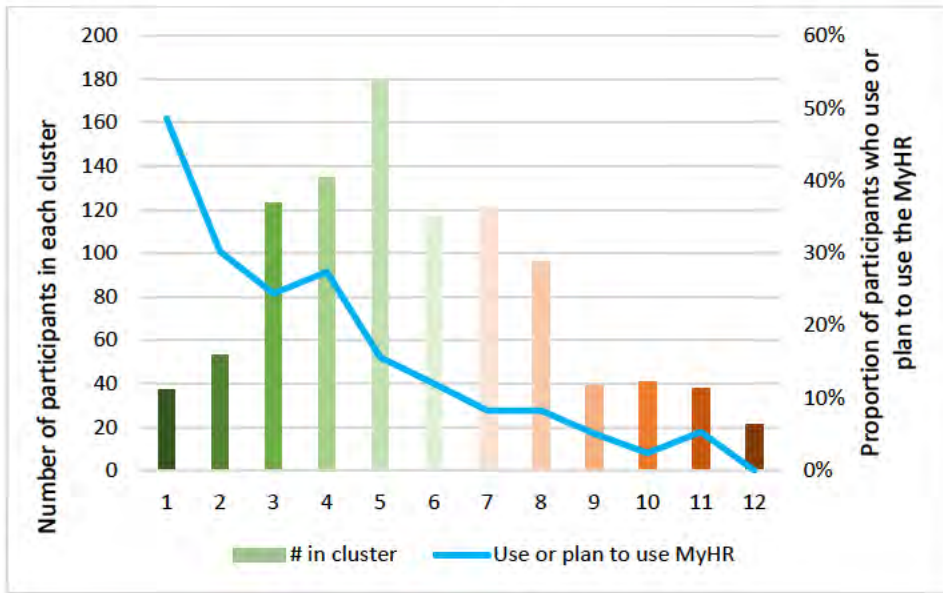
## Key findings from semi-structured interviews

The main purpose of the semi-structured interviews was to inform the development of vignettes for use in the ideas generation workshops. The semi-structured interviews focused on people's experiences and perceptions about digital health services. The following diagram shows key themes from the semi-structured interviews about barriers to using digital health technologies in general (not specifically MyHR). The yellow boxes summarise spontaneously offered suggestions about what would help people to use digital health technologies.



Barriers to engaging with or managing health through technology, and strategies to address these barriers

T1. Lack of control over personal health information on eHealth records

T2. Attitude and skills around technology

T3. Not using technology to manage health

T4. Not interested in technology (emotive)

T5. Unaware of eHealth

T6. Prefer face-to-face health information

**Communication strategies:**
Facts on eHealth around security, such as who can access, how to use, and how to have control over information

**Software strategies:**
Easy passwords with prompts to access information and websites; easy to navigate websites and simple, clear information and links; get the people who will be using the software to design and test it

**Education strategies:**
Education on how to use technology (computers, iPads, smartphones, the internet); face-to-face and online tutorials on how to use websites and access good quality health information online

**Practitioner strategies:**
Facilitation of eHealth through information and educating patients or managing on their behalf

T7. Misleading information on the internet

T8. Inflexible technology

T10. Security concerns around eHealth

T12. Issues using government websites

T14. Health system barriers

**Community hub** to access technology and eHealth information

T9. Access (coverage issues or no internet)

T11. Lack of access to timely and appropriate health services

T13. Previous bad experiences with healthcare providers or services

T15. Navigating the health system

Individual level themes | System level themes

*T denotes theme number

While the semi-structured interview did not have specific questions about MyHR, several people spontaneously offered concerns or support for MyHR (see following table).

| Concerns about using MyHR | Support for using MyHR |
|---|---|
| • Security concerns / lack of trust in government / others accessing information<br>• Don't know how to use MyHR, how to access, what is stored, how to have control<br>• Don't see the need for MyHR<br>• Incompatible / inconsistent systems<br>• Software difficult to use - passwords<br>• Unable to manage records for children | • Healthcare provider access for timely and appropriate care<br>• Managing health for family<br>• Nothing to hide - not concerned about security |

## Key findings from ideas generation workshops

The workshops produced a wide range of ideas relevant to people with widely differing eHealth literacy strengths and weaknesses. The intervention ideas were grouped into nine categories with numerous subcategories under each heading. The main categories were:

1. Policies, laws and regulation
2. Organisations that promote or support the use of digital health technologies
3. Managing public information and perceptions
4. Features of the digital technologies
5. Process of engaging people
6. Role of healthcare providers
7. Understanding particular target groups
8. Community-based activities
9. Activities targeted at individuals and families

While many ideas were generated in each of these areas a key principle that arose was that the whole is more than the sum of the parts and that there is a need for a planned, integrated approach across all of these categories of action. Three issues were identified where an integrated approach is of particular importance:

1. The need to assist people to understand potential benefits, the relevance of possible benefits and to weigh benefits against possible risks.
2. The need to address a range of concerns about how MyHR and other developments in digital health technologies may impact on familiar and valued processes of care (especially relationships with GPs).
3. The fact that some of the people who might experience the greatest challenges engaging with MyHR may also be the people who have greatest need of the support that it offers and greatest capacity to benefit.

The recommendations (below) produced from the workshops were grouped into three areas:

- **Four broad principles** that need to underpin all activities to increase people's engagement with digital health technologies in general and MyHR in particular.
- **Category 1 recommendations:** which include three integrated sets of recommendations related to each of the three issues just listed. The emphasis is on integration and coordination of activities.
- **Category 2 recommendations:** which include specific actions related to each of the nine themes listed above.

In support of efforts to develop integrated, systemic strategies we considered the consumer journey from their personal context, through initial steps in engaging with MyHR, to eventually obtaining the full benefits of the technology. The following diagram identifies a range of key possible points in such a journey. These were identified from both the semi-structured interviews and the workshops. At each of these points, people can have experiences that either increase or decrease the likelihood of people deepening their engagement with MyHR, therefore each is a possible point of action where strategies to increase positive influences and minimise negative influences can be applied.

| Pre-existing situation | Initial contact | Introductory experiences | Is it for me? | Experiences of use | Getting the benefit |
|---|---|---|---|---|---|
| Digital health experience | Media/mass communication | News stories | Understanding potential benefits in a personal way | User friendly and successful | |
| Health service experience/ relationships | | Public education, information | | Integrated into familiar and preferred health care | |
| Preferred healthcare and health literacy style | | Discussion with health provider – self management orientation | Trust the technology and process | | Stories of benefit are shared |
| Access to technology | Health professional/service | Discussion with health provider – 'we can help' orientation | Trust the information and potential users | Easy problem solving | People are aware of situations where they benefit |
| IT interest and ability | | Introduced in health education program | | Able to check the accuracy of data and get errors fixed | |
| Scepticism/trust in government and other agencies | | General discussions with friends or family | What do I need to do and can I do it? | Convenience for things that are important to me | |
| Particular groups (e.g. aged, people with a disability, remote) | Social setting | Practical exploration with friends or families in the context of a meaningful activity | Will it affect my relationship with my doctor or other health provider? | Informed when a provider uses the data | |
| | | Connection with familiar use of digital health technology | | | |

## Summary of recommendations

Following is a concise summary of recommendations. Specific actions for each recommendation are proposed in the full report.

### *Principles underpinning all recommendations*

**Principle A:** Actions to promote the use of digital health technologies including MyHR need to be guided by a principle of equity and to recognise people who have the greatest need for a system like MyHR are often the people facing the greatest barriers to engagement.

**Principle B:** Achieving acceptable population-wide implementation and community engagement in digital health technologies and MyHR will require action at multiple levels of government, organisations and implementation in an integrated and synergistic manner.

**Principle C:** It is necessary to recognise that digital health technologies, including MyHR, can be perceived by many people as a change that poses a threat to systems of care that are comfortable and familiar to them. All actions to promote digital health technologies, including MyHR, must recognise and take systematic and proactive action to manage people's expectations and anxieties.

**Principle D:** There is no one-size-fits-all approach to education and communication. An extensive and diverse suite of approaches are needed to address the diverse needs of different groups. Promotional materials must reflect an understanding of the core concerns and desired benefits of different groups in the community.

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***Category 1 recommendations:*** *integrated sets of recommendations related to key issues*

## Key issue 1: Assist people to understand potential benefits, the relevance of possible benefits, and to weigh benefits against possible risks.

**Recommendation 1**

There is a need for an integrated and synergistic strategy to help people **understand the potential benefits** of MyHR and other digital technologies in a way that is relevant to their life circumstances, perceived health risks, and preferences for receiving healthcare services. This strategy needs to facilitate the ability of people to assess perceived benefits against perceived risks and should, ideally, allow for people to choose a level of engagement that maximises their perceived benefit while minimising their perceived risks.

## Key issue 2: Address concerns about the potential impact of developments in digital health on familiar and valued processes of care

**Recommendation 2**

General practices are the first point of care for most Australians, and the primary source of health data about patients into MyHR. There needs to be an integrated and systematic approach to enabling GPs and practices to support their patients in the most appropriate way. This approach requires action at multiple levels in a practice.

**Recommendation 3**

Where possible, utility should be built into the MyHR system to transparently enhance processes of care that people value, including:

a. Integration with other systems such as systems at pharmacies, [community health centres], hospitals/emergency centres and the medical practices.
b. Methods available for people who do not want to, or who are not able to, interact with MyHR to have it set up for them in such a way that they receive all desired benefits.

## Key issue 3: Providing opportunities to people who experience substantial barriers to engagement but who also have high capacity to benefit

**Recommendation 4**

A flexible and multi-level approach will help people facing barriers to access and engagement to participate at the level of their interest, and to achieve benefits equitably with those who face fewer barriers. This approach should consider the stages that people go through in engaging with digital health technologies.

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***Category 2 recommendations:*** *specific actions at different levels*

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## Levels of health practitioner/professional roles

**Recommendation 5**

There should be clear guidelines [and training] for health professionals who access and use MyHR data for an individual in their care, and these need to be regularly and consistently communicated.

**Recommendation 6**

There is a need to ensure that all health professionals have an accurate and consistent understanding of MyHR and that they understand the potential benefits. Some health professionals feel that they have been bombarded with procedural information but still don't have an overall sense of what MyHR is really going to achieve: *'As health professionals we are bombarded but still don't know much about what it is'*.

## Level of community engagement/outreach strategies

**Recommendation 7**

The workshops produced many suggestions for opportunities and contexts where people may learn about MyHR other than from a health professional or the media. Strategies and resources should be developed to encourage and enable community facilities and organisations to discuss digital health resources, including MyHR, as part of activities that already engage people in learning about and discussing related issues.

## Level of family and individual engagement with digital health technologies

**Recommendation 8**

In many families, one person is substantially more engaged in digital health technologies, and likely to be more interested in MyHR, than other family members. Digital health technologies, including MyHR, should be implemented in such a way that engages participation of different family members where possible.

## Level of the design and features of digital health technologies

**Recommendation 9**

Many participants in the workshop expressed desired characteristics of the system to do with the simplicity of the MyHR interface, the reliability of the system (even with poor Internet connections), and the ease of solving problems within the system. The reported negative experiences may not have related to MyHR but may reflect other negative past experiences including trying to interact with MyGov services.

**Recommendation 10**

The MyHR system should implement a range of strategies to enable concerned individuals to check and correct the information that is uploaded, including making sure that the information has sufficient context to be correctly interpreted by future users.

# Recommendations

The recommendations in this report have been developed to meet these contractual requirements:

1. Develop specific, implementable recommendations for ADHA and other stakeholders to address barriers and promote enablers
2. Education and communication strategies across eHealth engagement and uptake of My Health Record (MyHR)
3. Recommendations will cover actions required at the individual, family/community, practitioner/professional, and system levels. These will include short term immediate solutions through to longer term structural solutions

While most of the recommendations in this report are derived directly from the data and discussions that occurred during the activities of the project, some select recommendations have been incorporated based on the wide experience of the consultants in developing and implementing health literacy policy and interventions. The recommendations that are not derived directly from the data in this project are [enclosed in square brackets].

## *Categories of recommendations to ensure coverage of all Australians*

This project used a grounded approach where both community members and health professionals were exposed to graphic and contrasting representations of the digital health knowledge and experiences of community members so that the breadth of proposed solutions are intended to ensure broad coverage of all segments of society.

Box 1 Two categories of recommendations that seek to ensure coverage of all Australians

> **Category 1 recommendations** address the major issues requiring an integrated synergistic approach (in general these tend towards longer-term, structural solutions)
>
> **Category 2 recommendations** for actions at specific levels including actions required at the individual, family/community, practitioner/professional and system levels (including design of digital health technologies) to increase uptake of eHealth technologies and MyHR.

**Category 1 recommendations** are about longer term and structural solutions that need to be addressed synergistically at the multiple levels of local and national lead agencies, and through multiple strategies. These recommendations point to the role of policy and policy-makers to implement strategies for systems improvement even though the workshops to generate ideas for strategies were conducted with local residents and health professionals, and not with high level policy makers. This local consultation was to ensure that the ideas generated were practical and informed by local consumer and practitioner experience and wisdom. However, the synergistic development and implementation of an integrated set of locally-generated strategies require the holistic, helicopter view and careful planning of local and national lead agencies.

**Category 2 recommendations** address local perceptions and awareness of gaps or problems in eHealth engagement or uptake of MyHR, and where new education and communication approaches, styles, emphases, and strategies may be required. These recommendations include actions that can be implemented at the individual, family/community, practitioner/professional, and systems levels.

*What the recommendations do and do not say about past and current implementation of MyHR*

It is important to note that the recommendations are not based on a detailed organisational or systems analysis of what has been or is being done to increase eHealth engagement and uptake of MyHR. Rather, the recommendations are based on the actual perceptions and awareness of the people and health professionals in the community (i.e., the data are derived using a grounded research approach). **The recommendations should not be taken as suggesting that nothing is being done to address a proposed gap or problem.** The recommendations may mean different promotion strategies are required and specific locally-generated solutions are needed to maximise the uptake of eHealth technology and MyHR by as many people as possible.

Table 36 (Appendix I) correlates the recommendations in this report to consumer education, consumer access, healthcare provider education, and systems/policy, as requested by ADHA. Table 36 is a template that will show the activities and developments that relate to MyHR that have already occurred or are underway in relation to each of the recommendations in this report, as well as activities planned for the future. The past, current and future actions can be populated by the Australian Digital Health Agency (ADHA).

*Principles underpinning the recommendations*

There are four fundamental principles arising from this research study that could be considered recommendations themselves but which, importantly, are critical to nearly all the other recommendations. Therefore, these four principles have been highlighted as core principles for action.

Box 2 The four principles underpinning the recommendations

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**Principle A:** Actions to promote the use of digital health technologies including MyHR need to be guided by a principle of equity and to recognise that the people who have the greatest need for a system like MyHR are often the people facing the greatest barriers to engagement. Therefore, in planning for improvement, strategies should aim to maximise the benefits for people with the greatest needs and health systems should be developed with the flexibility to allow for this.

**Principle B:** Achieving acceptable population-wide implementation and community engagement in digital health technologies and MyHR will require action at multiple levels of government and organisations and implementation in an integrated and synergistic manner across these levels. In considering the recommendations, it is necessary to always reflect on how the whole may be more than the sum of the parts. (See Recommendations 1 to 4 as examples of synergistic sets of interventions.)

**Principle C:** It is necessary to recognise that the introduction of digital health technologies, including MyHR, is perceived by many people as a change that poses a threat to systems of care that are comfortable and familiar to them. People's expectations are coloured by past experiences with new technologies that have promoted self-service and are associated with a reduction in services, especially services where contact with a person is preferred. Such a scenario is a source of anxiety to many people when it relates to their health and health care. All actions to promote

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digital health technologies, including MyHR, must recognise and take systematic and proactive action to manage people's expectations and anxieties.

**Principle D:** There is no one-size-fits-all approach to education and communication. In particular, approaches that depend solely on mass media and/or uniform printed materials will not engage all the different groups of people in a community. An extensive and diverse suite of approaches are needed to address the diverse needs of different groups, and these approaches will very often need to involve community members having opportunities to discuss potential benefits, concerns, and what is required of them with peers and/or health professionals. Promotional materials must reflect an understanding of the core concerns of community members, and what different groups of people are likely to consider a significant and practical benefit to engagement in digital technologies such as MyHR.

*Category 1 Recommendations: address the major issues requiring an integrated synergistic approach (in general these tend towards longer-term, structural solutions)*

*1.1 Assist people to understand potential benefits, the relevance of possible benefits, and to weigh benefits against possible risks.*

**Recommendation 1**

There is a need for an integrated and synergistic strategy to help people **understand the potential benefits** of MyHR and other digital technologies in a way that is relevant to their life circumstances, perceived health risks, and preferences for receiving healthcare services. This strategy should consider both the intellectual and experiential aspects of understanding (where experience can be personal or gained vicariously through the experiences of others). It needs to facilitate the ability of people to assess perceived benefits against perceived risks and should, ideally, allow for people to choose a level of engagement that maximises their perceived benefit while minimising their perceived risks. Some components of an integrated and synergistic approach could include:

a. [A comprehensive taxonomy of potential benefits of MyHR with an emphasis on the types of benefits experienced and desired by consumers].

b. Description and presentation of potential benefits in terms of the user *not* the health system (e.g., reduced need to tell the same information repeatedly, reduced waiting times, less chance of an accident, convenience in accessing services or purchasing health products, advantages for travel).

c. Sharing simple, true and positive stories in the community (as well as negative stories, which are already widely shared). For this to occur, people need to know when their MyHR has been accessed and how it has streamlined and benefited the services that they have received. Providers who access and use a person's MyHR should be encouraged to, and given a process to, share this fact with their patient.

d. Simple, true stories of how people have benefited need to be made widely available in a range of formats.

e. Simple tools and processes that assist people to assess potential benefits of MyHR against potential risks, and to choose a level of utilisation that suits them. For example, a GP says 'how about I just upload your medications and allergies in case

you have to go to hospital sometime?'; or a chart displaying different levels of engagement with MyHR and potential uses and benefits of each level (similar to the charts presented for many software products).

f. Regular communication/promotion to people to increase awareness of the things that don't exist or don't happen in the current system but that they believe already happen (e.g., a belief that emergency departments somehow already know their history and medications).

*1.2 Address concerns about the potential impact of developments in digital health on familiar and valued processes of care*

**Recommendation 2**

General practices are the first point of care for most Australians and the primary source of health data about patients. There needs to be an integrated and systematic approach to enabling GPs and practices to support their patients in the most appropriate way to engage with MyHR. This approach requires action at multiple levels in a practice.

a. Fully engaging general practice in the design of the system [and ensuring that it integrates with all clinical software systems].

b. Providing training and resourcing to GPs and practice nurses for approaches to introduce MyHR in a gentle and minimally burdensome manner that builds on the patient's belief that the doctor is in control of their care. This should include options that do not require the patient to use technology at all but that still support patients to understand what information a doctor uploads on their behalf.

c. Providing materials that make it easy for doctors or practice nurses to easily discuss what data can be uploaded and what the patient does and does not want uploaded, as well as potential benefits of use including both health and convenience benefits.

d. Ensure that it is easy for the doctor to only upload data agreed with the patient.

e. Supporting practices to provide computers that patients can access within the practice that include easy access to MyHR and high quality information sites.

**Recommendation 3**

Where possible, utility should be built into the MyHR system to transparently enhance processes of care that people value.

c. Integration with other systems such as systems at pharmacies, [community health centres], hospitals/emergency centres and the medical practices. Particular potential benefits/conveniences that were identified include streamlined prescription filling, better reminders and appointment making with the medical practice, reduced time waiting at emergency departments, and less need to spend time completing forms and repeating information when referred to other services.

d. As with Recommendation 2, there should be methods available for people who do not want to, or who are not able to, interact with MyHR to have it set up for them.

These conveniences will only help to increase the extent to which people value and trust MyHR if they are made aware of them, both as potential benefits and when they experience these benefits. Many consumers assume that integration of these supports, services and systems is already in place.

*1.3 Providing opportunities to people who experience substantial barriers to engagement but who also have high capacity to benefit*

(Note: Recommendation 2 is also particularly important for this issue)

**Recommendation 4**

A flexible and multi-level approach will help people facing barriers to access and engagement to participate at the level of their interest, and to achieve benefits equitably with those who face fewer barriers. This approach should consider the stages that people go through in engaging with digital health technologies, and the barriers that different groups of people[3] might face. Figure 25 shows some of the issues and points of action that should be considered at each stage of a person's journey to engage with digital health technologies and MyHR. Some of the components of a flexible, integrated approach identified in the workshops were:

a. Implement Recommendation 2.

b. To facilitate access to important health websites, including MyHR, provide computers in community settings such as libraries, neighbourhood houses, medical practices, pharmacies, centres providing University of the Third Age (U3A), and Men's Sheds. This is especially important in areas with poor Internet connections and for people without personal access to computers and good Internet services. There will be additional benefits if there are people at these places who can provide some guidance about how to access and use these websites.

c. Engage organisations like U3A, neighbourhood houses, libraries, and Men's Sheds in providing simple training to use computers for practical purposes.

d. Make systems easily accessible through alternative technologies such as tablets and phones.

- Ensure that MyHR can be accessed through simple smartphone applications.
- Implement a system where people who don't have smartphones can interact through a mix of SMS and phone calls [e.g., a summary of what information is uploaded, notifications of access, who to call to discuss concerns].
- Ensure that all promotional and informational materials contain a phone number to call, not just a web address.
- Ensure that complaints and problem-solving processes allow people to talk to an actual person.

e. Provide all services and interfaces in multiple languages.

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[3] 'Groups of people' does not just mean people with certain demographic or health state characteristics such as people with different disabilities, older people, socially isolated people etc. but also people with different eHealth literacy profiles.

*Category 2 Recommendations: actions at specific levels including actions required at the individual, family/community, practitioner/professional, and system levels (including design of digital health technologies) to increase uptake of eHealth technologies and MyHR*

This section contains additional recommendations based on the levels of action that have not already been included in Recommendations 1 to 4.

*2.1 Health practitioner/professional roles*

**Recommendation 5**

There should be clear guidelines [and training] for health professionals who access and use MyHR data for an individual in their care. These should include:

a. Circumstances in which access and use is or is not appropriate and permissible
b. Communicating with and engaging the patient whose record is being accessed, including:
   - Informing the person that they have accessed the data
   - Allowing the person to make any comments or clarifications that they wish
   - Reassuring the person, where appropriate, that the practitioner will undertake their own assessment and provide an independent opinion
   - If the MyHR data have proved useful in any way, explaining this to the person
   - Discussing any data that will/could be uploaded as a result of the episode of care.
c. Procedures if data are found to be out of date or incorrect
d. How to access problem solving support

**Recommendation 6**

There is a need to ensure that all health professionals have an accurate and consistent understanding of MyHR and that they understand the potential benefits. This has been difficult to achieve due to ongoing changes during the MyHR roll out. Some health professionals feel that they have been bombarded with procedural information but still don't have an overall sense of what MyHR is really going to achieve: *'As health professionals we are bombarded but still don't know much about what it is'*. It was also noted frequently in the workshops that health professionals have high opt-out rates although the evidence for this was not cited. At the earliest possible time the following should be implemented.

a. As a priority, Recommendation 1 should be fully implemented for health professionals.
b. Provision of simple up-to-date resources and training for health professionals with a focus on the following points as soon as the components of the MyHR system are sufficiently settled:
   - Exactly what MyHR is and is not
   - Specific benefits of MyHR
   - Safeguards for security, quality, and appropriate use
   - How MyHR can synergise with and enhance usual care
   - Options for engaging patients as per Recommendations 2 and 5
   - Resources and financial supports that are available

*2.2 Community engagement/outreach strategies*

Recommendation 7 presents many of the ideas from the workshops about options for increasing access to and support for the use of computers and of digital health technologies, including MyHR, in community settings.

**Recommendation 7**

The workshops produced many suggestions for opportunities and contexts where people may learn about MyHR other than from a health professional or the media. Some of these contexts may make it easier to highlight particular potential benefits and for people to develop their understanding in a shared and reflective manner: *'… social engagement is credible really because if you can find a small increase of people that do understand or can use that, that can easily permeate out into their social circles and get gradual exposure to the thing. It does not matter if they are homeless or otherwise if you can get a couple of people who are advocates that can permeate through their social circles. Often when you are presenting there will be two that really get it and the others will trickle in after talking to people and start to understand bits of it.'*

Strategies and resources should be developed to encourage and enable community facilities and organisations to discuss digital health resources, including MyHR, as part of activities that already engage people in learning about and discussing related issues. These could include:

- Health education and promotion events
- Computer training activities (see also Recommendation 4)
- U3A and other lifelong education activities
- [Retirement and financial planning activities]
- Activities that engage people in using computers for other important tasks in life such as MyGov
- Travel planning and sharing events
- Farming events and other business planning and management events

To take advantage of such opportunities, it would be highly desirable to have materials available that present potential benefits in practical, relevant ways as discussed in Recommendation 1.

It would also be useful to ensure that there are links to MyHR or relevant information about MyHR on web pages and materials related to the activities listed above.

*2.3 Strategies for engaging families and individuals*

The recommendations that have already been presented include many recommendations to support flexible implementation of MyHR to support a wide diversity of individual needs and preferences within the community. This section has a focus on suggestions that were made in workshops about engaging families and about families supporting each other.

**Recommendation 8**

A significant finding of both the semi-structured interviews and workshops was that in many families one person was substantially more engaged in digital health technologies, and likely to be more interested in MyHR, than other family members. This can have both positive and

negative aspects. It can be positive because the strengths of one person can help other family members. It can be negative if that person becomes unable to continue that role and other family members do not have the knowledge of what has been done for them or the ability to be engaged on their own behalf. Digital health technologies, including MyHR, should be implemented in such a way that engages and reaches individuals as well as families.

*2.4 Design and features of digital health technologies*

Recommendations 2 to 4 emphasised the need to provide options for people who do not wish to or who are unable to directly engage in the IT interfaces of MyHR. The recommendations in this section are about supporting individuals who do wish to interact with and control their MyHR but who, in order to engage, need the design and features of digital health technologies to be easy to access and navigate.

**Recommendation 9**

Many participants in the workshop expressed desired characteristics of the system to do with the simplicity of the MyHR interface, the reliability of the system (even with poor Internet connections), and the ease of solving problems within the system. While many community members reported having experienced difficulties with these issues in the past, their negative experiences may not have related to MyHR but may reflect other negative past experiences including trying to interact with MyGov services. None-the-less both consumers and health professionals indicated that the following would be required for ease of use:

   a.  Extremely simple language used throughout.
   b.  Ensure short loading times for MyHR web pages and minimum need to load new pages.
   c.  Available on multiple platforms including phones and tablets.
   d.  Options for people who can't remember passwords (fingerprint, retina, [face]).
   e.  Ability to easily solve most problems online or with support that is quick and involves the option to talk to a real person.

**Recommendation 10**

For some people, it is important that the MyHR system enables them to check and correct the information that is uploaded, including making sure that the information has sufficient context to be correctly interpreted by future users. These people are also likely to want to exert control over what information is uploaded and to be able to add comments or information of their own. The MyHR system should make it as easy as possible for users to:

   a.  Identify and read all information that is uploaded, and identify who uploaded it
   b.  Have the ability to block particular information from being visible to other users
   c.  Add notes of comment or explanation to provide context to any particular uploaded information
   d.  Add general notes of their own
   e.  Select a set of information that they want available for a particular purpose (e.g., travel)
   f.  Print out an extract of selected information for overseas travel or for other purposes

Many of these points would only be effective if health professionals who upload information are easily contactable and have the time, willingness, and technical capability to explain about information that has been uploaded, correct errors, and/or remove uploaded information.

## Background

Australia's low rate of health literacy is arguably one of the country's greatest challenges to our well-being, and a challenge that will become more serious as the rates of chronic disease rise and health care becomes increasingly more complex. In an increasingly digitised world, the prospect of challenges with digital health services looms large and, as such, addressing eHealth literacy has become a prominent issue for governments around the world.

Health literacy refers to the personal characteristics and social resources needed for people to access, understand, remember/retrieve and use information to make decisions about health. Health literacy includes the capacity to communicate, assert and enact these decisions. Previous studies, undertaken using tools that mainly capture reading and numeracy skills, have shown associations between low health literacy and poorer health including less appropriate use of health services, less participation in preventive activities, poorer self-management of long term conditions, and adverse health outcomes (1). Health literacy is also a potentially modifiable contributor to health inequities (2).

The Australian Bureau of Statistics (ABS) 2006 Adult Literacy and Life Skills Survey found that 59% of Australians have difficulty with the basic skills needed for health self-management (3). These difficulties include being able to locate information on a bottle of medicine about the maximum number of days the medicine could be taken, and being able to indicate medication dosage, such as one third, on a given container. When people are then confronted with the need to access the Internet and use computers to access information about health and/or health services, the task may be far more challenging for them. Not only does this require strong health literacy, but also the ability to access and understand digital technologies. Consequently, the introduction of a requirement to access digital health information can lead to many people experiencing insurmountable challenges to their self-care.

Research into health literacy has found that people with low health literacy are less likely to seek preventive health care, such as immunisations, and are more likely to miss appointments, misuse medication, and fail to follow the advice provided by their doctors. This leads to adverse events, poorer health outcomes, higher rates of hospitalisation, a lower quality of life for individuals, and increased healthcare costs overall. If these difficulties and health outcomes are transferred to a world where many health services are accessed only or primarily through digital technologies then there is cause for concern for people with low digital health literacy, also called eHealth literacy.

It is becoming increasingly apparent that knowledge about, access to, and use of digital health services is a health equity issue. Research is urgently needed to understand the effects that digital health technologies will have on health outcomes and health equity, especially as digital technologies become embedded in national health policies and health practice.

The introduction of the My Health Record (MyHR) has the potential to dramatically increase every Australian's exposure to health technology and their exposure to health information. Globally, there are numerous examples of failures of implementation of technology at the local and national level (1). Successful uptake and utilisation of MyHR by the full range of Australian citizens, including hard-to-reach populations, can only be done with deep knowledge of the diversity of eHealth literacy capabilities, and in environments with security, safety and provenance of the data.

It is important to note that while health literacy refers to the competencies of individuals, it implies a responsibility for organisations and health professionals to respond appropriately and effectively to the health literacy needs of the consumers they serve (4). Accordingly, health literacy has become a focus of governments, health and community services, consumer groups and researchers due to its relevance and importance to population health, and its implications for ongoing healthcare reform.

Three recent advances in health literacy are the Health Literacy Questionnaire (HLQ), the eHealth Literacy Questionnaire (eHLQ), and the Ophelia process, each of which has provided opportunities to understand and effectively respond to health literacy needs including in the rapidly advancing digital world.

## eHealth literacy and its measurement

The World Health Organization (WHO) describes eHealth as 'the use of information and communication technology (ICT) for health' (5) and eHealth literacy is defined by Norman and Skinner as 'the ability to seek, find, understand, and appraise health information from electronic sources and apply the knowledge gained to addressing or solving a health problem' (6).

eHealth may improve consumers' engagement with health services through ready access to online interventions (7). Strategies to increase consumers' knowledge and management of health has evolved through uptake of computers, smart phone applications, and mobile devices. In order to understand if and why these online platforms or interventions are engaging the population, a targeted measurement tool is required.

The eHealth Literacy Questionnaire (eHLQ) comprises 35 items across 7 scales. It is patient-centred and was derived from extensive consultation with patients and practitioners. It is a multidimensional instrument with strong psychometric properties. The 7 scales of the eHLQ are never added to give a single score. Rather, the scores are presented as 7 separate scores in order to identify the different eHealth literacy strengths and weaknesses among people in the community. We refer to the pattern of strengths and weaknesses of an individual or group of individuals as an eHealth literacy profile. Understanding the range of profiles enables the targeted selection of digital health interventions and supportive strategies for the use of these interventions according to the various strengths and weaknesses identified (8). The eHLQ's development was led by Richard Osborne and Roy Batterham (Deakin University) in collaboration with Lars Kayser and Ole Norgaard (University of Copenhagen, Denmark). The 7 scales are described in Box 3.

Box 3 Seven scales of the eHealth Literacy Questionnaire

**1. Using technology to process health information -** Be able to use technologies to read, write and remember, apply basic numerical concepts, and understand context-specific language (e.g., health, IT or English), as well as to critically appraise information. Know when, how and what information to use.

**2. Understanding of health concepts and language** - Know about basic physiological functions and one's own current health status. Aware of risk factors and how to avoid them or reduce their influence on one's own health.

**3. Ability to actively engage with digital services** - Be comfortable using digital services for handling information.

**4. Feel safe and in control** - Feel ownership of personal data stored in the systems and that the data are safe and can be accessed only by people to whom they are relevant (own doctor/nurse etc.).

**5. Motivated to engage with digital services** - Feel that engaging in the use of digital services will be useful for managing health.

**6. Access to digital services that work** - Have access to digital services that the users trust to be working when needed and as expected.

**7. Digital services that suit individual needs** - Have access to digital services that suit the specific needs and preferences of the users. This includes responsive features of both IT and the healthcare system as well as adaptation of devices and interfaces to be used by people with physical and mental disabilities.

Figure 1 shows a schematic image of the relationship between the 7 scales of the eHLQ as described in Norgaard 2015 (9). This schema identifies scales that relate more to the individual (1 and 2), scales that relate to characteristics of particular digital health systems (6 and 7), and scales that are a product of the interaction between individuals and systems (3, 4 and 5), based on both past and current experiences that people have had engaging with digital health technologies.

Figure 1 The eHealth literacy framework (eHLF)
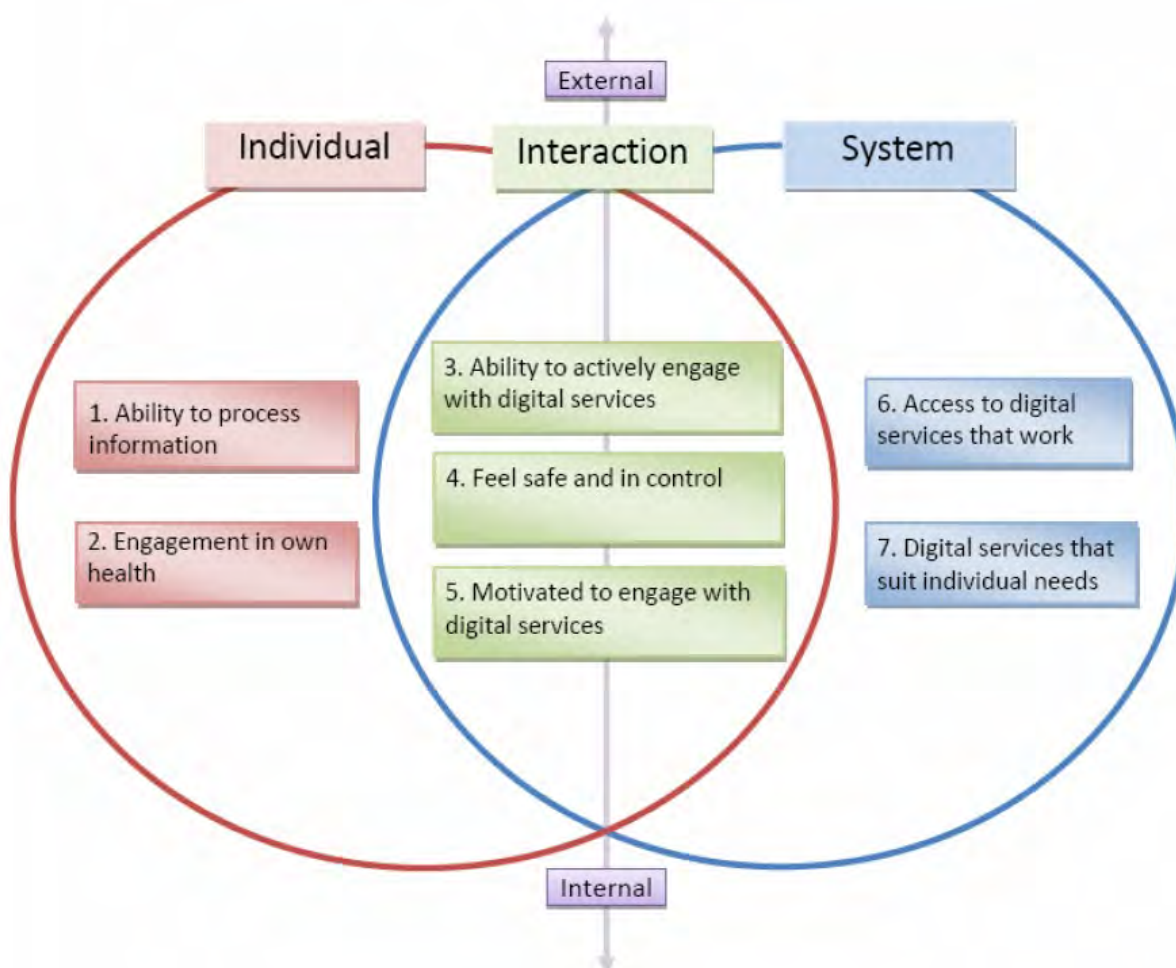


Source: Norgaard et al 2015 (9)

The Health Literacy Questionnaire (HLQ) is a widely-used, multi-dimensional measure of health literacy that provides detailed information about two key areas: the health literacy

competencies of individuals and their lived experiences in attempting to engage with health and community services (10). The tool detects the diversity of health literacy needs of people in the community and can be used for a range of purposes: from describing the health literacy of the population in health surveys, through to measuring outcomes of public health, and building social and clinical interventions designed to improve a wide range of health equity outcomes. The HLQ was attached to the 2018 ABS National Health Survey and will provide Australian national norms and extensive insight into health equity in Australia in the coming months.

The HLQ's 9 separate scales are shown in Figure 2. The HLQ is not designed to provide one overall score. Rather, it provides a comprehensive picture of a person's (and groups of people's) health literacy needs and strengths through the 9 scale scores.

Figure 2 The Health Literacy Questionnaire (HLQ) and an example profile of an individual.

| HLQ scale | Example score |
|---|---|
| 1. Feeling understood and supported by healthcare providers | High |
| 2. Having sufficient information to manage my health | Mod |
| 3. Actively managing my health | Low |
| 4. Social support for health | Very high |
| 5. Appraisal of health information | Very low |
| 6. Ability to actively engage with healthcare providers | High |
| 7. Navigating the healthcare system | Low |
| 8. Ability to find good health information | Very low |
| 9. Understand health information well enough to know what to do | Very high |

This person scores highly on their ability to understand health information (scale 9) and to engage with healthcare providers (scale 6). They have at least one trusted healthcare provider (scale 1) and strong social support for health (scale 4).

They have lower scores in their ability to find and appraise health information (scales 5 & 8), and to navigate the healthcare system (scale 7) and manage their health.

## OPtimising HEalth LIteracy and Access (Ophelia)

The Ophelia process was developed by Deakin University in collaboration with Monash University and the Victorian Department of Health and Human Services to guide small and large scale development and implementation of health and community service improvements (11). The Ophelia process provides organisations with a structured approach to recognise, understand and respond to the health literacy needs of members of their community. The process identifies health literacy strengths and needs within a community and then uses co-design processes to generate equitable and locally relevant responses to these strengths and needs. The Ophelia process includes three phases. Each phase has either two or three steps, as shown in Figure 3. Over 20 Ophelia projects have been implemented around the world and it has been adopted by the World Health Organization (WHO) as the primary health literacy approach in health promotion interventions across chronic conditions and the life course (2).

Ophelia is also underpinned by 8 principles:

1.  Outcomes focused: Improved health and reduced health inequities
2.  Equity driven: All activities at all stages prioritise disadvantaged groups and those experiencing inequity in access and outcomes
3.  Co-design approach: In all activities at all stages, relevant stakeholders engage collaboratively to design solutions
4.  Needs diagnostic approach: Participatory assessment of local needs using local data
5.  Driven by local wisdom: Intervention development and implementation is grounded in local experience and expertise
6.  Sustainable: Optimal health literacy practice becomes normal practice and policy
7.  Responsiveness: Recognise that health literacy needs and the appropriate responses vary across individuals, contexts, countries, cultures and time
8.  Systematically applied: A multi-level approach in which resources, interventions, research and policy are organised to optimise health literacy.

**Figure 3 The phases of the Ophelia process**



**Phase 1**

Identifying local strengths, needs and issues

**Phase 2**

Co-design of interventions

**Phase 3**

Implementation, evaluation and ongoing improvement

Health literacy data are collected from a representative sample of the target population. Data are presented to stakeholders for interpretation. Effective local practices and innovative solutions are identified

Local stakeholders make decisions about priorities for action. Interventions with potential to respond to local health literacy needs or improve information and service access are designed and planned

Health literacy interventions are applied as quality improvement cycles where organisations implement trials and actively improve the effectiveness, local uptake and sustainability of the interventions

It is important to note that the eHealth Literacy Ballarat project involves only Phase 1 – i.e., the identification of local strengths, needs and issues, including effective local practices and innovative solutions.

# Methods

The study procedure is outlined in Figure 4.

Figure 4 Overview of the study procedures

**1: Project set-up - July to Oct 2018**

  a) Signing of agreements
  b) Governance / Ethics

**2: Data collection - Oct 2018**

  The study was undertaken in the Ballarat Goldfields region of the WVPHN catchment

  a) <u>Quantitative data</u> Computer Assisted Telephone Interviews (CATI survey) of 1000 people
  b) Cluster analysis to identify groups of people with similar eHLQ patterns
  c) <u>Qualitative data</u> Semi-structured interviews from the full range of 12 clusters were collected from community members

**3: Preliminary data analysis – Nov 2018**

  a) Quantitative data analysis (CATI survey)
  b) Qualitative data analysis (Semi-structured interviews)

**4: Development of vignettes – Nov 2018**

  a) Vignettes developed from Step 3 using eHLQ data

**5: Community member and clinician/professional consultation workshops 4-6 Dec**

  a) Vignettes presented at the 3 community member workshops and 3 clinician / professional workshops across the region
  b) Ideas to develop strategies and interventions to address barriers and enablers to eHealth engagement and uptake of MyHR were developed by community members and clinician / professionals.

**6: Data coding and analysis from workshops post 7 Dec**

  a) Solution ideas from the workshops collated into similar concepts and then synthesised into themed idea lists
  b) Similar ideas condensed to represent common concepts linked to interventions

## Step 1: Project set-up (Governance, Ethics and agreements) – July to Oct 2018

Stakeholders agreed in the scope of the project and Human Ethics Approval was granted on 24 September 2018 (Project number HEAG-H 157_2018).

## Step 2a: Quantitative data collection - Oct 2018

A population-based CATI survey of 1000 people was conducted. The CATI survey included the eHLQ (electronic Health Literacy Questionnaire) and additional questions about engagement with digital health services (see the CATI survey instrument in Appendix A).

**Computer Assisted Telephone Interview (CATI survey) undertaken by a contract research company**

Adults living in the Ballarat Goldfields region of the Western Victoria Primary Health Network (WVPHN) were randomly selected and called (land line or mobile) and invited to participate until a sample of 1000 was reached[*].

Eligibility criteria were:

- Aged 18 years or over – if a person under the age of 18 answers they were asked if an adult was available.
- Not cognitively impaired.
- Able to provide informed consent and complete the telephone conversation in English.

[*]Two participants gave invalid responses and were excluded from the final sample.

**Eligible respondent**

- Contract research company outlined the project requirements and consent process. Respondents who consented were included in the survey through a computer assisted telephone phone interview.

**Optional consent for semi-structured interviews and/or workshop sought – community members**

- Two questions at the end of the CATI survey that ask participants if they are willing to be contacted for a semi-structured interview or workshop. Participants indicated willingness to take part in further research (workshop or semi-structured interview) to discuss their experiences with digital health technologies.
- Completed CATI surveys de-identified and provided to project team.

**Community member semi-structured interviews and workshops**

- 50 participants were interviewed. The semi-structured interviews helped to create vignettes for the workshops for participants to brainstorm how to improve engagement with eHealth services.
- Up to 36 community members were invited to attend one 2-hour workshop (3 workshops in total) to suggest ideas about how to improve access and engagement with eHealth services, with the discussion based on 5 vignettes.

**Clinician / health professionals workshops**

- As for consumers, up to 36 health professionals were invited to attend one 2-hour workshop (3 workshops in total) to suggest ideas for ways in which the local community can address the identified barriers to engaging in eHealth. Discussion was based on the same 5 vignettes as used in the consumer workshops.
- Expressions of interest emails were sent to clinicians / health services in the local area.
- Workshops were facilitated by Deakin researchers.

**Data analysis and reporting**

- Analysis of data from the 6 workshops to generate recommendations and actions to improve the implementation of digital health reforms in Australia.

A population-based sampling frame was developed for the study in the Ballarat Goldfields region of the Western Victoria Primary Health Network (WVPHN) using the services of a survey specialist contractor[4]. Postal areas in the Ballarat Goldfields region were ordered by their Index of Relative Socioeconomic Disadvantage (IRSD) ranking. A database of landline and mobile telephone numbers was then matched to the postal areas and a random start fixed interval sampling technique was undertaken to draw the sample. A random start fixed interval sampling process gave a pseudo-random sample that was implicitly stratified by IRSD index without allocating the postal areas to strata. A step interval was calculated by dividing the total population by the desired sample size within the following local government areas: Shire of Central Goldfields, City of Ballarat, Hepburn Shire, Moorabool Shire and Pyrenees Shire regions.

The CATI survey (see Appendix A) included the eHLQ, 4 scales from the HLQ, and demographic and health service usage. Selection criteria for inclusion were being able to answer a survey in English and being over the age of 18 years.

Between 8 and 12 interviewers collected data across 6 days of the week. The questionnaires took about 17 minutes to administer with the most time consuming components being the introduction and definitions at the beginning and discussions about further research participation at the end.

A data quality check was undertaken by the research team on 8 October 2018. There were no questions that were problematic for the interviewers to administer. All questions were clearly worded and were well understood by CATI survey participants. No changes to the CATI survey were deemed necessary.

**Step 2b: Cluster analysis for preparation of vignettes**

Cluster analysis (see Figure 5) is a process that allocates people into groups with other people who have a similar data profile: in this case, a similar digital health literacy profile. Digital health literacy is not just one entity but has different elements to it and people can have different strengths and weaknesses across these elements. For example, some people might trust a digital system but have poor personal IT skills whereas others might be the opposite. That is the reason that the eHLQ has 7 scales because these capture the different elements of digital health literacy.

Given that people have these different strengths and weaknesses, it is more useful to think of a profile of scores across the 7 scales rather than trying to give people one total score. People who have a similar profile (i.e., similar strengths and weakness across the 7 scales) are likely to have similar needs to help them use digital health technologies more effectively. Cluster analysis enables us to identify these groups of people so that when we do the planning workshops we can identify strategies to assist each group.

Table 32, Table 33, Table 34 and Table 35 show the results of the cluster analysis. It is important to note that people were grouped only on the basis of their scores on the 7 scales of the eHLQ (not on HLQ or demographic data). Each row in the table is one cluster, which is one group of people. The number of people in that group is shown in the column with the heading 'Num in cluster'. The columns with the traffic-light colours are the 7 scales of the eHLQ. The colours indicate whether the groups score on that scale is relatively high (dark green) or relatively low (dark red) or in between light-green

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[4] Strahan Research Pty Ltd

to yellow to orange. For convenience, in the second column the groups are shown in order from the highest average scores to the lowest average scores across all 7 scales.

Table 1 shows the demographic and digital health use details and the general health literacy scores for each cluster. It is important to note that these variables were *not* used to do the grouping, so that a relationship between the groups and a variable can be considered to show a relationship between digital health literacy and that variable. For example, Table 32 is an extract from Table 1 and shows a strong relationship between digital health literacy and the intent to use MyHR.

Figure 5 Cluster analysis process



1. Individuals with similarities and differences

2. Individuals grouped together by their similarities and differences through cluster analysis
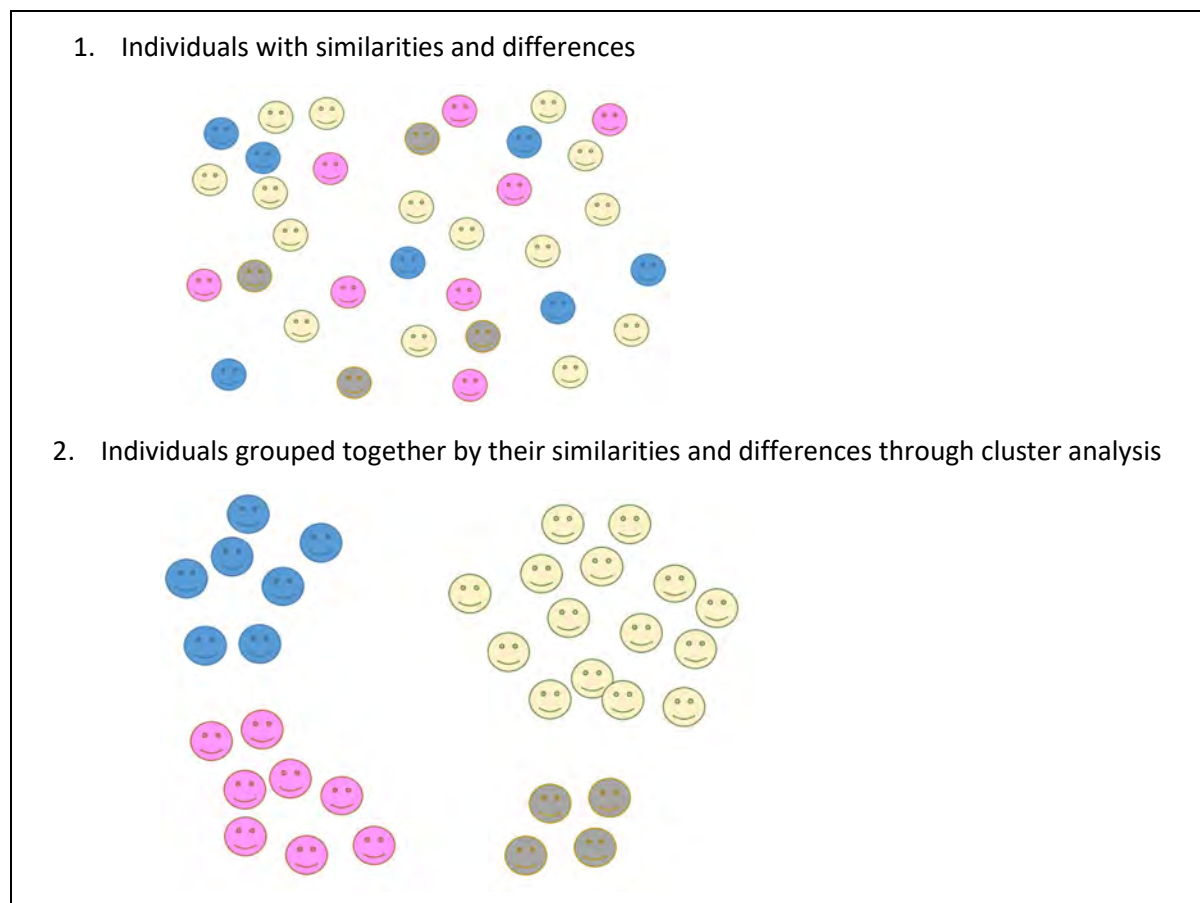
**Step 2c: Qualitative data collection - Oct to Dec 2018**

On completion of the CATI survey, participants were invited to take part in a semi-structured interview (or workshop) at a later date. Those who agreed were asked to provide their name and email (if applicable) for a researcher to contact them. The purpose of the semi-structured interviews was to elicit further information about their experiences with health technologies in general and with health services in their region. Participants were chosen based on which cluster they fell into (minimum 3 interviews per cluster) in order to gain a broad range of responses and experiences from people across the cluster spectrum. 50 semi-structured interviews were undertaken, each of which took between 15 and 20 minutes to conduct. Semi-structured interviews were audio-recorded and transcribed verbatim.

**Step 3: Data analysis of CATI survey and semi-structured interview data**

As previously noted, quantitative and qualitative methods were used in this study. See Appendix C for detailed description of procedures.

**Step 4: Vignette development**

The process of developing the vignettes was based on the 3 components below:

1. Cluster analysis data (eHLQ and HLQ)
2. Qualitative data from the CATI survey, grouped by cluster
3. Key data from the semi-structured interviews, grouped by cluster

The same 5 vignettes were presented at each of the community and clinician co-design workshops. The vignettes can be found in Appendix D.

**Step 5: Community member and clinician / health professional consultation workshops – December 2018**

Thirty community members took part in three co-design workshops, and 32 health professionals took part in three workshops (i.e., six workshops in total). Each workshop was conducted over two hours, with four held in Ballarat and two in Daylesford.

Community members were recruited for workshops from the people who completed the CATI survey.

Recruitment of clinicians included emailing and calling clinicians from the study area to see if they would be interested in attending the workshop.

Deakin researchers facilitated each workshop. Participants and providers were asked to identify the key issues for the aggregated client profiles described in each vignette and then to generate potential solutions for those issues.

*Workshops with community members*

Five vignettes were selected to present at the community member workshops. The aim of the workshops was to generate response ideas to the issues embodied within each vignette. In each workshop, participants were asked four key questions:

1. Does this person seem to be like someone you know?
2. What issues can you identify about this person's use of digital health technologies?
3. What could be done to help improve things for this person?
4. Given that there are many people like this in your community, what could be done to support them?

*Workshops with clinicians / health professionals*

The same five vignettes were presented at the clinician workshops, which were held with WVPHN staff and community health workers and managers. The aim of the workshops was to generate response ideas to the issues embodied within each vignette. In each workshop, participants were asked the same four key questions as the community members. With consent from participants, all workshops were audio-recorded and transcribed verbatim. Findings from the community member workshops and clinician workshops were grouped into key themes.

# CATI Survey results

## Demographic background and contacts with health professionals

The respondents to the CATI survey were on average 66 (IQR 58 to 74) years of age (29% below 60 years, 48% 60 to 75 years, and 23% 75 years and older) (see Figure 6), 54% were women, only 1% did not speak English at home and 2% identified as Aboriginal or Torres Strait Islander. Around one third of participants (31%) completed up to year 12, 25% had completed a trade certificate, apprenticeship, diploma or college/TAFE, and 31% had completed tertiary education (Figure 7). See Appendix H for more detailed demographic background.

Compared to the population of the Western Victorian Primary Health Network, the CATI survey sample had a similar proportion of people who identified as Aboriginal or Torres Strait Islander and a similar proportion of women (54% compared to 51%) (Table 16) The CATI survey sample had a higher proportion of those aged 55 to 70 years (39% compared to 19%) and aged over 70 years (41% compared to 13%), and a higher proportion of those with a tertiary education (31% compared to 14%) compared to the Western Victorian Primary Health Network.

Figure 6 Age of CATI survey participants
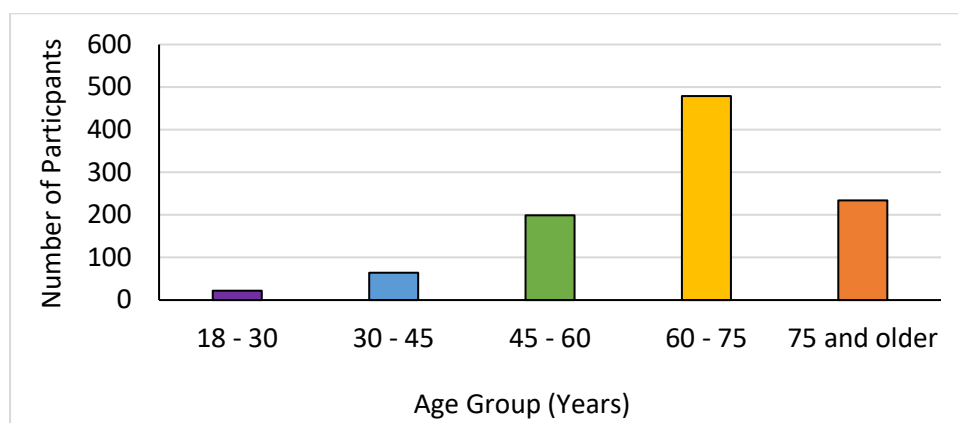


Figure 7 Highest educational attainment of CATI survey participants
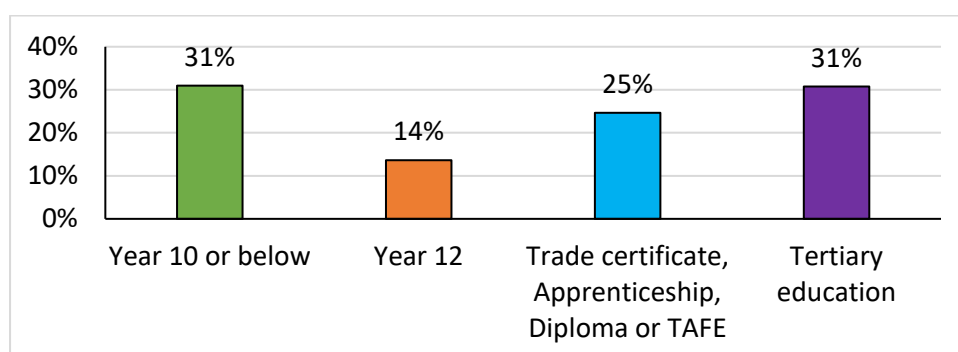


## Health conditions

Close to half the respondents (43%) reported having no long-standing illness or disability, 34% reported having one, and 23% reported having 2 or more. The most common reported conditions were arthritis (14%) and heart disease (13%). Other frequent conditions were chronic pain (9%),

diabetes (8%) and cancer (5%). Depression and anxiety were reported by 5% and 3% of respondents, respectively. See Figure 9 and Appendix H for further details.

Figure 8 Number of long term diseases or illnesses reported by CATI survey participants
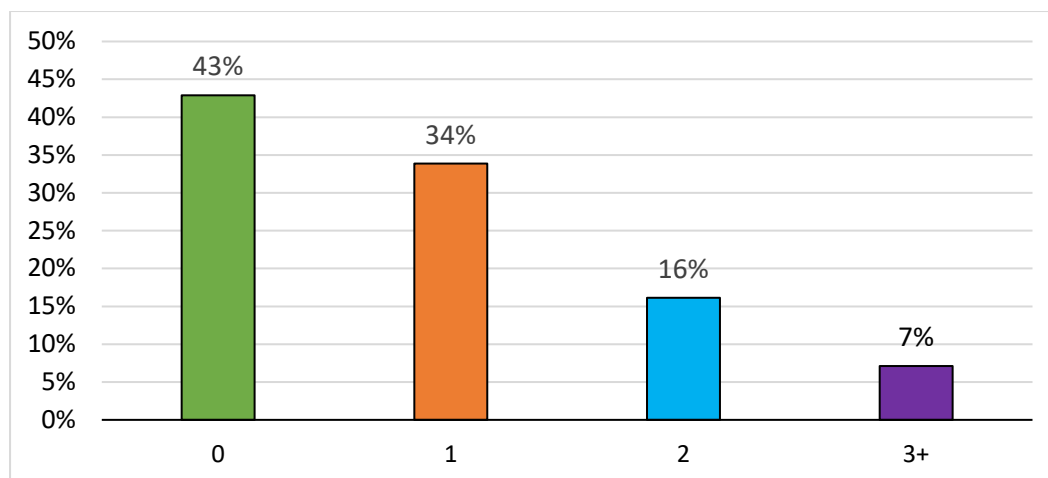


Figure 9 Long term diseases or illnesses* reported by CATI survey participants
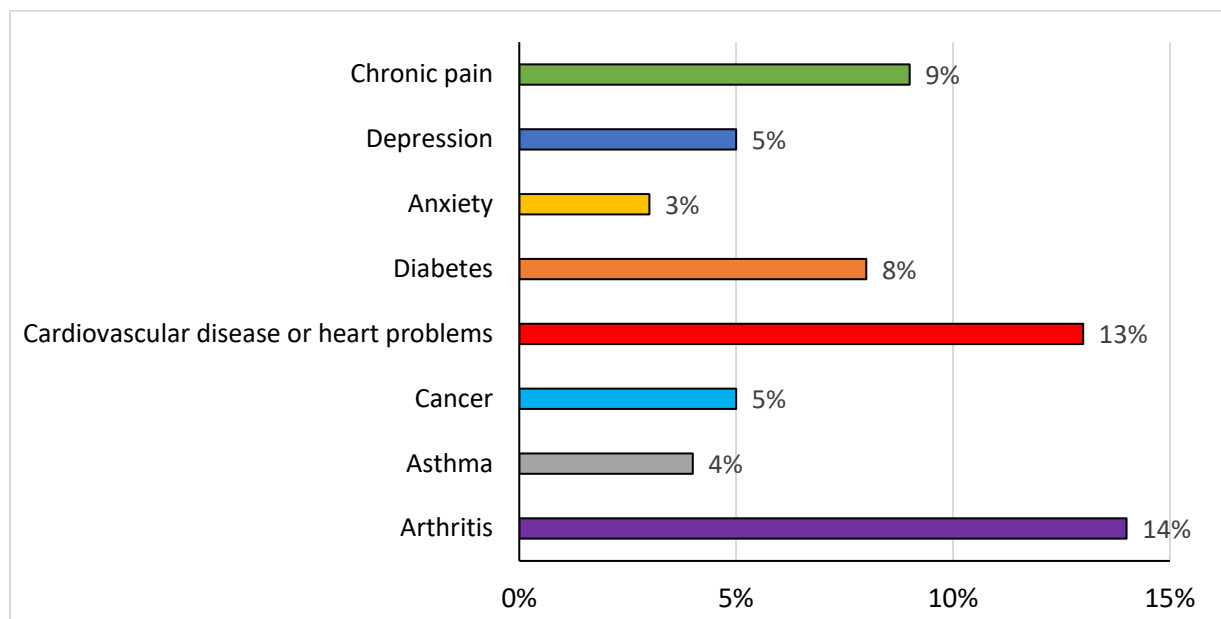


*Note that participants could select more than one disease or illness

## Contacts with health professionals

Over a quarter (27%) of respondents reported having contact with a health professional more than 12 times in the past 12 months. The majority reported contact between 2 and 6 times (45%), whereas only 6% reported only 1 contact, and 3% reported no contacts in the past 12 months. See Appendix H Table 14 for further details.

Figure 10 Number of contacts with a health professional in the past 12 months by CATI survey participants



Legend: 12 or more | 7 to 11 | 2 to 6 | Once | Not at all
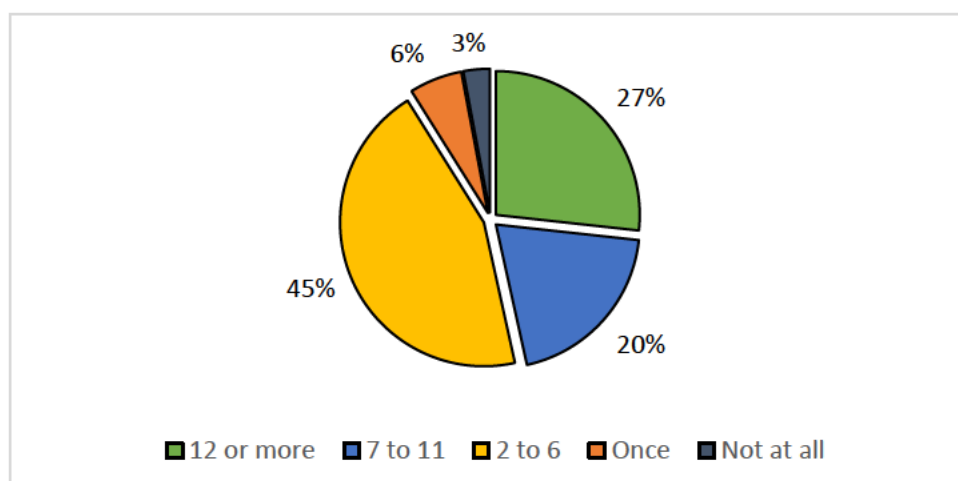
## Engagement with the Internet and My Health Record (MyHR): who and why?

To explore the community's engagement with MyHR, the data were organised in the following way:

- *Access to and use of the Internet,*
- *eHealth literacy and Health literacy*
- *MyHR Awareness* (did participants know whether or not they had a MyHR)
- *Engagement* (for participants who were aware whether or not they had a MyHR, did they have a MyHR)
- *Usage* (for participants who had engaged with the MyHR, did they use or intend to use it).

## Access and use of the Internet

Close to half the respondents (42%) reported not using the Internet to search for health-related information in the past 12 months. Of these, the most commonly selected reasons for not accessing the Internet were 'I prefer face-to-face interaction with health services' (41%), 'I don't have the right technology (equipment)' (22%) and 'I don't want to' (21%).

Among the 58% of respondents who used the Internet to search for health-related information in the past 12 months at least a few times, most commonly accessed the Internet using a computer (68%). See Appendix H

Table 15 Use of the internet to access health-related information for further details.

Figure 11 Usage of the Internet in the past 12 months by CATI survey participants to search for health related information
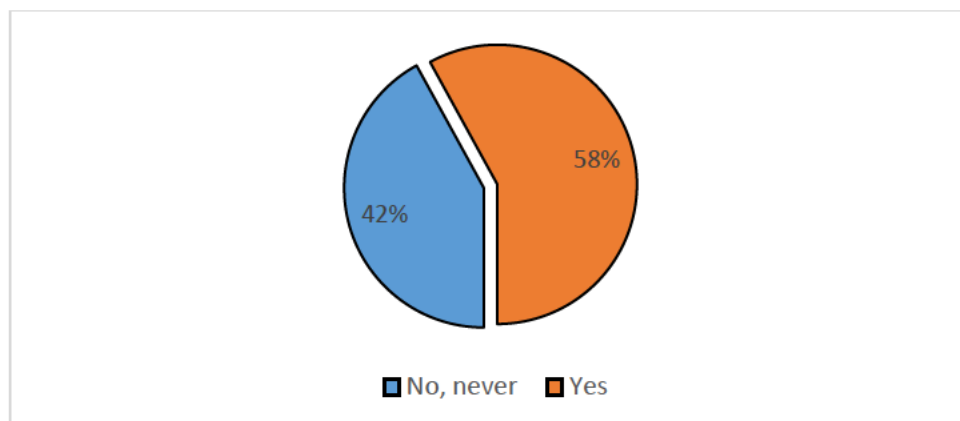


*eHealth literacy and health literacy*

As this is the first epidemiological study of eHealth literacy in Australia, it is not possible to compare the results with other groups and reference the scores on each scale to an external standard. We assessed eHealth literacy using all seven scales of the eHealth literacy questionnaire (eHLQ). Overall, participants generally disagreed (mean <2.5 on a scoring scale that ranges from 1 *strongly disagree* to 4 *strongly agree*) that they had eHealth literacy skills (eHLQ) relating to: eHLQ Scale 1. 'Using technology to process health information', eHLQ Scale 3. 'Ability to actively engage with digital services', eHLQ Scale 5. 'Motivated to engage with digital services', and eHLQ Scale 7. 'Digital services that suit individual needs'. However, participants generally agreed (mean ≥2.5) that they had eHLQ Scale 2. 'Understanding of health concepts and language', eHLQ Scale 4. 'Feel safe and in control', and eHLQ Scale 6. 'Access to digital services that work'.

We assessed health literacy using four of the nine scales of the health literacy questionnaire (HLQ): HLQ Scale 1, Feeling understood and supported by healthcare providers; HLQ Scale 3, Actively managing my health; HLQ Scale 4, Social support for health; HLQ Scale 7, Navigating the healthcare system. Overall, participants tended to agree (mean ≥2.5 on a 1 to 4 scale) that they had health literacy skills (HLQ) relating to HLQ Scale 1. 'Feeling understood and supported by healthcare providers', HLQ Scale 3. 'Actively managing my health', HLQ Scale 5. 'Social support for health', and generally found it somewhat difficult (mean <4 on a 1 to 5 scoring scale of *cannot do or always difficult* to *always easy*) to HLQ Scale 7. 'Navigating the healthcare system'.

## My Health Record access and use or intention to use

About one third of participants reported having a MyHR (Engaged with MyHR, 32%), about one third reported they did not have a MyHR (Not engaged with MyHR, 32%), and about one third of participants were unsure if they had a MyHR (Uncertain, 36%). Only 17% of the sample were engaged with the MyHR and either currently used it or had a strong intention to, while 15% of the sample were engaged with the MyHR but either did not intend to use it or were not sure if they intended to (see Table 17 and Figure 12).

Figure 12 Awareness, engagement and use, or intention to use, the My Health Record by CATI survey participants
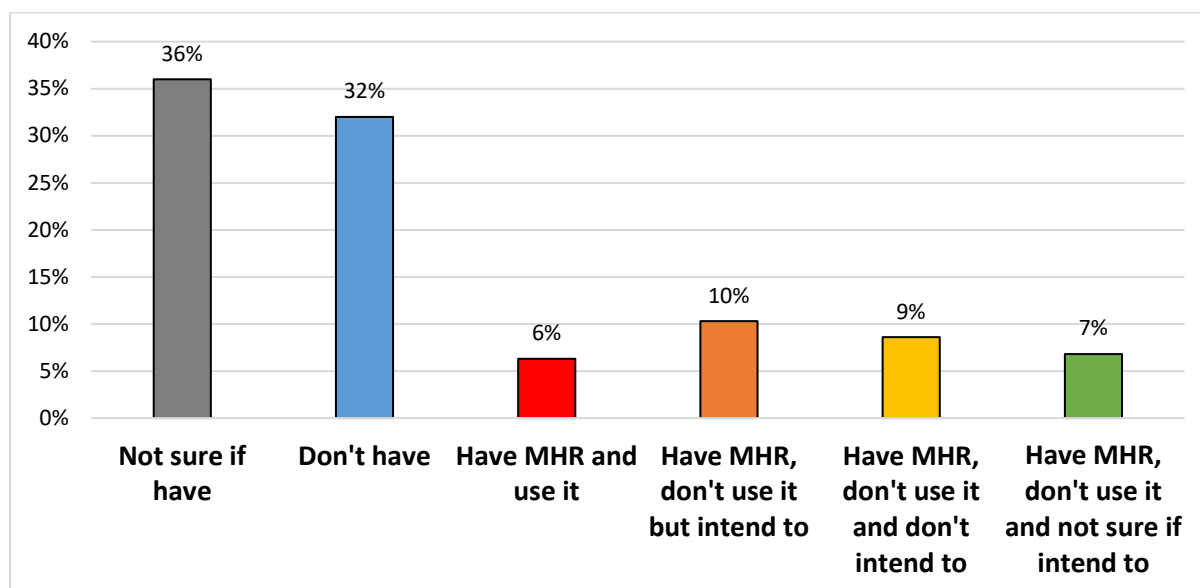


The sample demographics for each sub-category of MyHR awareness, engagement and use or intention to use are reported in Appendix H, Table 17, Table 18, and Table 19. Results from prediction analyses are summarised in Figure 13, Figure 14 and Figure 15 below, and comprehensive results from these analyses are reported in Appendix H. Table 20, Table 21, Table 22, Table 23, Table 24 and Table 25.

The prediction analyses explored if one subgroup was more or less likely to be aware of whether they had a MyHR (Figure 13), engage with the MyHR (Figure 14) or use the MyHR (Figure 15) compared to a reference subgroup, adjusting for differences in age between subgroups. This analyses presents the associations using odds ratios, which can be interpreted as follows: an odds ratio of 1 indicates no association, an odds ratio greater than 1 indicates the subgroup was more likely to be aware, engage or use the MyHR compared to a reference subgroup, and an odds ratio of less than 1 indicates the subgroup was more likely to be uncertain, to not engage and to not use the MyHR compared to a reference subgroup.

## Men and women and MyHR awareness, engagement with MyHR and use or intention to use MyHR

Compared with men, women had a 1.4 fold higher odds of being aware of whether or not they had MyHR (see Figure 13). Among those who had a MyHR, women had a 1.8 fold higher odds of using or having a strong intention to use the MyHR compared with men (Figure 15). There was no difference between women and men in the odds of MyHR engagement (among those who were aware of having a MyHR) (see Figure 14).

## Age and education and MyHR awareness, engagement with MyHR and use or intention to use MyHR

There was no clear pattern between age and people's awareness of having a MyHR (in the overall sample) or intention to use MyHR (among those who had engaged with the MyHR). However, among

those who knew if they had a MyHR, the odds of MyHR engagement decreased by 0.02 for each additional year of age.

There was no clear relationship between education and awareness of having a MyHR (in the overall sample) or engagement with the MyHR (among those who were aware of having a MyHR). However, among those who had a MyHR, with increasing education, there was increasing use/intention to use the MyHR – compared to those who completed Year 11 or below, those who had attained a university education had a 2.5 fold higher odds of using or intending to use MyHR.

## Long-standing illnesses or disabilities, self-rated health, number of contacts with a health professional in the last 12 months and MyHR awareness, engagement with MyHR and use or intention to use MyHR

There was no observed relationship between number of long-standing diseases or conditions and MyHR awareness (in the overall sample) or intention to use MyHR (among those who had engaged with the MyHR). However, among those who were aware of whether or not they had a MyHR, there was a positive association between number of conditions and MyHR engagement – compared with those with no long-standing diseases or conditions, those with 2 or more conditions had a 1.8 fold higher odds of engaging with the MyHR.

There was no observed relationship between self-rated health and MyHR awareness, engagement or use or intention to use.

There was no observed relationship between number of contacts with a health professional in the past 12 months and MyHR awareness, engagement or use or intention to use.

## Internet use and MyHR awareness, engagement with MyHR and use or intention to use MyHR

Compared with those who had never used the Internet to search for health related information in the previous 12 months, those who had used the Internet to search for health related information had a higher odds of MyHR awareness (OR = 1.52), engagement with MyHR (OR = 1.81) and use or intention to use MyHR (OR = 2.97).

## eHealth literacy (eHLQ) and MyHR awareness, engagement with MyHR and use or intention to use MyHR

Overall, people who were aware of whether or not they had a MyHR, people who were engaged with the MyHR and people currently used the MyHR or intended to had higher scores across seven eHLQ scales compared to those who were unaware of whether they had a MyHR, those who had not engaged, and those who did not intend to use the MyHR, respectively (Table 28).

For the total sample, eHealth literacy was a strong predictor MyHR awareness (Figure 13 and Table 21). For the total population, the odds ratios indicate that, on average, people with a one unit higher score (i.e., a score of 3.5 versus a score of 2.5, on the 1 to 4 scale) on eHLQ Scale 6. 'Access to digital services that work' were twice as likely (i.e., an OR of 1.99) to be sure about their MyHR status. Across all the scales these data indicate that interventions to improve people's knowledge about their MyHR status should include a focus on eHLQ Scale 6 (OR 1.99), eHLQ Scale 1 (OR 1.77), eHLQ Scale 5 (OR 1.75) and to a lesser extent, eHLQ Scale 3 and eHLQ Scale 4 (OR 1.5 for both).

Among the subgroup of people who were sure about their MyHR status (N=639), eHealth literacy was a strong predictor of who did not or who did engage with the MyHR (Figure 14 and Table 23). All seven eHLQ Scales had an odds ratio greater than 1.6, and were statistically significant (p≤0.001). The strongest predictor was eHLQ Scale 2. 'Understanding health concepts and language' (OR 2.62, i.e., a one unit increase in this scale was associated with about two and half times more likelihood of having a MyHR). Interestingly, eHLQ Scale 4. 'Feeling safe' and eHLQ Scale 1. 'Active users of technology' were the weaker predictors compared with the other eHLQ scales.

Among the subgroup of people who were sure about their MyHR status, and did have a MyHR (N=252), eHealth literacy was a very strong predictor of who was or was not intending to use the MyHR (Figure 15 and Table 25). All seven eHLQ scales had an odds ratio greater than 2.2, indicating a strong association (p<0.005). The strongest predictors were eHLQ Scale 3. 'Ability to actively engage with digital services' (OR 4.44), eHLQ Scale 5. 'Motivated to engage with digital services' (OR 4.24), eHLQ Scale 1. 'Using technology to process health information' (OR 4.14) and eHLQ Scale 7. 'Digital services that suit individual needs' (OR 3.48).

## Health literacy (HLQ) and MyHR awareness, engagement with MyHR and use or intention to use MyHR

The four domains of health literacy that were measured (HLQ Scale 1, Feeling understood and supported by healthcare providers; HLQ Scale 3, Actively managing my health; HLQ Scale 4, Social support for health; HLQ Scale 7, Navigating the healthcare system) did not differ substantially between those who were and were not aware of having a MyHR (Table 31**).** Those who had engaged with the MyHR and those who currently used or intended to use the MyHR had higher scores across the four domains of health literacy that were measured compared to those who had not engaged with the MyHR and those who did not intend to use the MyHR, respectively.

Compared to eHealth literacy, the health literacy scales measured were weaker predictors of MyHR awareness, engagement and usage. For the total sample, Health literacy was not a significant predictor of MyHR awareness (Figure 13, Table 21). For the subgroup of people who were sure about their MyHR status, HLQ Scale 1. 'Feeling understood and supported by healthcare providers' and HLQ Scale 4. 'Social support for health' were significant predictors of MyHR engagement: a one unit increase in HLQ Scale 1 and HLQ Scale 4 conferred a 1.6 and 1.7 fold higher odds of having MyHR, respectively (Figure 14 and Table 23). Conversely, HLQ Scale 3. 'Actively managing my health' and HLQ Scale 7. 'Navigating the healthcare system' were not statistically significant predictors of MyHR engagement.

For the subgroup of people who were aware of whether or not they had a MyHR, and had engaged with the MyHR, HLQ Scale 1. 'Feeling understood and supported by healthcare providers', HLQ Scale 3. 'Actively managing my health' and HLQ Scale 4. 'Social support for health' were strong predictors of using or intending to use the MyHR (Figure 15, Table 25). A one unit increase in HLQ Scale 1, HLQ Scale 3 and HLQ Scale 4 conferred a 1.9, 2.3 and 2.1 fold higher odds of using or intending to use MyHR, respectively. HLQ Scale 7. 'Navigating the healthcare system' was not a significant predictor of using or intending to use the MyHR.

Figure 13 The relationship between CATI survey participant's demographics, health literacy and eHealth literacy, and awareness^ of having a My Health Record (MyHR)
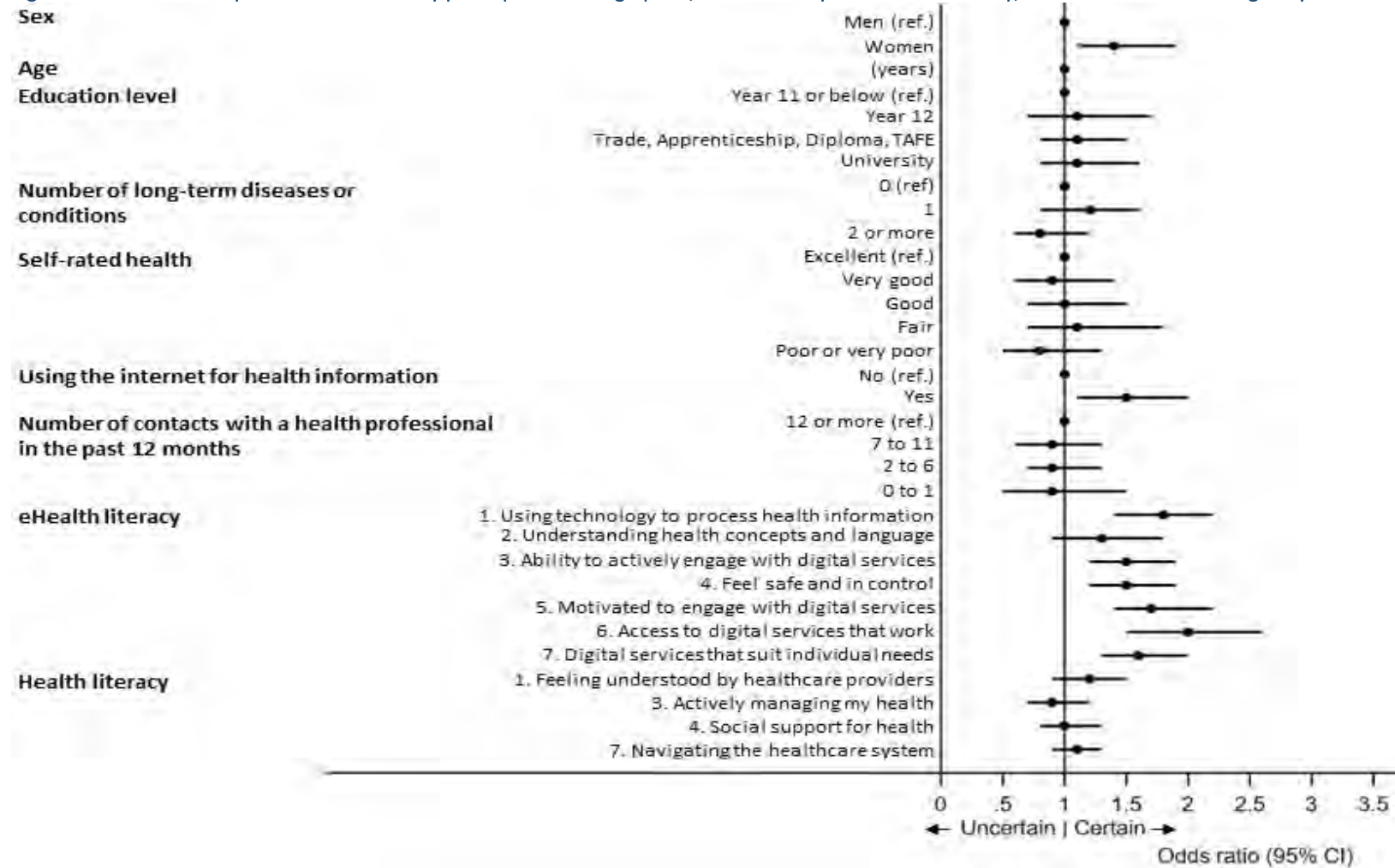


Note: ^Participants were asked "Do you have a My Health Record"; those who responded "I'm not sure" were characterised as Uncertain (N=639), those who responded either "Yes" or "No" were characterised as Certain (N=359); ref, reference subgroup; each circle on this graph represents the odds ratio for each subgroup, compared to the reference subgroup, and the horizontal line through each circle represents the 95% confidence interval (95% CI) for each odds ratio – which represents the likely range of the odds ratio for this subgroup in the Ballarat Goldfields population.

We here interpret odds ratios that are equal to 1 (represented by the dark grey vertical line) or have a 95% CI that includes 1, as being not statistically significantly different to the reference subgroup; odds ratios greater than 1 indicate the subgroup had higher odds of being certain of having a MyHR compared to the reference subgroup; odds ratios of less than 1 indicate the subgroup had higher odds of being uncertain of having a MyHR compared to the reference subgroup.

Figure 14 The relationship between CATI survey participant's demographics, health literacy and eHealth literacy, and engagement^ with My Health Record (MyHR)
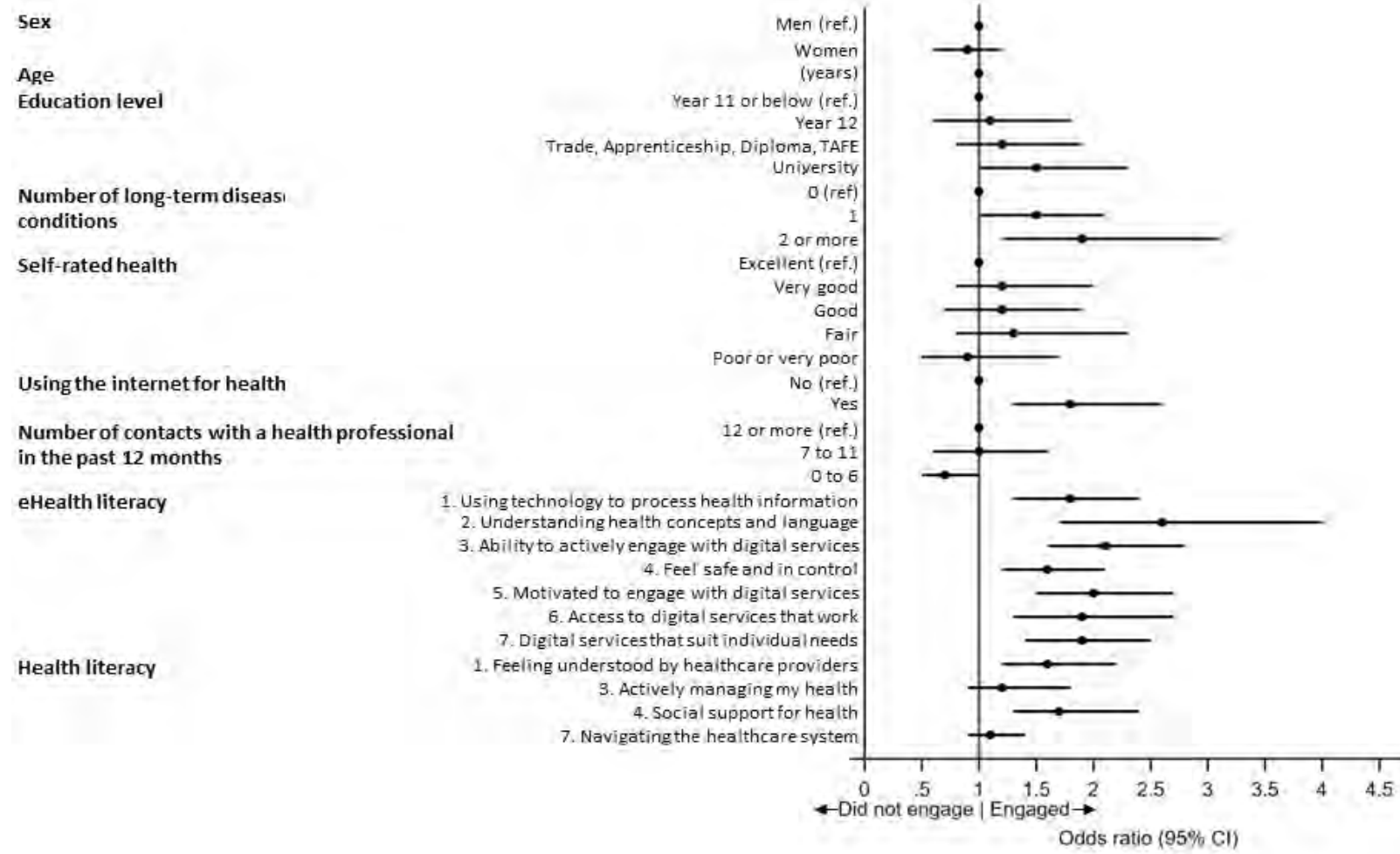


Note: ^Participants were asked "Do you have a My Health Record": those who responded "No" were characterised as Not engaged (N=319); those who responded "Yes" were characterised as Engaged (N=320); ref, reference subgroup; each circle on this graph represents the odds ratio for each subgroup, compared to the reference subgroup, and the horizontal line through each circle represents the 95% confidence interval (95% CI) for each odds ratio – which represents the likely range of the odds ratio for this subgroup in the Ballarat Goldfields population. We here interpret odds ratios that are equal to 1 (represented by the dark grey vertical line) or have a 95% CI that includes 1, as being not statistically significantly different to the reference subgroup; odds ratios greater than 1 indicate the subgroup had a higher odds of being engaged with MyHR compared to the reference subgroup; odds ratios of less than 1 indicate the subgroup had a higher odds of not being engaged with MyHR compared to the reference subgroup.

Figure 15 The relationship between CATI survey participant's demographics, health literacy and eHealth literacy, and intention to use^ My Health Record (MyHR)
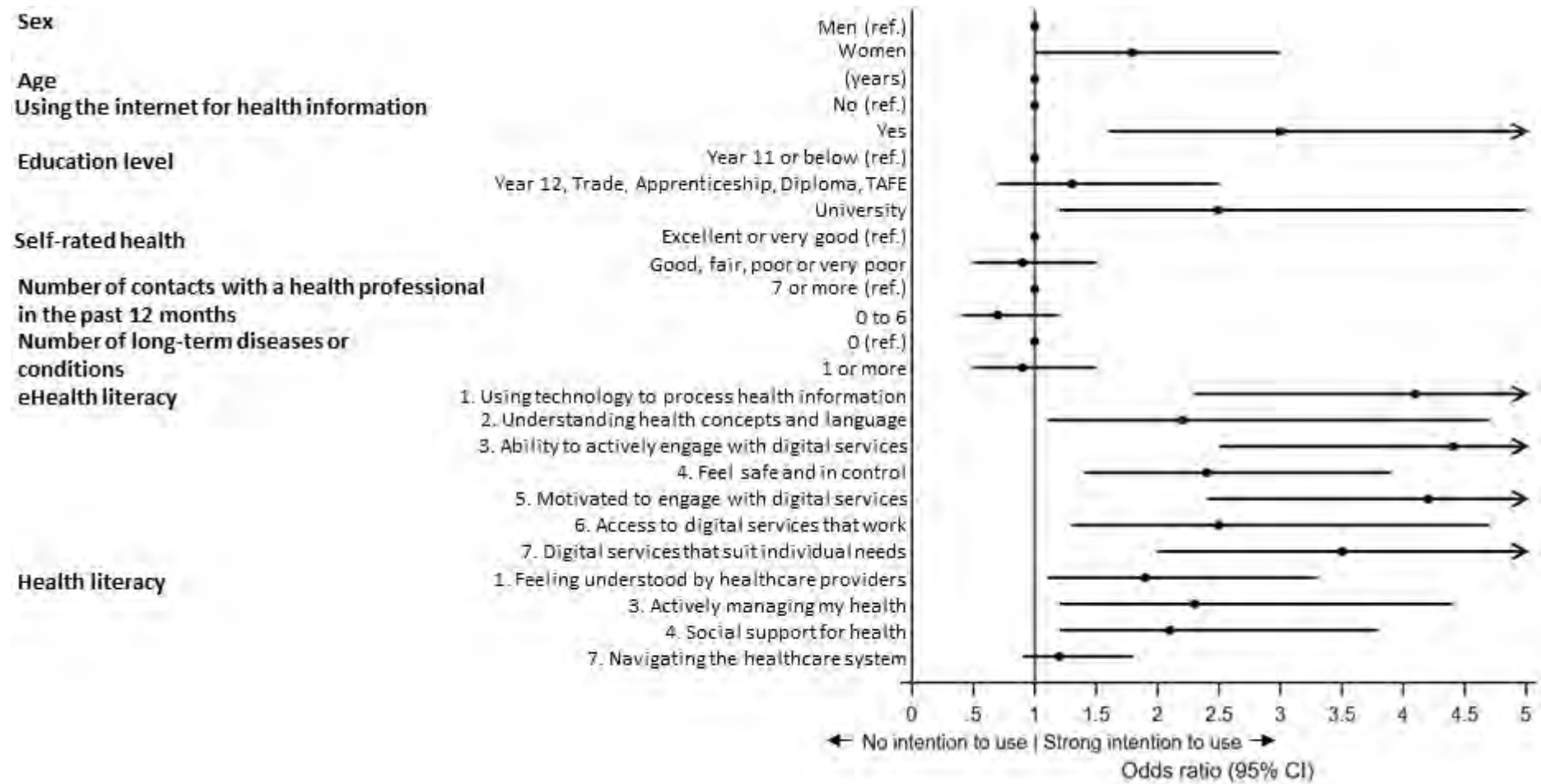
Note: ^Participants who were asked "Do you have a My Health Record"; those who responded "Yes" were then asked whether they use or intend to use their My Health Record; those who responded "No" were characterised as Not intending to use (N=86), those who responded that they currently use MyHR or intended to were characterised as Strong intention to use (N=166); ref, reference subgroup; each circle on this graph represents the odds ratio for each subgroup, compared to the reference subgroup, and the horizontal line through each circle represents the 95% confidence interval (95% CI) for each odds ratio – which represents the likely range of the odds ratio for this subgroup in the Ballarat Goldfields population. We interpret odds ratios that are equal to 1 (represented by the dark grey vertical line) or have a 95% CI that includes 1, as being not statistically significantly different to the reference subgroup; odds ratios greater than 1 indicate the subgroup had a higher odds of having a strong intention to use MyHR compared to the reference subgroup; odds ratios of less than 1 indicate the subgroup had a higher odds of not intending to use MyHR compared to the reference subgroup.

## Cluster analysis of eHLQ CATI survey data

Table 1 below and Table 32, Table 33, Table 34 and Table 35 in Appendix H show the results of the cluster analysis with a 12 cluster solution selected (see Appendix H). Each row in these tables is one of the clusters. The column labelled 'Num people' gives the number of individuals in that cluster while the other columns provide summary statistics for eHLQ and HLQ. The demographics of each cluster are presented in Appendix H Table 32. It is important to remember that the cluster analysis was based only on the scores of the 7 eHLQ scales so a cluster is a group of people who have similar scores on all 7 scales and can thus be said to have a similar eHLQ profile. The traffic light colouring has been applied to give a quick visual indication of if groups have high (dark green), medium (yellow) or low (red) average scores on the scales of the eHLQ and HLQ.

The clusters have been sorted from high to low eHealth literacy based on the average of averages within that group across all 7 eHLQ scales, therefore clusters at the top can be said to have higher eHealth literacy overall while the bottom clusters have low eHealth literacy. Figure 16 and Figure 17 show the number of CATI survey participants in each cluster, as well as the proportion of people in each cluster who have engaged with the MyHR (Figure 16) and use or intend to use the MyHR (Figure 17). There is an extremely strong trend for people with higher overall eHealth literacy to be more likely to both engage with the MyHR and to use or intend to use the MyHR.

We also examined the relationship between eHealth literacy and average number of diseases and conditions (Figure 18), the average prevalence of specific diseases and conditions in each cluster (Figure 19), and the average self-rated health in each cluster (Figure 20).

Table 1 Cluster analysis with eHealth Literacy Questionnaire (eHLQ) data

| 12 Cl # | Cl ord * | Num people | eHLQ1 Using technology to process health information | eHLQ2 Understand health concepts & language | eHLQ3 Ability to actively engage with digital services | eHLQ4 Feel safe and in control | eHLQ5 Motivated to engage with digital services | eHLQ6 Access to digital services that work | eHLQ7 Digital services that suit individual needs |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | 37 | 3.17 | 3.60 | 3.26 | 3.65 | 3.37 | 3.57 | 3.43 |
| 12 | 2 | 53 | 3.25 | 3.66 | 3.45 | 2.66 | 3.20 | 2.80 | 2.83 |
| 2 | 3 | 123 | 2.90 | 3.04 | 2.87 | 3.00 | 2.95 | 2.96 | 2.95 |
| 8 | 4 | 135 | 2.63 | 2.90 | 2.81 | 2.46 | 2.67 | 2.60 | 2.56 |
| 10 | 5 | 179 | 2.30 | 2.88 | 2.35 | 2.96 | 2.47 | 2.71 | 2.64 |
| 7 | 6 | 117 | 2.45 | 2.92 | 2.75 | 1.92 | 2.46 | 2.31 | 2.13 |
| 5 | 7 | 121 | 2.00 | 2.72 | 2.10 | 2.78 | 2.01 | 2.36 | 2.04 |
| 6 | 8 | 96 | 2.15 | 2.69 | 2.30 | 2.16 | 2.13 | 2.22 | 2.10 |
| 9 | 9 | 39 | 1.56 | 2.90 | 1.41 | 2.86 | 1.75 | 2.29 | 1.92 |
| 4 | 10 | 41 | 1.75 | 2.87 | 1.89 | 1.74 | 1.75 | 1.92 | 1.60 |
| 1 | 11 | 38 | 1.07 | 2.99 | 1.13 | 2.79 | 1.09 | 1.79 | 1.18 |
| 11 | 12 | 21 | 1.16 | 2.48 | 1.29 | 1.50 | 1.23 | 1.44 | 1.25 |

# Cluster number (as derived from cluster analysis)

* Cluster number when ordered from highest eHealth literacy to Lowest eHealth literacy.

Figure 16 Number of CATI survey participants in each of the 12 clusters, and the proportion of participants in each cluster who have engaged with My Health Record
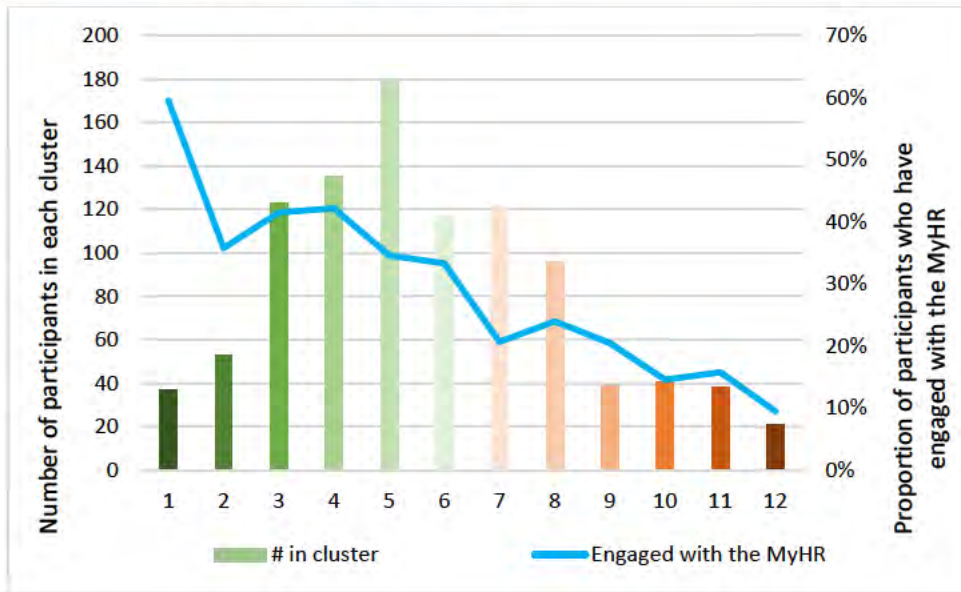


Figure 17 Number of CATI survey participants in each of the 12 clusters, and the proportion of participants in each cluster who are using, or planning to use, My Health Record
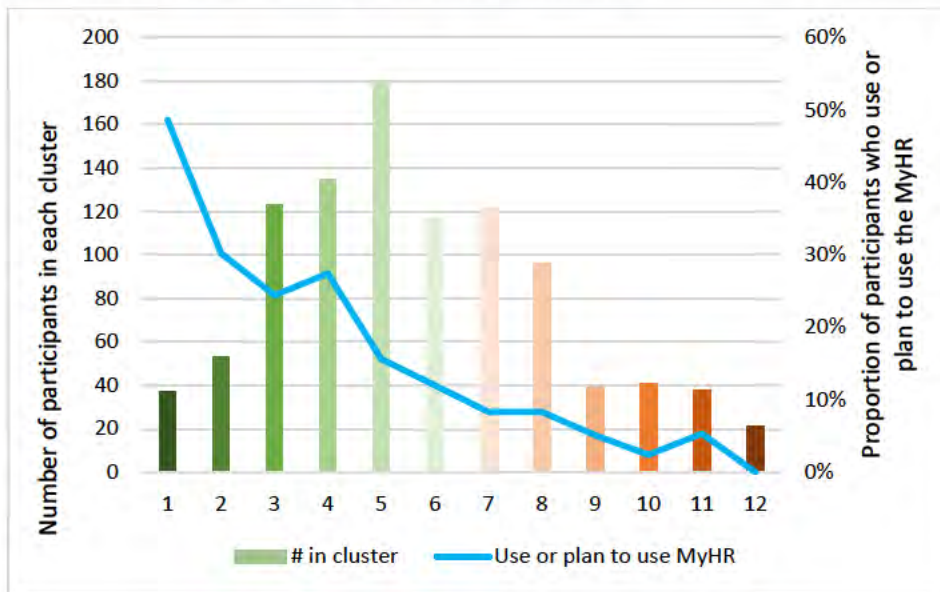
Figure 18 Number of CATI survey participants in each of the 12 clusters, and the average number of long-term diseases or conditions in each cluster
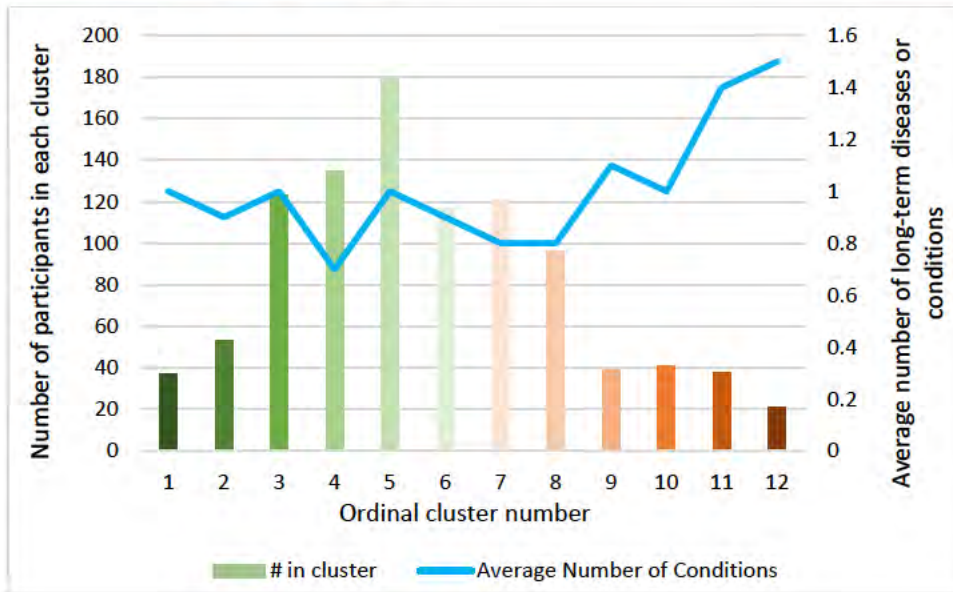


Figure 19 Proportion of CATI survey participants who reported select long term diseases and conditions in each of the 12 clusters
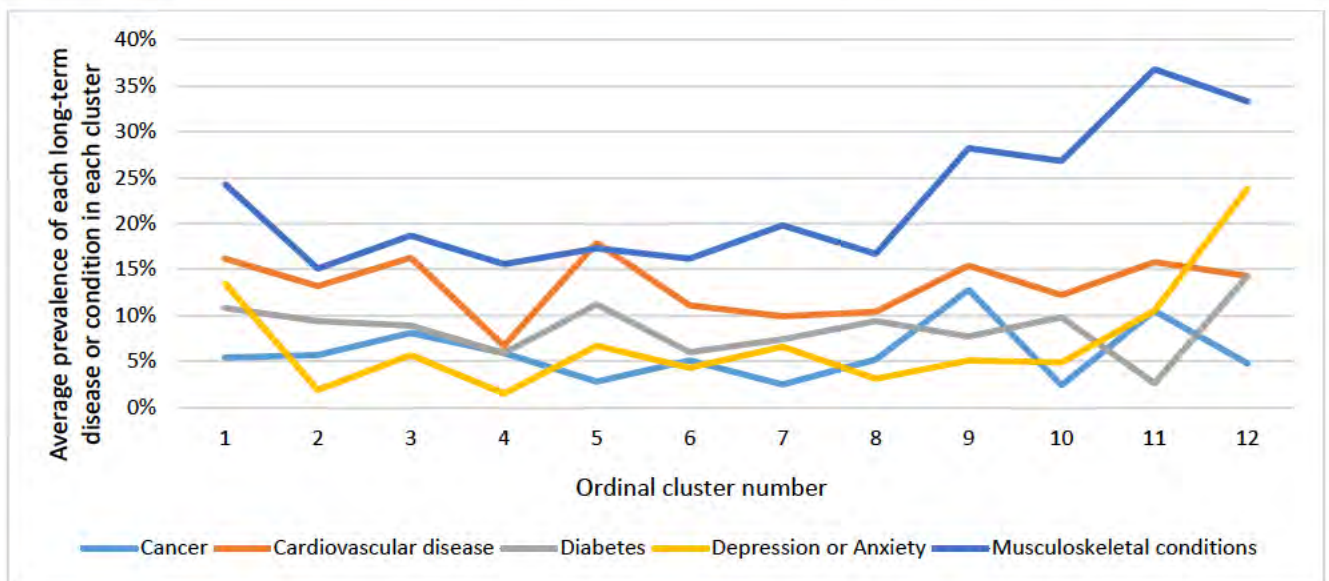


Note: Musculoskeletal condition refers to arthritis and/or chronic pain

Figure 20 Number of CATI survey participants in each of the 12 clusters, and the average self-reported health in each cluster
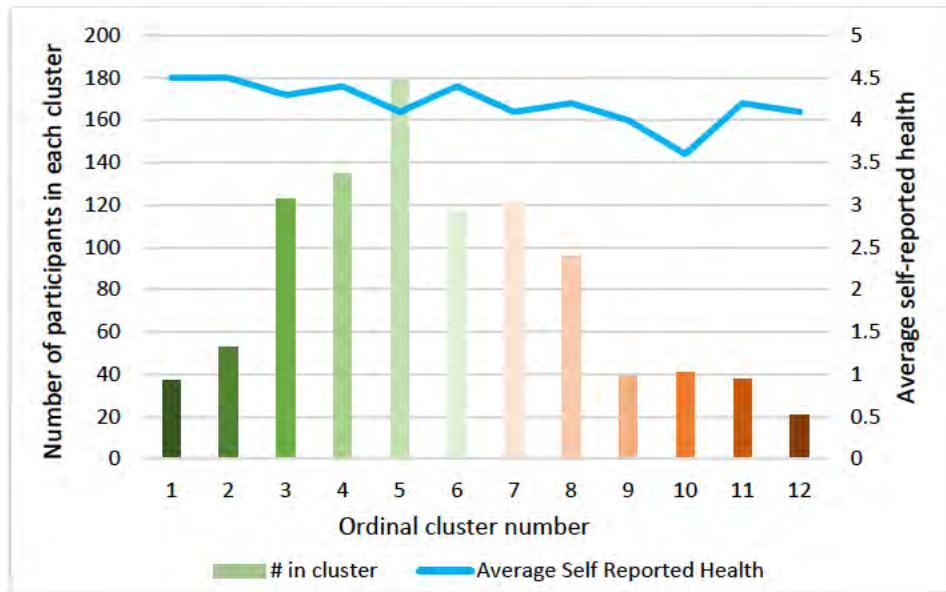
# Semi-structured interview results

From the 50 people interviewed, 15 themes were identified (see Table 2) that relate to issues or barriers when engaging with or managing health through digital technologies. The 15 themes reflected barriers at the individual level (6 themes) and at the system level (9 themes). Refer to Appendix F for more detail about the semi-structured interview results.

## Individual level barriers

A feeling of lack of control over personal health information that may be placed in eHealth records was commonly raised as a barrier to engaging in MyHR. Participants generally felt there was inadequate information online and expressed worries about who could access it and how it would be used now and in the future. Individual level barrier themes also included attitudes and preferences towards using technology, as well as skills and confidence about how in control of online health information participants felt. Participants discussed not being interested in technology in general, let alone wanting to use it to manage their health. Participants also expressed that they were unaware of eHealth and preferred receiving health information in a face-to-face consultation.

## System level barriers

System level barriers include technological issues to do with access such as Internet coverage, misleading information on the Internet, concerns about security of online health information, difficulty accessing and using government websites, inflexible technology, and lack of information about eHealth (e.g., how to use it, where to get it). System issues also included lack of access to timely and appropriate health services, previous bad experiences with health care providers or health services, and difficulties navigating the health system.

Table 2 Themes from semi-structured interviews – barriers to use of eHealth services

| Individual level themes, attributes - <u>barriers</u> |
|---|
| 1. **Lack of control over personal health information on eHealth records**<br>• Perceptions of lack of control over personal health information, don't know how to have control<br>• Concerns about the accuracy of personal health information stored in eHealth records and how to amend incorrect information<br>• Lack of privacy, don't want unauthorised people or organisations to access personal health information<br>• Unsure as to who has access to personal health information |
| 2. **Attitudes towards and skills with technology**<br>• Lack of skills, confidence and training with digital technologies |
| 3. **Not using technology to manage health**<br>• Don't want to use technology to manage health<br>• Don't have the need to use technology to manage health |
| 4. **Not interested in technology**<br>• Not interested, don't understand, don't need technology |
| 5. **Unaware of eHealth**<br>• Lack of awareness as to what eHealth is, where to access it, what it can do for individuals and how to use it |

| | |
|---|---|
| **6. Prefer face-to-face health information** | |

- Preference to speak with health professionals face-to-face rather than looking up health information online

**System level themes and attributes - <u>barriers</u>**

7. **Misleading information on the Internet**
   - Not sure which websites to trust for access to reliable health information
   - Unsure how to distinguish which symptoms relate to what health conditions through online health diagnosis

8. **Inflexible technology**
   - Technology doesn't adapt to the needs of individuals for example booking appointments online or ordering prescriptions online
   - One-size-fits-all software or websites that don't suit everyone

9. **Access (coverage issues or no Internet)**
   - Difficulty accessing the Internet and/or mobile phones due to coverage issues or slow Internet speed
   - Difficulty accessing Internet due to cost

10. **Security concerns**
    - Don't trust/believe that the software is secure
    - Concerns about hackers accessing health information

11. **Lack of access to timely and appropriate health services**
    - Long wait times
    - International doctors / lack of continuity of health care
    - Long distances to travel to access health care services

12. **Issues accessing or using government websites including the My Health Record**
    - Difficulty with password protected websites
    - Difficulty navigating complicated websites
    - Incompatible technology to use Government websites

13. **Previous bad experiences with the health care providers or health services**
    - Previous bad experiences with health care providers
    - Previous bad experiences with health system

14. **Health system**
    - Misdirected resources or misalignment of services

15. **Navigating the health system**
    - Lack of information about how to get the right services or where to go.

## Summary of Figure 21, Figure 22 and Figure 23

**Figure 21 presents a concept map of themes by individual or system level barriers and their relationships based on the application of a lower triangular matrix shown in Appendix G. The frequently arising barriers were Theme 1 Lack of control over personal health information on eHealth records with 13 of 50 people raising this as a barrier for them to engage with or manage their health through technology. Note this is an individual level barrier as compared with most frequent system level barrier, Theme 7 Misleading information on the internet where 10 of 50 people raised this as a barrier.**

**Figure 22 presents a concept map of barriers and potential strategies to address these barriers, as expressed by participants in the semi-structured interviews.**

Figure 23 presents enablers that support people to manage their health or engage with eHealth as expressed by participants in the semi-structured interviews, as well as connections to themes based on the lower triangular matrix.

The lower triangular matrix (Appendix G) indicates the relationship between multiple variables. In this case, themes that are related to each other through matching IDs to themes. For example, at the Theme 1 and Theme 2 intersection, participant IDs 26 and 28 both indicated that Theme 1 Lack of control over personal health information on eHealth records and Theme 2 Attitudes towards and skills with technology were barriers for them when engaging with or managing health through technology. Consequently, Theme 1 and Theme 2 are connected. All themes that have two or more matching IDs have been circled in the lower triangular matrix table. The only exception to this is Theme 14 and Theme 15 because the responses of so few people contributed to these themes. Connectors between themes have been shown in Figure 21.

Figure 21 Concept Map of themes by individual or system level barriers
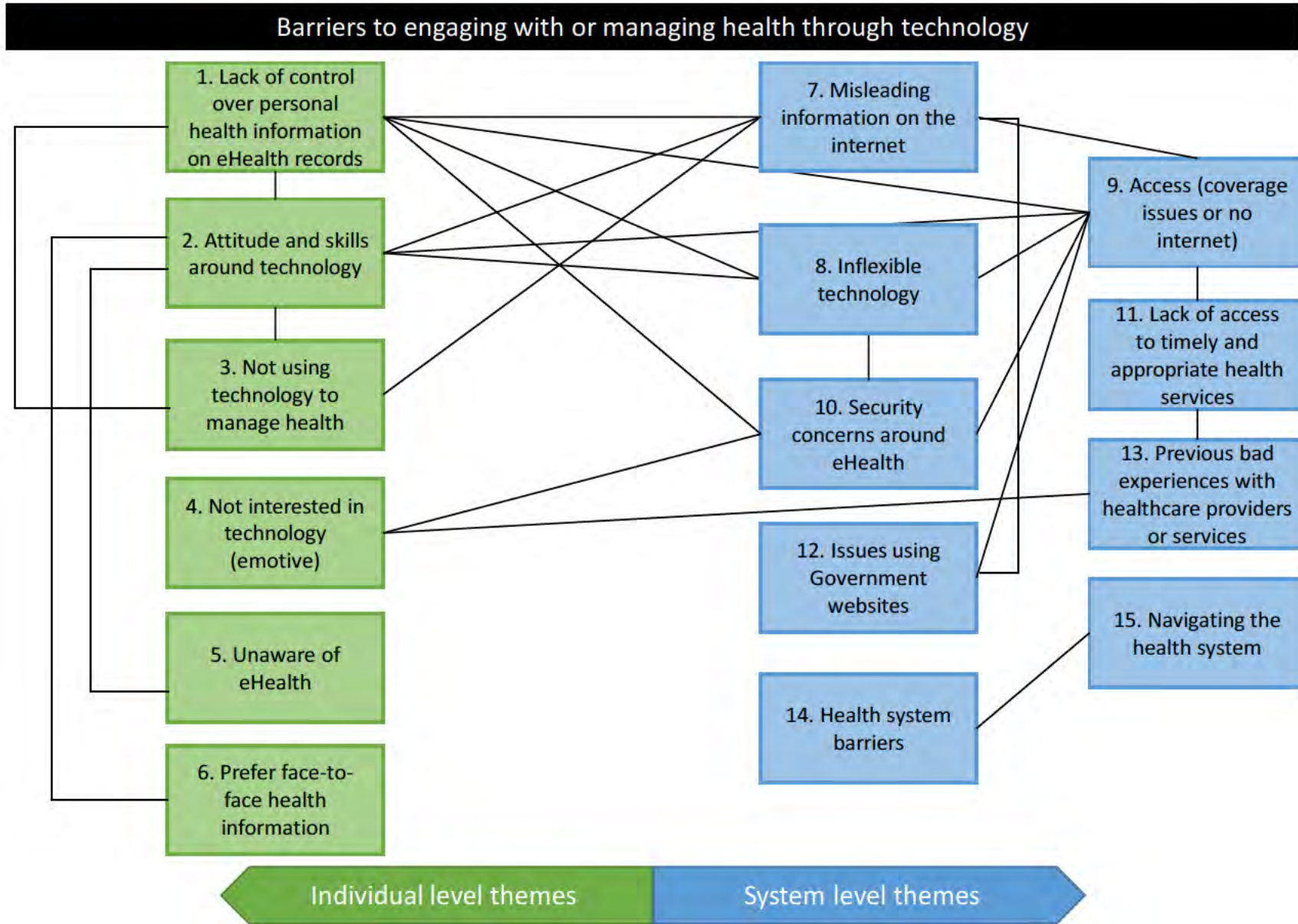
Figure 22 Concept Map of themes by individual or system level barriers and strategies to address barriers

**Barriers to engaging with or managing health through technology, and strategies to address these barriers**

1. Lack of control over personal health information on eHealth records

2. Attitude and skills around technology

3. Not using technology to manage health

4. Not interested in technology (emotive)

5. Unaware of eHealth

6. Prefer face-to-face health information

**Communication strategies:**
Facts on eHealth around security, such as who can access, how to use, and how to have control over information

**Software strategies:**
Easy passwords with prompts to access information and websites; easy to navigate websites and simple, clear information and links; get the people who will be using the software to design and test it

**Education strategies:**
Education on how to use technology (computers, iPads, smartphones, the internet); face-to-face and online tutorials on how to use websites and access good quality health information online

**Practitioner strategies:**
Facilitation of eHealth through information and educating patients or managing on their behalf

7. Misleading information on the internet

8. Inflexible technology

10. Security concerns around eHealth

12. Issues using government websites

14. Health system barriers

**Community hub** to access technology and eHealth information

9. Access (coverage issues or no internet)

11. Lack of access to timely and appropriate health services

13. Previous bad experiences with healthcare providers or services

15. Navigating the health system

Individual level themes | System level themes

## Enablers

Six themes related to enablers to improve engagement or management of health through digital technologies were extracted from the data (Table 2). Again, these were divided into enablers at the individual and system levels, with a third category of enablers for communities or families.

Enablers at the individual level were drawn from the experiences of people who already used digital technology to manage their health (e.g., through smart phone applications or online health management systems), experienced or perceived benefits of managing health information in an eHealth record, and experiences that sharing online health information is safe and necessary.

At the system level, enablers included face-to-face training on eHealth systems, simple websites, easy passwords, linked health information all in one place, as well as practitioners helping to manage individuals' health by navigating the health system for them. Some participants also discussed the value of family or friends managing their health through technology on their behalf.

The enabler at the family level reflected the concept of distributed health literacy where support for health management and decisions is distributed through a community or family and is not solely within the responsibility of one individual (12).

Managing health through technology was raised by about half the participants. Participants discussed approaches that helped them to manage their health included using technology to navigate the health system and to find health services or find reviews of health services; managing or monitoring health through smart phone applications; and using online health services for convenience. Participants also discussed the use of the Internet to search for information about symptoms prior to and after seeing a GP to improve conversations and follow-up care. They felt it empowered them to ask specific questions when seeing health care providers and / or decisions post appointment.

Table 3 Themes from semi-structured interviews – enablers to use of eHealth services

| **Individual level themes - enablers** |
|---|
| 16. **Managing health through technology** <br> • Using technology to navigate the health system to find health services or find reviews of health services <br> • Using technology to manage or monitor health such as health apps <br> • Using online health services for convenience to manage health <br> • Using the Internet to search for information on symptoms to have conversations with GP pre consultation <br> • Using the Internet to search for more information on conditions or medications post GP consultation <br> 17. **Benefits of eHealth records** <br> • Health records and information in the one place, easier for GPs and patients to manage health <br> • Easier to manage individual health or family's health through online records <br> 18. **Sharing of health data is safe** <br> • Online personal health data is secure <br> • Not worried about sharing online health information or privacy of health information <br> • 'Nothing to hide' in terms of personal health information online |
| **System level themes - enablers** |

19. **Health System supporting management of health**
    - Healthcare providers managing appointments or navigating the health system for patients
    - Specialists attending rural areas
    - Health services close by and accessible
20. **Enabling people to use technology to manage health**
    - Face-to-face training about how to use technology to manage health
    - Simple website layout, easy passwords, easy to find websites with linked information in the one spot
    - Publicity about what eHealth systems are available and how to use them

**Community / family level themes - enablers**

21. **Social support to facilitate managing health or using technology**
    - Supported health or eHealth management / engagement through friends or family in health field
    - Friends or family supporting technology use

Figure 23 Concept Map of enablers themes and strategies by individual or system level factors
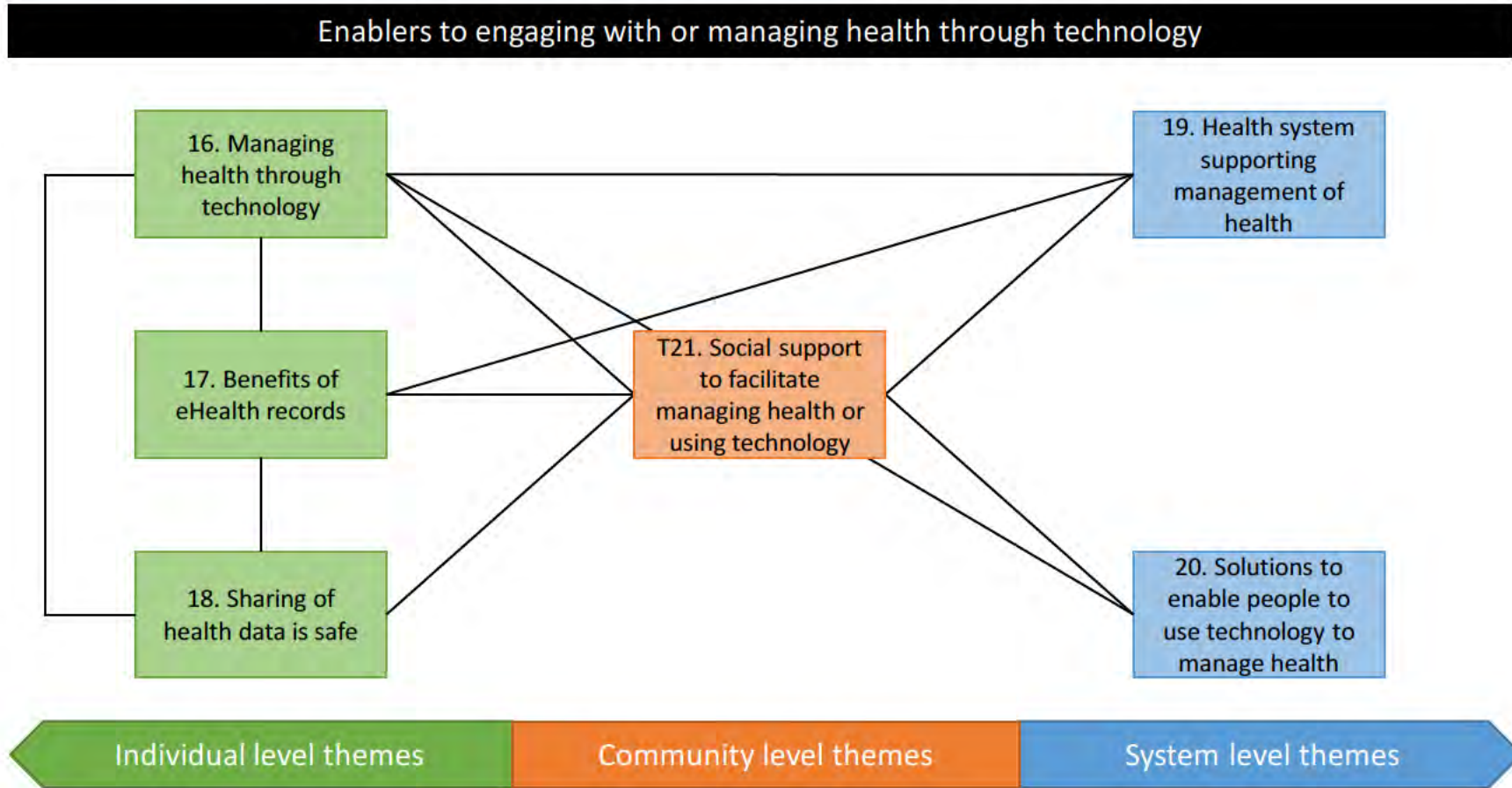


The lower triangular matrix, as described earlier in the report, indicates relationships between themes and indicates the connector lines between themes. Connectors between themes have been shown in the enablers to engaging with or managing health through technology see Appendix G.

## Unsolicited comments in semi-structured interviews about My Health Record

The semi-structured interviews did not specifically ask about MyHR. However, there were instances when MyHR was mentioned by participants. These comments, where relevant, were coded separately as barriers or enablers to using MyHR. Types of barriers and enablers were grouped together to form categories and themes. The MyHR barriers and enabler themes and select key quotes are listed along with participant IDs, and the number of participants in Appendix F.

**Themes from unsolicited comments - barriers to using MyHR**

1. Security concerns / lack of trust in government / others accessing information
2. Don't know how to use MyHR, how to access, what is stored, how to have control
3. Don't see the need for MyHR
4. Incompatible / inconsistent systems
5. Software difficult to use - passwords
6. Unable to manage records for children

**Themes from unsolicited comments - enablers to using MyHR**

1. Healthcare provider access for timely and appropriate care
2. Managing health for family
3. Nothing to hide - not concerned about security

**My Health Record barriers from unsolicited comments about MyHR**

Within the 50 semi-structured interviews, 16 participants noted barriers for them to access and use MyHR. The main barrier for these participants was the security concern (expressed as a lack of trust in government) that their information would be available to other organisations (6 participants). Four participants said that they did not know how to access or use MYHR, and did not know what is stored on MyHR or how they have control over their information.

**My Health Record enablers from unsolicited comments about MyHR**

Within the 50 semi-structured interviews, 12 participants expressed ideas to supporting the use of MyHR: 7 of these indicated that healthcare providers having access for timely and appropriate care outweighed any security concerns they had. One participant said that MyHR was a good way for her to manage the health of her elderly mother, and four participants said that they didn't mind if their health information was online or if it was hacked because they had nothing to hide and were not concerned about security.

# Workshop results

30 participants from the community took part in three co-design workshops, and 32 professionals took part in three workshops (i.e., six workshops in total). Each workshop was conducted over two hours with four held in Ballarat and two in Daylesford.

5 vignettes presented at each workshop. The aim of the workshops was to generate response ideas to the issues embodied within each vignette. In each workshop, participants were asked four key questions:

1.  Does this person seem to be like someone you know?
2.  What issues can you identify about this person's use of digital health technologies?
3.  What could be done to help improve things for this person?
4.  Given that there are many people like this in your community/ practice, what could be done to support them?

Detailed notes of all ideas were taken by two note takers and the workshops were audio recorded. The ideas were grouped into themes and subthemes (a process usually called 'coding') using NVivo. While questions 3 and 4 are the main questions about intervention ideas, within a dynamic discussion intervention ideas came up at each stage just as issues and problems people face with the use of digital health technologies could be raised during the discussion of any of the questions.

Table 4 Health professionals attending workshops

| 4th Dec - Ballarat | 5th Dec - Ballarat | 6th Dec - Daylesford | |
|---|---|---|---|
| Psychologist | Emergency Nurse | Pharmacy Clinical Advisor | |
| Prostate Cancer Specialist Nurse | Nurse - Acute & Community | Pharmacy Manager | |
| GP Practice Manager | Manager Psychologist | Nurse | |
| Surgeon | Psychiatric Nurse | Primary Care Consultant | |
| Clinical Nurse Manager | Social Worker | Primary Care Nurse | |
| Nurse | Primary Care Consultant | Practice Nurse | |
| Emergency Nurse | Pharmacy | Pharmacist | |
| Emergency Nurse | Pharmacy | Pharmacist | |
| Senior Critical Care Nurse | Physiotherapist | Speech Pathologist | |
| Pharmacist | GP | Community Health Nurse | |
| Pharmacy Manager | Podiatrist | | |
| 11 | 11 | 10 | 32 |

## Organising intervention ideas from the workshop

Across the six workshops, more than 400 statements were produced about things that would help the people portrayed in the vignettes or people with similar eHealth literacy profiles. While we refer to all of the ideas as 'intervention ideas' they can vary from small specific ideas that are best viewed as a component of a package (e.g., a doctor should offer a simple way of starting that is not threatening; e.g., offering just to upload medicines and allergies information) to more complete and self-contained intervention ideas (e.g., should engage U3A, neighbourhood houses, Men's Sheds etc to give people confidence using computers including for health). In developing implementable intervention ideas, it is often useful to group all of the ideas that focus on a particular setting or

agency together; e.g., all the ideas related to general practice. A proposed intervention may include many of the ideas from the workshop such as the content of training for GPs and their staff.

For this reason, it is important to organise the large number of ideas into groups that have a similar point of action and have the potential to be combined into an integrated intervention package. Figure 24 and Figure 25 show the results of this organising process.

Figure 24 is a mind-map that shows the final coding system. There are nine top-level categorisations that could be considered points of action or sets of actions. Any one idea from the workshops could be coded into more than one category. For example, many of the ideas related to the 'process of engaging' people in digital health technologies, including MyHR, can be effectively implemented by medical practitioners and so many of these statements were included in both groups. Where there is a strong overlap between two of the top level categories, we have shown a relationship with an arrow.

Figure 24 Mind-map of solutions from workshops

Trusted sources of info

Organizations that manage or promote digital health technologies at any level (including health services)

Expectations of what will happen

Opinion leaders

Process of introduction-publicization

Thoughts on what is already happening

Uncertain perceptions-anxieties

Understanding benefits

Managing public information and perceptions

Legal controls of access

Offer alternative options (not dependant on ICT)

Policies-laws-regulation

Balance between doing it yourself and talking to professionals

Doctors and practices facilitate

Embedding in normal-familiar to reduce anxiety about change

Practitioners make own diagnoses-fix info

Practitioners understanding of MHR

Health practitioners

Develop IT skills

Discuss benefits and risks use with family

Other family members do or assist

Individual & family

eHealth Solutions

Process of engaging

Gentle, stepwise, flexible process

Interact with provider

Interact with technology or not

Social process

Timing (Opportunism-teachable moment)

Understanding target groups

Low health literacy

Low IT capability/access

Remote

People with a disability

Mental health

Community based activities

Community support training for use of computers

Context of engagement - place, social, purpose

General community supportiveness

Features of the digital technologies

Benefits-uses clear

Easy problem solving

Experiences-synergies with other digital health tech

Functionality of technology

Information quality, fixability

User friendliness, obviousness

Control of what information is put on

Control over who accesses

During the workshops it became clear that it is possible to think about the way in which people engage with digital health technologies as a journey involving several stages, and that people could face different issues at each stage. Figure 25 shows important issues or situations that people may encounter at each stage of engaging with digital health technologies and the MyHR. These issues and situations were drawn from both the discussions in the workshops and the analysis of the semi-structured interview data presented previously. The boxes in the diagram are described as 'issues or situations' rather than 'barriers and enablers' because most of them can be either a positive or a negative and some can be a combination of both. For example, 'remoteness' or 'having a disability' can both be a challenge to accessing digital health services but the semi-structured interview data also revealed that these factors can also be powerful motivators for why people wish to engage with digital health services.

The diagram starts with a pre-existing situation such as the digital health experience, relationships with health service providers and preferred healthcare interaction, and health literacy style. It then continues onto the initial contact which includes the mode of contact then onto the introductory experiences such as news stories or public education, information etc. Following on from here is a decision about 'is it for me', which includes understanding potential benefits in a personal way or what do I need to do and can I do it. The Figure then moves to experiences of use, which encompass attributes such as is the system user friendly and successful, and finally to getting the benefit where stories of benefit are shared. In Figure 25 the journey is organized in six stages:

1. Pre-existing situation
2. Initial contact
3. Introductory experiences
4. Is it for me?
5. Experiences of use
6. Getting the benefit.

In developing interventions that are really focused on the diverse circumstances and needs of people in the community, we need to understand the different situations that people may face at each stage and we need to have strategies to respond to these situations.

Table 5 combines two methods for organising the ideas, grouping the ideas by the point of action, and grouping by stages of peoples' journeys into use of digital health technologies. No attempt has been made to fill in every cell in the table, nor is the table comprehensive. Rather, the table provides examples of the ideas that came from the workshops to illustrate the value of a strategic approach that is integrated across both different levels of action (system design, mass communication, engaging health professionals, and engaging the community) and across the different journeys that people might experience as they engage with digital health technologies.

Figure 25 Journey into engagement with digital health technologies and MyHR

| Pre-existing situation | Initial contact | Introductory experiences | Is it for me? | Experiences of use | Getting the benefit |
|---|---|---|---|---|---|
| Digital health experience | Media/mass communication | News stories | Understanding potential benefits in a personal way | User friendly and successful | |
| Health service experience/ relationships | | Public education, information | | Integrated into familiar and preferred health care | Stories of benefit are shared |
| Preferred healthcare and health literacy style | | Discussion with health provider – self management orientation | Trust the technology and process | | |
| | | Discussion with health provider – 'we can help' orientation | Trust the information and potential users | Easy problem solving | People are aware of situations where they benefit |
| Access to technology | Health professional/service | | | Able to check the accuracy of data and get errors fixed | |
| IT interest and ability | | Introduced in health education program | What do I need to do and can I do it? | | |
| | | General discussions with friends or family | | Convenience for things that are important to me | |
| Scepticism/trust in government and other agencies | | Practical exploration with friends or families in the context of a meaningful activity | Will it affect my relationship with my doctor or other health provider? | | |
| Particular groups (e.g. aged, people with a disability, remote) | Social setting | | | Informed when a provider uses the data | |
| | | Connection with familiar use of digital health technology | | | |

Table 5 Example intervention ideas by stages

| Pre-existing situation | Initial contact | Introductory experiences | Is it for me? | Experiences of use | Getting the benefit |
|---|---|---|---|---|---|
| *Design/characteristics of the technology and system:* | | | | | |
| • System needs to be very simple to be accessible to people with very different e Health Literacy profiles<br>• System needs to recognize that many people have poor internet access and may prefer other platforms | • Need to recognise that people may be stimulated to interact with MyHR through diverse means and that the first interaction should convey a simple understanding of benefits and processes | • [Exploration mode with dummy data that could be used by consumers or in groups to explore how the system works and potential benefits]<br>• Links or interfaces with government operated data systems that people are familiar with | • Very simple front-end explanation of potential benefits and options of levels of engagement (from completely provider driven to extensively controlled and used by the consumer themselves)<br>• Easy access to Frequently Asked Questions and to other means to ask questions | • Very simple and rapid problem solving including an option of contacting a person | • N/A |
| *Media, mass communication:* | | | | | |
| • Need to recognize pre-existing scepticism that some people have about governments holding data.<br>• Need strategies to overcome perceptions that digital equals self-service equals a loss of personal service | • Information services need to provide phone numbers for questions not just websites | • Encourage discussion with healthcare providers<br>• Present options for types and levels of involvement | • Very clear information through multiple sources on provisions for data security and accuracy; preservation of normal interactions with providers; and benefits | • N/A | • Concrete stories of consumers receive a benefit to health outcomes or convenience should be shared |
| *Health providers:* | | | | | |
| • Health providers can help reduce fear that MyHR might undermine the provision of personal care<br>• Health professionals can reassure people who do not want to be pre-judged that they will make their own assessment | • Recognize that diverse health providers could be the first point of contact with MyHR. Need to provide training and resources to a range of providers including GPs, pharmacists and others on how to introduce | • Doctors, practice staff and other providers trained in ways of sensitively and gently introducing MyHR<br>• Provide opportunities to explore at doctors surgeries and pharmacies | • Health providers trained and provided with materials to explain a range of potential uses from an in-the-background extension of normal care to a tool that can help with a range of circumstances like getting medicines, receiving other services and travel<br>• Assist consumers to check accuracy of information | • Health providers explain what data is uploaded and negotiate what consumer does and doesn't want uploaded<br>• Present MyHR as an extension of normal care not a replacement<br>• Tell patients if they have accessed data | • People need to be notified by health providers when the health provider has accessed the information and how it was beneficial |

| | MyHR accurately and gently | | | and explain that they will make their own assessment | |
|---|---|---|---|---|---|
| *Community-based approaches:* | | | | | |
| • Many community organizations have an important role in building community familiarity and confidence in interacting with computers and digital technologies, including government systems like MyHR | • Provide community organizations with accurate information and resources to discuss MyHR | • Provide opportunities to explore MyHR in public facilities like libraries and neighbourhood houses. Provide training to staff. | • Provide community groups with accurate information on management of risks, benefits and how to engage in a non-threatening, non-burdensome way | • [Provide community groups with resources that encourage and guide them in discussing experiences of use of MyHR] | • Community groups can encourage each other by sharing their experiences including experiences of benefit |

**Issues arising from workshops that require an integrated approach**

Thus far, the analysis and presentation of intervention ideas from the workshops have focused on organising the ideas in terms of the main point of action. There were, however, issues that were repeatedly identified and linked with multiple possible points of action (i.e. an integrated, systemic approach is indicated). Three of these key issues were:

4. The need to assist people to understand potential benefits, the relevance of possible benefits and to weigh benefits against possible risks
5. The need to address a range of concerns about how MyHR and other development in digital health technologies may impact on familiar and valued processes of care (especially relationships with GPs)
6. The fact that some of the people who might experience the greatest challenges engaging with MyHR may also be the people who have greatest need of the support that it offers and greatest capacity to benefit.

This section discusses these three issues and the recommendations section seeks to piece together the various ideas proposed in the workshops to suggest features of an integrated approach to each issue. Intervention ideas from the workshops about these three issues were presented in the Category 1 recommendations).

## 1. Assist people to understand potential benefits, the relevance of possible benefits and to weigh benefits against possible risks

Across all of the groups, the need to clearly identify the benefits of participation in MyHR was the most commonly identified need. Group members identified this need not only for the people in the vignettes but, in many cases, for themselves as well. Potential benefits that were discussed can be grouped into a several categories:

- Safety benefits for emergency situations
- Convenience and reduced waiting times in emergency departments
- Healthcare while traveling
- Reduced paperwork when using new services
- Reduced need to explain things to new doctors or services.

In addition, participants raised the possibility of other benefits if the system can be integrated with other systems such as:

- pharmacy systems to streamline ordering of medications and to support special arrangements for provision of medications (e.g., provision of multiple refills at one time)
- systems for making medical appointments.

While an opt-out system may lead to greater participation overall, one effect has been to focus the debate on 'why should I consider opting out?' which leads to a focus on risks as has been seen in the public debate. An opt-in system may have led to a greater focus in the public debate on 'why should I opt in?' (i.e., a focus on the potential benefits of MyHR).

Many participants in the workshops were unaware of what the benefits could be and emphasised that the benefits need to be explained in very concrete ways, illustrated by stories of real people and circumstances. In addition, several people requested a tool that would enable them to easily see the possible benefits and risks.

## 2. Address concerns about the potential impact of developments in digital health on familiar and valued processes of care

While there were many anxieties about MyHR identified in the workshops (security, accuracy, appropriate use) there was an additional concern that underpinned many of the issues discussed in the workshops, this was the concern that MyHR may be forcing people to engage in a new process of 'self-service' care that may undermine the personal care that they are used to. Analogies were made with self-service petrol stations and supermarkets. This was also expressed as a concern that in order to effectively interact with the healthcare system people will need to learn computer skills and organise computer access or else they will be at a disadvantage. Many participants were unaware that the system could be used, and provide benefits to them, without them needing to engage with the technology at all just by discussing with the doctor what would be uploaded.

Several participants also identified that they themselves believed, or thought that many people believed, that many of the functions of MyHR already occurred. For example, that hospitals could already easily get access to the medications that their doctor had prescribed. For these people the relatively passive components of MyHR were thought to be already occurring while their perception of the active features of MyHR was seen as frightening or burdensome and a possible intrusion into the face-to-face, personal care that they prefer.

Several doctors and practice staff who attended the workshops reported on how they have introduced MyHR in a very gentle and minimal way: 'would you mind if I upload your medications and allergies just in case you have to go to a hospital or emergency department at some time?'

There is a need for processes and practices that help people to think of MyHR as an extension of their personal care and of the doctor's steering of their care, rather than as a burdensome alternative that puts the face-to-face care that they value at risk.

## 3. Providing opportunities to people with substantial barriers to engagement who also have high capacity to benefit

In several of the workshop groups, an interesting process occurred while discussing the fourth and fifth vignettes, which related to clusters of people with generally low eHealth literacy. The fourth vignette presented a case of a lady who just wanted her GP to manage her care. The fifth vignette described someone who has experienced a loss of social supports and has relatively low confidence in using IT but who is still trying to care for himself despite the sadness and loneliness of his life.

In most cases, the participants' discussion of the vignettes opened with the view that these people should not be pressured to participate in something that they are not interested in. However, as the discussion proceeded, someone usually pointed out that these people may also benefit from MyHR because they may have difficulty explaining all of their conditions and treatment to other health providers in emergency situations – MyHR can reduce the challenges of remembering and explaining, and can potentially improve the safety and quality of the care that they receive.

For people like these, there is a need to balance two imperatives, and their situation can be looked at in two ways. One way of looking at it is that people should not be pressured into engaging with a system that they are not interested in or that they find intimidating. The other way is that we should not just assume that someone is not interested or incapable of engaging (because of age,

circumstances or some other characteristic) and thus deny them important benefits that others in the community receive.

In addition, many barriers to engagement are real and practical such as poor internet connections, low levels of computer skills, and the unaffordability of technology. These can be exacerbated for people who live in remote areas and people who have difficulty travelling. Enabling all people, including those most in need, to participate in and benefit from digital health technologies requires a range of highly flexible approaches.

# Limitations of the study

There are several limitations to this study that may impact on the generalisability of the findings. The presence of MyHR in the media around the time of data collection. From October to December 2018, there was substantial media coverage about MyHR due to the opening and then extension of the MyHR opt-out period between July 2018 and January 2019. It is therefore possible that, while MyHR was not mentioned until the end of the CATI survey, and was not initiated in discussions by interviewers within the semi-structured interviews, that participants were thinking about the MyHR when they responded to questions pertaining to their experiences with health technologies. This may mean that knowledge about whether or not a participant had a MyHR was higher in this sample than it may have been at a different time, and may have altered the association between a participant's eHealth literacy score and their MyHR knowledge, uptake and usage.

Our initial sample of 1000 participants for the CATI survey, which was used to draw a sample for the subsequent semi-structured interviews and workshops, was limited to adults who had a landline or mobile telephone number registered to a postcode in the Ballarat Goldfields region of the WVPHN. Consequently, individuals who do not have access to a phone, who lived in the region but had a phone registered to a different postcode, or have an unlisted number, were not eligible to be sampled. Such individuals may have different experiences with health technologies and services to the eligible population, and these experiences are not captured in our data.

It was not possible to directly compare the population of the Ballarat Goldfields region and the CATI survey sample; as such, comparisons were made to the entire WVPHN region. We therefore make the assumption that the Ballarat region population and the WVPHN is not dissimilar.

There were some differences between the demographics profile of the CATI survey sample and the demographics profile of all residents of the WVPHN catchment region (the target population of the study Table 16). While the CATI survey sample had a similar proportion of people who identified as Aboriginal or Torres Strait Islander and a similar proportion of women (54% compared to 51%), it also had a substantially higher proportion of those aged 55 to 70 years (39% compared to 19%) and aged over 70 years (41% compared to 13%). The impact of this discrepancy is that our findings are not generalisable to the entire general adult population in the Ballarat Goldfields region of the WVPHN due to lower representation from younger people (aged less than 55 years). It is important to note that this study sought to understand people's experiences, limitations and suggestions for improvement regarding eHealth services in the region. Given that most chronic diseases and conditions occur in mid to late adulthood, the study was strongly represented by the highest user groups. The CATI survey sample also has a higher proportion of individuals with a tertiary education compared with residents of the study region (31% compared to 14%). The comparator demographics for the study region are calculated for that population, which is primarily aged less than 55 years, so it is unclear if the distribution of highest educational attainment in the CATI survey sample is representative of members of the WVPHN region who are over 55 years.

Notwithstanding these caveats, the main data synthesis process for this study was the data derived from the co-design workshops. The workshops were informed by vignettes derived from cluster analysis. The cluster analysis segments the population into subgroups based on patterns of eHealth literacy and associated demographic factors. This process enabled the co-design workshops to

provide feedback on a wide range of people across the community, which helped to increase the representation of disadvantaged groups.

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# Appendix A Computer Assisted Telephone interview (CATI)

Participant ID: _____

## Understanding Digital Health and Health Information Questionnaire

Thank you for taking the time to complete this questionnaire.

We hope the results will help improve the way care is provided to people in our community.

We want to learn from you about how you find, understand and use health information, how you manage your health, and how you communicate with doctors and healthcare providers using digital technology.

### Definitions

**Health professionals/ Healthcare providers**
People who provide health advice and treatments to you. They may include doctors, nurses, dentists, dieticians, physiotherapists, nurses, psychologists or any other health workers.

**Digital health technology/ Health technology services**
Electronic devices or online services you use to find, show, record or manage health information, or to contact health providers. They may include mobile phones, computers, tablets, monitoring machines, smart watches, electronic health records, doctor's websites, and other health websites.

The following questions are about the use of electronic devices and services as part of your healthcare. When answering these questions, we would like you to think back over the past few months.

Please indicate how strongly you disagree or agree with each of the following statements.

*Please check only one box per statement by crossing it like this:* ☒

| Section 1. | Strongly Disagree | Disagree | Agree | Strongly Agree |
|---|---|---|---|---|
| 1 | I am sure that my health data are being used only by those who are supposed to use it | | ☐ | ☐ | ☐ |
| 2 | Technology makes me feel actively involved with my health | ☐ | ☐ | ☐ | ☐ |
| 3 | Information about my health is always available to those who need it | | ☐ | ☐ | ☐ |
| 4 | I know how to use technology to get the health information I need | ☐ | | ☐ | ☐ |
| 5 | The knowledge I have helps me to have good conversations about health | | ☐ | ☐ | ☐ |
| 6 | I know how to make technology work for me | ☐ | ☐ | ☐ | ☐ |
| 7 | I use technology to find information about health | | ☐ | ☐ | ☐ |
| 8 | I can enter data into health technology systems | ☐ | ☐ | ☐ | ☐ |
| 9 | My healthcare providers deliver services that I can access through technology | | ☐ | ☐ | ☐ |
| 10 | My electronic healthcare data are being stored safely | ☐ | ☐ | ☐ | ☐ |
| 11 | I often use technology to understand health problems | | ☐ | ☐ | ☐ |
| 12 | I have enough information to take part in conversations about my health | ☐ | ☐ | ☐ | ☐ |
| 13 | Technology helps me decide what health care is best for me | | ☐ | ☐ | ☐ |
| 14 | I have a clear understanding of how healthcare providers use my data | ☐ | ☐ | ☐ | ☐ |
| 15 | I understand medical results about me | | ☐ | ☐ | ☐ |
| 16 | My health data are available to me wherever I am | ☐ | ☐ | ☐ | ☐ |
| 17 | I quickly learn how to find my way around new technology | | ☐ | ☐ | ☐ |

eHLB Questionnaire – version 2 25.09.18                    The eHealth Literacy Questionnaire (eHLQ) ©2016

|  |  | Strongly Disagree | Disagree | Agree | Strongly Agree |
|---|---|---|---|---|---|
| 18 | I find that health technology services adapt to my skills | ☐ | ☐ | ☐ | ☐ |
| 19 | I find technology helps me take care of my health | | | | |
| 20 | I use technology to share information about my health | ☐ | ☐ | ☐ | ☐ |
| 21 | Overall, I understand how my body works | | ☐ | ☐ | ☐ |
| 22 | I am sure that only authorised people can access my health data | ☐ | ☐ | ☐ | ☐ |
| 23 | All the health technology I use works together | | ☐ | ☐ | ☐ |
| 24 | I find I get better services from my health professionals when I use technology | ☐ | ☐ | ☐ | ☐ |
| 25 | I use technology to organise my health information | | ☐ | ☐ | ☐ |
| 26 | I use measurements about my body to help me understand my health | ☐ | ☐ | ☐ | ☐ |
| 27 | Technology improves my communication with health professionals | | ☐ | ☐ | ☐ |
| 28 | I find health technology services seem to adapt to my individual needs | ☐ | ☐ | ☐ | ☐ |
| 29 | Most of my healthcare providers can be accessed through technology | | ☐ | ☐ | ☐ |
| 30 | I am confident that healthcare providers use my data appropriately | ☐ | ☐ | ☐ | ☐ |
| 31 | I find health technology services are provided to me in a way that suits me | | ☐ | ☐ | ☐ |
| 32 | I easily learn to use new health technologies | ☐ | ☐ | ☐ | ☐ |
| 33 | Health technology services provide me with easy ways to get what I need | | ☐ | ☐ | ☐ |
| 34 | I have access to health technology that works | ☐ | ☐ | ☐ | ☐ |
| 35 | I find technology useful for monitoring my health | | ☐ | ☐ | ☐ |

*Please continue to the next page*

HLB Questionnaire – version 2 25.09.18          The eHealth Literacy Questionnaire (eHLQ) ©2016

*Please check only one box per statement by crossing it like this:* ☒

| Section 2. | Strongly Disagree | Disagree | Agree | Strongly Agree |
|---|---|---|---|---|
| 1  I have at least one healthcare provider who knows me well | ☐ | ☐ | ☐ | ☐ |
| 2  I set my own goals about health and fitness | | ☐ | ☐ | ☐ |
| 3  If I need help, I have plenty of people I can rely on | ☐ | ☐ | ☐ | ☐ |
| 4  I have the healthcare providers I need to help me work out what I need to do | | ☐ | ☐ | ☐ |
| 5  Despite other things in my life, I make time to be healthy | ☐ | ☐ | ☐ | ☐ |
| 6  I can rely on at least one healthcare provider | | ☐ | ☐ | ☐ |
| 7  When I feel ill, the people around me really understand what I am going through | ☐ | ☐ | ☐ | ☐ |
| 8  I have strong support from family or friends | | ☐ | ☐ | ☐ |
| 9  I spend quite a lot of time actively managing my health | ☐ | ☐ | ☐ | ☐ |
| 10  I have at least one healthcare provider I can discuss my health problems with | | ☐ | ☐ | ☐ |
| 11  I have at least one person who can come to medical appointments with me | ☐ | ☐ | ☐ | ☐ |
| 12  I make plans for what I need to do to be healthy | | ☐ | ☐ | ☐ |
| 13  I can get access to several people who understand and support me | ☐ | ☐ | ☐ | ☐ |
| 14  There are things that I do regularly to make myself more healthy | | ☐ | ☐ | ☐ |

*Please continue to the next page*

*Please check only one box per statement by crossing it like this:* ☒

| Section 3. | Cannot do or always difficult | Usually difficult | Sometimes difficult | Usually easy | Always easy |
|---|:---:|:---:|:---:|:---:|:---:|
| 1 Find the right health care | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2 Get to see the healthcare providers you need to | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3 Decide which healthcare provider you need to see | ☐ | ☐ | ☐ | ☐ | ☐ |
| 4 Make sure you find the right place to get the health care you need | ☐ | ☐ | ☐ | ☐ | ☐ |
| 5 Find out which healthcare services you are entitled to | ☐ | ☐ | ☐ | ☐ | ☐ |
| 6 Work out what the best care is for you | ☐ | ☐ | ☐ | ☐ | ☐ |

## Some information about you

1. What is your year of birth? _____

2. What is your gender? ☐ Female ☐ Male ☐ Other

3. What is your post code? _____

4. Do you speak English at home? ☐ Yes ☐ No

5. Do you identify as Aboriginal or Torres Strait Islander?

   ☐ Yes ☐ No

6. What is the *highest* level of education you have attained? (Check only one box)

   ☐ Did not finish primary school

   ☐ Completed primary school

   ☐ Completed Year 10

   ☐ Completed Year 12

   ☐ Completed a trade certificate, apprenticeship, Diploma or college/TAFE certificate

   ☐ Completed a university degree or above

*Please continue to the next page*

7. Overall, how would you rate your health during *the past 4 weeks*? (Check only one box)

☐ Excellent

☐ Very good

☐ Good

☐ Fair

☐ Poor

☐ Very poor

8. Do you have a long-standing illness or disability? (Check all boxes that apply)

☐ Arthritis

☐ Asthma

☐ Cancer

☐ Cardiovascular disease / heart problems

☐ Diabetes

☐ Anxiety

☐ Depression

☐ Chronic pain

☐ Other (please specify)

☐ None

9. *Within the past 12 months*, have you used the Internet to search for health-related information? This could include information on an injury, a disease, illness, nutrition, improving health etc.

☐ Yes, once a week or more often

☐ Yes, several times a month

☐ Yes, approximately once a month

☐ Yes, approximately once every two months

☐ Yes, a few times within the past year

☐ No, never

☐ Don't know / Not applicable

*Please continue to the next page*

10.     If *Yes* to Q9: How do you tend to access online health services? (Check all boxes that apply)

☐   Smartphone

☐   Tablet or iPad

☐   Computer

☐   Other (please specify)_____

11.     If *No* to Q9: Why don't you use online health services? (Check all boxes that apply)

☐   I don't know how to

☐   I don't know what's out there

☐   I don't want to

☐   I'm not sure I'd get what I need

☐   I can't afford it

☐   I don't have the right technology (equipment)

☐   I'm not confident enough to use computers/smartphones/iPads

☐   I'm not confident I'd be able to understand the information by myself

☐   I prefer face-to-face interaction with health services

☐   Other (please specify):_____

12.     *Within the past 12 months*, how frequently have you consulted a health professional? Please include consultations as a carer if relevant.

Remember that health professionals are people who provide health advice and treatments to you. They may include doctors, nurses, dentists, dieticians, physiotherapists, nurses, psychologists or any other health workers.

Have you consulted a health professional…

☐   More than 12 times in the past year (that is, more than once per month)

☐   About 7 to 12 times

☐   About 2 to 6 times

☐   About 1 time

☐   Not at all in the past year

If you have consulted a health professional, what type of professional are they:

_____

13.  Do you have a My Health Record?

☐ Yes     ☐ No     ☐ Not sure

14.  If *Yes* to Q13: Do you use your My Health Record?

☐ Yes     ☐ No

15.  If *No* to Q14: Do you intend to use your My Health Record?

☐ Yes     ☐ No     ☐ Not sure

16.  Do you have any final comments about using digital health technologies?

_____

_____

Note: If respondent asks for more information about My Health Record, refer them to MyHR HelpLine on 1800 723 471 or website www.myhealthrecord.gov.au

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**Future research**

We will be doing more research to understand people's individual experiences when using digital technology for health. Are you interested in taking part in future research activities about this topic?

I agree to be contacted to discuss taking part in a 30-minute telephone interview to talk about my experience of using technology for health.

Yes          No

I agree to be contacted to discuss attending a 2-hour workshop with other community members to discuss ideas to improve services related to digital technologies.

Yes          No

If you agree to be contacted for either of the above activities, please provide your name, telephone number and/or email address:

Note: We will seek to include a wide range of people (up to 80) in the interviews and workshops, this includes across men and women, young and old, well and unwell and other information collected in this survey. If you consent to undertake further research, you may or may not be contacted. **Please advise your preferred day / time to be contacted.**

Name: _____

Phone number: _____

Email address: _____

Thank you for completing this questionnaire.
We appreciate you giving your time to support this research.

eHLB Questionnaire – version 2 25.09.18         The eHealth Literacy Questionnaire (eHLQ) ©2016

# Appendix B Semi-structured interview schedule

Hello [client name]. My name is [your name] and I am a researcher from Deakin University. I'm calling to interview you about the recent telephone survey you completed where you kindly gave your name and phone number so that I could give you this call. Are you free now to talk or would you prefer I call you back at a specific time?

Your decision to participate or not to participate WILL NOT affect your relationship with any health services you attend or Deakin University in any way. Your participation in the interview is voluntary. If you agree to take part in an interview, you have the right to withdraw from the interview at any time, without giving any reason. You can withdraw during the two weeks after the interview date by contacting Crystal McPhee on 9244 6292. If you have any complaints or questions you can contact the Research Integrity department at Deakin University on 9251 7129.

*Purpose:* the main purpose of these semi-structured interviews is to explore the narratives behind why participants have answered questions from the survey in the way that they did. This information will be used to provide context for vignette development.

The information you give will contribute to the work we are doing in understanding healthcare, including your thoughts about digital technologies. Topics include; how you use digital health information, how you engage with digital services and how you access digital health services.

It will take us about 15-30 minutes to talk about the questions. There are no right or wrong answers, so please answer the questions based on your own experiences. If you need to stop at any time, just let me know.

If you feel distressed free counselling services such as lifeline are available. You can contact them on 13 11 14.

You will be given the opportunity at the end of the interview to be included in the prize draw to win a $50 supermarket voucher.

Do you understand the participant information that has been read to you?  Yes > continue.      No > ask participant what they wish to have clarified.

Do you consent to being recorded for accuracy and writing up your responses? You will not be identified in any way.  Yes > continue.    No > discontinue

Finally do you consent to participate in the interview? Yes > continue.      No > discontinue. (thank the participant for their time and advise the conclusion of the interview).


Before we begin I will give you the definition of digital health technology

   **Definition - digital health technology/ Health technology services**

Electronic devices or online services you use to find, show, record or manage health information, or to contact health providers. They may include mobile phones, computers, tablets, monitoring machines, smart watches, electronic health records, doctor's websites, and other health websites

Electronic devices or online services you use to find, show, record or manage health information, or to contact health providers. They may include mobile phones, computers, tablets, monitoring machines, smart watches, electronic health records, doctor's websites, and other health websites

**1. Using technology to process health information**

Be able to use technologies to read, write and remember, apply basic numerical concepts, and understand context-specific language (e.g., health, IT or English) as well as critically appraise information.

- *Do you use technology to find information about health – tell me about why or why not.*
- *What difficulties do you have using technology for your health information?*
- *What might help you use technology for your health information?*

*I use technology to find information about health*

*I often use technology to understand health problems*

*Technology helps me decide what health care is best for me*

*I use technology to share information about my health*

*I use technology to organise my health information*

**2. Understanding of health concepts and language**

Know about basic physiological functions and own current health status. Aware of risk factors and how to avoid them or reduce their influence on own health.

- *Do you feel you have enough knowledge to have good conversations about health –why or why not do you think this is the case*
- *What difficulties do you have understanding health information such as risk factors and their influence on your own health?*
- *What might help you understand health information such as risk factors and their influence on your own health?*

*The knowledge I have helps me to have good conversations about health*

*I have enough information to take part in conversations about my health*

*I understand medical results about me*

*Overall, I understand how my body works*

*I use measurements about my body to help me understand my health*

**3. Ability to actively engage with digital services**

Being comfortable using digital services for handling information.

- *Do you feel that you know how to use technology to get the health information you need*
- *What would help you to feel more comfortable with using digital health services?*

*I know how to use technology to get the health information I need*

*I know how to make technology work for me*

*I can enter data into health technology systems*

*I quickly learn how to find my way around new technology*

*I easily learn to use new health technologies*

### *4. Feel safe and in control*

Feel that they have the ownership of personal data stored in the systems and that the data are safe and can be accessed only by people to whom they are relevant (own doctor/nurse etc.).

- ***Do you feel you that you have ownership and control of personal data stored with health systems and health professionals?***
- ***What would help you to feel more comfortable with this?***

*I am sure that my health data are being used only by those who are supposed to use it*

*My electronic healthcare data are being stored safely*

*I have a clear understanding of how healthcare providers use my data*

*I am sure that only authorised people can access my health data*

*I am confident that healthcare providers use my data appropriately*

### 5. Motivated to engage with digital services

Feel that engaging in the use of digital services will be useful for them in managing their health.

- ***Do you feel actively involved in your health through technology? Why or why not?***
- ***Do you feel technology helps you to take care of your health? Why or why not?***
- ***What would help you to engage with digital services to manage your health?***

*Technology makes me feel actively involved with my health*
*I find technology helps me to take care of my health*
*I find I get better services from my health professionals when I use technology*
*Technology improves my communication with health professionals*
*I find technology useful for monitoring my health*

### 6. Access to digital services that work

Have access to digital services that the users trust to be working when they need it and as they expect it to work.

- ***Do you have difficulty accessing*** digital services when and where you need them? Why? ***What would help you to do this?***
- ***What types of digital services do you access? Do you*** trust that these digital services will be working when you need them in the way that you expect?

*Information about my health is always available to those who need it*

*My healthcare providers deliver services that I can access through technology*

*My health data are available to me wherever I am*

*All the health technology I use works together*

*Most of my healthcare providers can be accessed through technology*

*I have access to health technology that works*

**7. Digital services that suit individual needs**

Have access to digital services that suit the specific needs and preferences of the users. This includes responsive features of both IT and the healthcare system (including carers) as well as adaptation of devices and interfaces to be used by people with physical and mental disabilities.

- ***Do you think eHealth systems adapt to your individual needs and skills? Why or why not and how could they do this better?***
- ***Do you have access to** digital services that suit your specific needs and preferences? **What has helped you to have access?***
- ***What makes it difficult for you to accessing** digital services that suit your specific needs and preferences? **What would help you to do this?***

*I find that eHealth systems adapt to my skills*

*I find eHealth systems seem to adapt to my individual needs*

*I find eHealth systems are provided to me in a way that suits me*

*eHealth systems provide me with easy ways to get what I need*

Is there anything else you would like to add about e health or digital health?

Are you happy to be included in the prize draw to win a $50 supermarket voucher?

Note: If respondent asks for more information about My Health Record, refer them to MyHR HelpLine on 1800 723 471 or website www.myhealthrecord.gov.au

# Appendix C Quantitative and qualitative analytical procedures

## Quantitative data analysis

Responses to the CATI included the eHLQ, HLQ, demographic, service use, attitudes, and perceptions data. There are presented as means with standard deviation (SD) or as proportions, as appropriate. The data were analysed using Stata version 15 (Stata Corp. LP., College Station, TX, USA). For each eHealth literacy scale and health-literacy domain, we also calculated the mean (95% confidence interval (CI)) for the total sample, as well as according to participant demographic characteristics and health-related information. For MyHR knowledge, use and intentions, we calculated the proportion (with 95% CI) of the total sample, and for demographic and health-related sub-categories of interest.

We then used key demographic and health-related information, and eHealth literacy and health-literacy scores, to examine the predictors of MyHR knowledge (did the participant know whether they had a MyHR), uptake (among those who knew if they had a MyHR, did they have one) and use (among those with a MyHR, did they use or intend to use it).

## Qualitative data coding and analysis process

Semi-structured interview data were analysed using NVivo qualitative data analysis software (13). Themes for barriers and enablers were identified for each eHLQ domain.

From here, the semi-structured interview transcriptions were coded and analysed in NVivo 12 (13). The first cycle coding was conducted using a mix of Descriptive and In Vivo coding based on the methods from Miles, Huberman, Saldana (2014). In this instance Descriptive coding was in the form of summarising a topic based on participant responses. In Vivo coding was undertaken to capture the essence of thoughts and feelings based on participant experiences (14).

Prior to commencing coding the researcher listened to each semi-structured interview at least twice and took hand written notes (memos) on each. From here these memos were grouped by consistent and reoccurring barriers, enablers and experiences of the participants. These formed the basis of the first cycle coding nodes in NVivo.

### First cycle coding – based on pre-determined deductive coding approach (descriptive categories)

The first cycle coding to be undertaken using a mix of *Descriptive* (summarising a topic based on participant responses) and *In Vivo* (to capture the phrase, thoughts and feelings based on participant responses). This process was guided by the coding and analysis processes described in Miles, Huberman, Saldana (14).

### Subsequent coding and analysis

Next, coding based on the study aims was undertaken. The aims of this procedure were to:

a)  Identify specific barriers and enablers regarding eHealth, and where relevant, grouped by individual, practitioner, or level of the system
b)  Identify any education or communication strategies that participants have discussed
c)  Group identified education or communication strategies into individual, practitioner or system level factors

The research team discussed the results from the first cycle coding and a process for moving forward to further rounds of coding and analysis. Further coding and analysis was undertaken to reflect specific barriers and enablers participants experienced regarding eHealth as determined by the semi-structured interview questions. Categories were grouped to form themes and construct descriptions of themes in a

tabular format. The number of participants who were included in each theme were counted and graphs were produced to explore the frequency of barriers or enablers to technology and eHealth were discussed. See Appendix E for the extended qualitative coding process and Appendix F for the semi-structured interview results.

## Workshop qualitative data analysis

Solution ideas from the workshops were collated and analysed for similar concepts and then synthesised into themed idea lists. The same or similar ideas were condensed into statements that represented common concepts. As well as collating ideas for solutions to the issues presented in vignettes, the data from workshops were analysed to identify perceived barriers, enablers and solutions to eHealth interventions. These were then collated under themes for barriers and enablers by group. This analysis was undertaken using NVivo qualitative data analysis software (13).

# Appendix D Vignettes

**Cluster 12 demographics, technology use and eHLQ**

| 12 Cl # | Cl ord | # in cluster | Av Age | % Female | % use internet last year for health | Av Freq use internet | % have MyHR | % use or plan to use MyHR | ATSI% | eHLQ1 Using technology to process health information | eHLQ2 Understand health concepts & language | eHLQ3 Ability to actively engage with digital services | eHLQ4 Feel safe and in control | eHLQ5 Motivated to engage with digital services | eHLQ6 Access to digital services that work | eHLQ7 Digital services that suit individual needs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 2 | 53 | 56.7 | 52.8% | 96.2% | 3.0 | 35.8% | 30.2% | 1.9% | 3.25 | 3.66 | 3.45 | 2.66 | 3.20 | 2.80 | 2.83 |

**Cluster 12 & HLQ**

| 12 Cl # | Av Age | HLQ1 Feeling supported by health care providers | HLQ3 Actively engaged with health | HLQ4 Social support | HLQ7 Navigating health services |
|---|---|---|---|---|---|
| 12 | 56.7 | 3.49 | 3.38 | 3.33 | 4.09 |

**Cluster 12 and health conditions**

| 12 Ci # | Av # of conditions | % Cancer | % Cardio Vascular Disease | % Diabetes | % Mental Health | % Muscular skeletal | Av Freq using Health care providers | Av Self Rated Health |
|---|---|---|---|---|---|---|---|---|
| 12 | 0.9 | 5.7% | 13.2% | 9.4% | 1.9% | 15.1% | 2.8 | 4.5 |

**Cluster 12 characteristics – High and confident users of digital technologies but still not sure how much they trust putting information online**

Cluster 12 has an average age of 56 which is the youngest of all the clusters. 96% of people used the internet in the past year for health information which is the highest of all the clusters. Only 35% have a My Health Record which is about average across all clusters. 30% of people in this cohort are currently using or plan to use the My Health Record which is the Secord highest of the groups. Cluster 12 are using technology regularly to process health information (eHLQ scale 1) and are motived to engage with digital services (eHLQ 3, 5). However they do not feel their online health is particularly safe (eHLQ scale 4). This group have no difficulty understanding health concepts and language when having conversations about health (eHLQ 2) this was the highest of all the clusters. Compared to the other clusters they have the highest engaging with digital services and accessing digital services and also believe technology adapts to their needs (eHLQ scales 6, 7). They feel very supported by their friends and family (HLQ 4) and by their health care providers (HLQ 1). They do not have difficulty navigating the health care system to get what they need and have the highest levels of managing their health (HLQ 3). Though they report close to average rates of heart disease and diabetes this cluster has the lowest level of mental health conditions and musculoskeletal conditions (arthritis and/or chronic pain).

**Cluster 12 vignette**

David is a 49 year old high school teacher. He works full time and lives with his wife and twin girls who are finishing high school this year. He has no health conditions except slightly high blood pressure and feels his overall health is very good. David considers himself to be adept at using the computer and technology as he does it daily when he does teaches the students. His girls show him things often on the tablet or smart phone and send him messages regularly. He sometimes looks up exercise programs on the net and also looks for cheap vitamins. He records his exercise on an app on his phone. One of his daughters needs to have minor surgery. She has lots of allergies and while he likes the idea of having all of her health records available on-line, he has some concerns about how secure it really is.

## Cluster 7 demographics, technology use and eHLQ

| 12 CI # | CI ord | # in cluster | Av Age | % Female | % use internet last year for health | Av Freq use internet | % have MyHR | % use or plan to use MyHR | ATSI% | eHLQ1 Using technology to process health information | eHLQ2 Understand health concepts & language | eHLQ3 Ability to actively engage with digital services | eHLQ4 Feel safe and in control | eHLQ5 Motivated to engage with digital services | eHLQ6 Access to digital services that work | eHLQ7 Digital services that suit individual needs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 6 | 117 | 61.1 | 49.6% | 81.2% | 1.9 | 33.3% | 12.0% | 0.0% | 2.45 | 2.92 | 2.75 | 1.92 | 2.46 | 2.31 | 2.13 |

## Cluster 7 & HLQ

| 12 CI # | # in cluster | Av Age | % Female | % use internet last year for health | Av Freq use internet | % have MyHR | % use or plan to use MyHR | ATSI% | HLQ1 Feeling supported by health care providers | HLQ3 Actively engaged with health | HLQ4 Social support | HLQ7 Navigating health services |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 117 | 61.1 | 49.6% | 81.2% | 1.9 | 33.3% | 12.0% | 0.0% | 2.96 | 2.95 | 2.91 | 3.64 |

## Cluster 7 and health conditions

| 12 CI # | # in cluster | Av Age | % Female | Av # of conditions | % Cancer | % Cardio Vascular Disease | % Diabetes | % Mental Health | % Muscular skeletal | Av Freq using Health care providers | Av Self Rated Health |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 117 | 61.1 | 49.6% | 0.9 | 5.1% | 11.1% | 6.0% | 4.3% | 16.2% | 2.5 | 4.4 |

## Cluster 7 characteristics – Getting by through using technology to manage health conditions

Cluster 7 has an average age of 61 which is the fourth youngest group of all the clusters. Over 80% of people used the internet in the past year for health information which is quite high in comparison to the other clusters. Over 33% have a My Health Record while only 12% currently use it or plan to use it. Cluster 7 are using technology occasionally to process health information and feel motived to engaged with digital services (eHLQ 1,3,5) but feel their online health is not particularly safe (eHLQ scale 4). They feel they can understand health concepts and language well when having conversations about health (eHLQ 2). Compared to the other clusters they are using technology to process health information, engaging with digital services and accessing digital services they might adapt to their needs occasionally (eHLQ scales 1, 3, 5, 6, 7). They feel they have minimal support from their friends and family (HLQ 4) but feel adequately supported by their health care providers (HLQ 1). They have difficulty navigating the health care system to get what they need and don't feel particularly involved in managing their health (HLQ 3).

## Cluster 7 vignette

Michael is 54 and works as a landscaper 50 minutes out of Ballarat. He uses technology in his everyday life to call people, order materials and equipment that he needs to run his small business. He is a type 1 diabetic and orders his medication online because it saves him time waiting in line at the chemist. He loves the sms system that he gets from his doctor to say that he has an appointment the following day. It means he doesn't have to think about it and knows that he will get a reminder. He sees his doctor regularly and knows how to manage his health after so long being a type 1 diabetic. He gets frustrated with online technology that doesn't understand what he wants, for example he wants to order 3 lots of his medication but it will only let him order 2 and he doesn't know why so gets frustrated with the online process. He has heard about My Health Record but still isn't sure how he feels about having his medical information online.

## Cluster 10 and 5 demographics, technology use and eHLQ

| 12 CI # | CI ord | # in cluster | Av Age | % Female | % use internet last year for health | Av Freq use internet | % have MyHR | % use or plan to use MyHR | ATSI% | eHLQ1 Using technology to process health information | eHLQ2 Understand health concepts & language | eHLQ3 Ability to actively engage with digital services | eHLQ4 Feel safe and in control | eHLQ5 Motivated to engage with digital services | eHLQ6 Access to digital services that work | eHLQ7 Digital services that suit individual needs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 5 | 179 | 67.3 | 54.7% | 49.7% | 1.0 | 34.6% | 15.6% | 1.7% | 2.30 | 2.88 | 2.35 | 2.96 | 2.47 | 2.71 | 2.64 |
| 5 | 7 | 121 | 69.8 | 59.5% | 25.6% | 0.4 | 20.7% | 8.3% | 2.5% | 2.00 | 2.72 | 2.10 | 2.78 | 2.01 | 2.36 | 2.04 |

## Cluster 10 and 5 & HLQ

| 12 CI # | # in cluster | Av Age | % Female | % use internet last year for health | Av Freq use internet | % have MyHR | % use or plan to use MyHR | ATSI% | HLQ1 Feeling supported by health care providers | HLQ3 Actively engaged with health | HLQ4 Social support | HLQ7 Navigating health services |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 179 | 67.3 | 54.7% | 49.7% | 1.0 | 34.6% | 15.6% | 1.7% | 3.18 | 2.97 | 3.06 | 4.17 |
| 5 | 121 | 69.8 | 59.5% | 25.6% | 0.4 | 20.7% | 8.3% | 2.5% | 3.07 | 2.89 | 2.96 | 3.92 |

## Cluster 5 and health conditions

| 12 CI # | # in cluster | Av Age | % Female | Av # of conditions | % Cancer | % Cardio Vascular Disease | % Diabetes | % Mental Health | % Muscular skeletal | Av Freq using Health care providers | Av Self Rated Health |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 179 | 67.3 | 54.7% | 1.0 | 2.8% | 17.9% | 11.2% | 6.7% | 17.3% | 2.6 | 4.1 |
| 5 | 121 | 69.8 | 59.5% | 0.8 | 2.5% | 9.9% | 7.4% | 6.6% | 19.8% | 2.6 | 4.1 |

## Cluster 10 & 5 characteristics: It's not you, it's me

Clusters 10 and 5 together are an important and large group containing almost 30% of the sample. They are similar on most characteristics with the main difference being that cluster 5 is a more extreme version of cluster 10 in terms of having relatively low confidence in their ability to use technology. Cluster 5 are also less motivated to use technology (eHLQ5) and less likely to perceive that technology is suited to their needs (eHLQ7). Both groups trust the technology (eHLQ) and have sufficient understanding of health concepts (eHLQ2). The lower confidence and motivation in cluster 5 is reflected in lower percentage having or planning to use My Health Record. Both clusters also have a low number of health conditions with cluster 10 having a higher number than cluster 5, especially CVD and diabetes. The very low number of health conditions in cluster 5 may also contribute to their low motivation to engage with digital health services.

## Cluster 5 vignette

David is a 70 year old retired plumber who lives with his wife. Bill retired a few years ago because the work became too heavy and he was getting a lot of back pain. He has never used computers much and now uses the computer a bit but mostly for entertainment. He doesn't trust the information you get on the internet, and says that he has trouble distinguishing proper information from advertising. He has a MyGov account but keeps forgetting his password and has to try and reset it each time so he gave up on trying to log in. David's wife is a bit more confident and manages health appointments and reminders for both of them from her smart-phone. Since his retirement Bill has been in good health and has little reason to engage with doctors. His life is busy with gardening and looking after grandchildren after school each day.

**Cluster 9 and 1 demographics, technology use and eHLQ**

| 12 Cl # | Cl ord | # in cluster | Av Age | % Female | % use internet last year for health | Av Freq use internet | % have MyHR | % use or plan to use MyHR | ATSI% | eHLQ1 Using technology to process health information | eHLQ2 Understand health concepts & language | eHLQ3 Ability to actively engage with digital services | eHLQ4 Feel safe and in control | eHLQ5 Motivated to engage with digital services | eHLQ6 Access to digital services that work | eHLQ7 Digital services that suit individual needs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 9 | 39 | 71.7 | 53.8% | 20.5% | 0.3 | 20.5% | 5.1% | 0.0% | 1.56 | 2.90 | 1.41 | 2.86 | 1.75 | 2.29 | 1.92 |
| 1 | 11 | 38 | 75.2 | 52.6% | 0.0% | 0.0 | 15.8% | 5.3% | 0.0% | 1.07 | 2.99 | 1.13 | 2.79 | 1.09 | 1.79 | 1.18 |

**Clusters 9 & 1 HLQ**

| 12 Cl # | # in cluster | Av Age | % Female | % use internet last year for health | Av Freq use internet | % have MyHR | % use or plan to use MyHR | ATSI% | HLQ1 Feeling supported by health care providers | HLQ3 Actively engaged with health | HLQ4 Social support | HLQ7 Navigating health services |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 39 | 71.7 | 53.8% | 20.5% | 0.3 | 20.5% | 5.1% | 0.0% | 3.38 | 3.06 | 3.30 | 4.04 |
| 1 | 38 | 75.2 | 52.6% | 0.0% | 0.0 | 15.8% | 5.3% | 0.0% | 3.49 | 3.23 | 3.31 | 4.17 |

**Cluster 9 and 1 health conditions**

| 12 Cl # | # in cluster | Av Age | % Female | Av # of conditions | % Cancer | % Cardio Vascular Disease | % Diabetes | % Mental Health | % Muscular skeletal | Av Freq using Health care providers | Av Self Rated Health |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 39 | 71.7 | 53.8% | 1.1 | 12.8% | 15.4% | 7.7% | 5.1% | 28.2% | 2.7 | 4.0 |
| 1 | 38 | 75.2 | 52.6% | 1.4 | 10.5% | 15.8% | 2.6% | 10.5% | 36.8% | 2.9 | 4.2 |

**Clusters 9 and 1 characteristics – We're doing okay engaging health services the way we are thanks. No need for this new-fangled stuff.**

Cluster 9 and 1 are similar in many aspects and cluster 1 could be viewed as a more extreme version of cluster 9 in both clusters the main issue seems to be a strong disinterest in using technology (eHLQ 5 and 7) and limited experience and ability using technology (eHLQ 1 and 3) despite the fact that they have reasonable good understanding of health concepts and language (eHLQ2), that they trust digital health services (eHLQ 4) and that they have very high levels of confidence in their ability to navigate health services and quite high trust in health providers. The high confidence in navigating health services suggests extensive experience and satisfaction with the way that they currently do things which may explain their disinterest in doing things in new ways. While both had low use of the internet for health in the last year cluster 1 was the lowest of all clusters at 0%. Cluster 1 has a relatively high prevalence of mental health conditions and was highest of all clusters for musculoskeletal conditions (arthritis and/or chronic pain) but very low for diabetes, i.e. it is high on conditions that have active symptoms, this may be why they are more active in managing their health (HLQ3) than cluster 9. **Cluster 1 vignette**

Jeannie is a 74 year old woman who lives alone and uses the internet to email gown children and grand-children who live interstate. While she has good friends nearby, she often feels lonely after the death of her husband and due to the fact that his children don't live nearby. She mostly visits the doctor for occasional flare-ups of back pain and to renew prescriptions for blood pressure, she also visits the chiropractor about once a month for her back. While she doesn't like the fact that the doctors surgery seems to always have a new doctor, she knows the nurse there well. She also got to know the local hospital and nursing service pretty well while her husband was dying. She hasn't really heard or thought much about new ways of using the internet for dealing with health services and if asked doesn't see the point since everything is 'just a phone-call away'. Jeannie went to the doctor recently to get a new prescription. It was a new younger doctor and they tried to talk to her about the online health records. Jeannie had no idea what the doctor was talking about or what she was meant to do. She told the doctor she wanted him to manage her health for him. She didn't want to have anything to do with any of the technology.

**Cluster 11 demographics, technology use and eHLQ**

| 12 Cl # | Cl ord | # in cluster | Av Age | % Female | % use internet last year for health | % have MyHR | % use or plan to use MyHR | eHLQ1 Using technology to process health information | eHLQ2 Understand health concepts & language | eHLQ3 Ability to actively engage with digital services | eHLQ4 Feel safe and in control | eHLQ5 Motivated to engage with digital services | eHLQ6 Access to digital services that work | eHLQ7 Digital services that suit individual needs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 12 | 21 | 69.6 | 47.6% | 14.3% | 9.5% | 0.0% | 1.16 | 2.48 | 1.29 | 1.50 | 1.23 | 1.44 | 1.25 |

**Cluster 11 & HLQ**

| 12 Cl # | Av # of conditions | % Cancer | % Cardio Vascular Disease | % Diabetes | % Mental Health | % Muscular skeletal | Av Freq using Health care providers | Av Self Rated Health |
|---|---|---|---|---|---|---|---|---|
| 11 | 1.5 | 4.8% | 14.3% | 14.3% | 23.8% | 33.3% | 2.2 | 4.1 |

**Cluster 11 and health conditions**

| 12 Cl # | Av Age | HLQ1 Feeling supported by health care providers | HLQ3 Actively engaged with health | HLQ4 Social support | HLQ7 Navigating health services |
|---|---|---|---|---|---|
| 11 | 69.6 | 3.07 | 2.93 | 2.73 | 3.63 |

**Cluster 11 characteristics –Not engaging with technology at all**

Cluster 11 has an average age of 69. Less than 14% of people used the internet in the past year for health information which is amongst the lowest of all the clusters. Only 9% have a My Health Record which is the lowest group in comparison to other clusters, while none are currently using it or plan to use it. Cluster 11 are not using technology to process health information (eHLQ scale 1) and they do not feel motived to engage with digital services (eHLQ 3, 5). However they do feel their online health is quite safe (eHLQ scale 4). They have difficulty understanding health concepts and language when having conversations about health (eHLQ 2), this was the lowest score for this scale. Compared to the other clusters they are not engaging with digital services or accessing digital services and they do not believe technology adapts to their needs (eHLQ scales 6, 7). They do not feel supported by their friends and family (HLQ 4) which is the lowest score for this scale and do not feel supported by their health care providers (HLQ 1). They have some difficulty navigating the health care system to get what they need and feel reasonably unable to managing their health (HLQ 3). This cluster has the highest number of people with diabetes and mental health issues.

**Cluster 11 vignette**

Mark is a 75 year old widow. His wife died 3 years ago and he lives on his own in a small unit in the northern suburbs of Ballarat. Mark and his wife previously had land about 20 km out of town but they moved into town five years ago due to declining health, especially his wife's. Since his wife's death Mark feels lonely and cut off from what he has spent his whole life doing and a bit angry that they sold up the farm only to have his wife die shortly after. His doctor told him that he was depressed but he thinks his sadness is completely natural in the circumstances. While Mark used to use a computer on the farm, he doesn't own one now. He does use his smart phone to talk to his daughter and grandchildren in Perth quite often. He sometimes uses an app on his phone to measure how far he has walked. Mark was watching the TV and saw an for the new Government health thing but they put up a website with no phone number so she decided it was too hard for her to find out anything about it. Mark doesn't see the need for any sort of online health records. He sees the doctor face-to-face when he needs to.

# Appendix E Qualitative data coding process and semi-structured interview results

**First cycle coding semi-structured interview results - qualitative data**

> **Initial prior to coding top level categories**
> Semi-structured interviews were reviewed > note reoccurring barriers, enablers and experiences of the participants which formed the first basis of the first cycle coding – see below:

Key **barriers** to eHealth:

1.  Access to health technology - negative (don't understand, don't use, no need to use, coverage issues)
2.  Lack of info about eHealth systems (don't know how to use or about it)
3.  Misleading information on internet
4.  Prefer face-to-face health care rather than using technology
5.  Adapting technology to skills or needs - negative (generic info software)
6.  Health data security ownership - negative (who has access)
7.  Managing health difficulty not managing health through technology
8.  Navigating Health System - difficult (new to area, not sure where to go, don't know about services)
9.  Health system level feeling unsupported

Key **enablers** to eHealth:

1.  Access to health technology - positive (convenience. easy. enabling health and conversations with GP or to research information)
2.  Actively asking questions (Health Care Providers, GP, doing own research)
3.  Managing health through diet, exercise, technology
4.  Social support - positive (getting health information, or supportive in general)
5.  Health data security ownership - positive (nothing to hide, it's a good thing, feeling in control)
6.  Do what doctor says to do (to facilitate Health or eHealth)
7.  Health system level feeling supported

> **2. Coding (descriptive categories)**
> 2.1 First cycle coding was conducted using broad descriptive (summarises topics) and In Vivo (participant phrases) (14).
> 2.2 Subsequent coding and analysis was undertaken to recoding to reflect the study aims and to pull out any specific barriers and enablers regarding eHealth.

Recoded to below **barriers** based on 2.1 and 2.2:

1.  **Access – coverage issues (lack of internet connection, no internet)**
2.  **Lack of skills (lack of confidence & training, not interested, don't understand, no need, don't know how to)**
    2.1 Don't know how to use computer / lack of confidence and skills
    2.2 Not interested in technology (emotive)
    2.3 Don't need to or want to use technology to manage health or for health information
    2.4 Prefer face-to-face compared to online health information
3.  **Misleading info on the internet (not sure what to look up or to trust the information)**
4.  **Barriers to accessing or using Government websites**
    4.1 Difficulty navigating the website (too complex, lack of skills, password issues)
    4.2 Don't see the need of My Health Record or haven't looked at
    4.3 Incompatible technology to access website
    4.4 Lack of information about what to do with the record and how to use it and how to interpret results

5. **Health system barriers**
   5.1 Misdirected resources
   5.2 Misalignment between health services
   5.3 Lack of access to health services (wait times, international doctors, lack of continuity)
   5.4 Bad experiences with the health system
   5.5 Bad experiences with health care providers (practitioner level)
   5.6 Navigating the health system barriers
6. **Technology / Internet doesn't adapt (to needs, or individuals)**
   6.1 Health technology not adapting to needs (booking appointments or ordering prescriptions)
   6.2 Internet search for health information not adapting – generic information
   6.3 Not knowing what to search to get the right information
7. **Lack of awareness about eHealth, eHealth records**
8. **Security issues as barrier (don't trust, not secure, lack of privacy, don't want people to access info)**
   8.1 Lack of control over personal health data
   8.2 Incorrect information on health records
   8.3 Lack of security – hackers
   8.4 Concern about how health information will be used
9. **Prefer hard copy information or directories to find health information**

Recoded to below **enablers** based on 2.1 and 2.2:
1. **Managing health through technology**
   1.1 Using technology to navigate the health system
   1.2 Using technology to manage health (using health apps or online systems)
   1.3 Using the internet to search for more information on conditions or health to be better informed to have conversations with GP (pre or post consultation) for self or family / friends
2. **Enablers to eHealth - information all in the one spot (easier for GPs and patients to manage health)**
   2.1 Using MyHR to centralise health info to help self-manage health for self or family
   2.2 Health providers having access to health info (including MyHR) - enabler for better health care
3. **Health system supporting them to manage their health**
   3.1 Health care providers managing appointments, navigating the health system for patient, HCP attending rural areas
   3.2 Health services close by, all in one spot, easily accessible
4. **Sharing of health data is safe**
   4.1 Don't mind if health information is shared
   4.2 Online health data is secure / safe
   4.3 Feeling in control of health data
   4.4 Nothing to hide (online health records)
5. **Supported eHealth engagement**
   5.1 Friends / family facilitating health management through technology (don't use technology themselves)
   5.2 GP facilitating health management through technology
6. **Friends / family helping to manage health (in health field)**

# Appendix F Semi-structured interview results – themes and selected quotes

Table 6 Issues around eHealth and technology when engaging with or managing health – individual level

| T# | Theme | Attributes of <u>individual</u> theme | *Select key quotes* | ID & No. participants |
|---|---|---|---|---|
| 1 | Lack of control over personal health information on eHealth records | • Perceptions of lack of control over personal health information, don't know how to have control<br>• Concerns around the accuracy of personal health information stored in eHealth records and how to amend incorrect information<br>• Lack of privacy, don't want unauthorised people or organisations to access personal health info<br>• Unsure as to who has access to | *They need to revise the legislation around the My Health Record. It's just that at the moment, it's open to being misused by departments other than those that actually need it. I have a concern that it's going to be bundled in with driver's licence information and other information, and become a really targeted issue. And given the privacy commissioner's words about the release of information to defend the department, I find it really really moving towards something that is a bit of a dystopia. My concern is that the government doesn't take care of people's information. Int 42*<br><br>*I guess to have all my information readily available to anyone and everyone means that I won't feel comfortable about that because I can't control who uses it. I can't control who accesses it and I cannot control why they access it. So what me and my doctor know to be simple and controlled, may to other people refuse me to get a job or to be advised against my children getting into a job because I had anxiety. But not that I still have anxiety and have dealt with it but it still comes up. So I can't control what other people use my data and I can't control who accesses it and why they accessed it. And it's one thing to say it's only available to the health professionals but there is a big world of health professionals, and then there are hackers and then there is this and then there is government interventions and everything. Int 37*<br><br>*My GP, for instance, keeps my medical records and I believe I have a My Health Record but I don't have direct access to that, and personally I'm not sure how I could get direct access to that or have some say or control over which medical professionals get access to that. I think after all it's my data, I would like to know who is using it and what is on the record. Int 33*<br><br>*Years ago when I had a lot of depression problems and I asked the doctor not to put that information on my file… I was suicidal. I really was suicidal and I was worried that WorkCover could come along and go into it and say okay that could have an effect, a bad effect on me. That's the only thing that I worry about. It's certain* | 13, 14, 16, 22, 26, 28, 33, 35, 36, 37, 39, 42, 45<br><br>Total = 13 participants |

| | | personal health information | *things like that when you are working you don't want to have WorkCover know certain things. I was more worried that WorkCover could get a court order to look at the things because I was on WorkCover at the time for different things but I was a bit worried that they could say we are coming to look at your file and I didn't want that on there. I didn't want them to know about that. Int 22*<br><br>*It's so easy to make a mistake. People can type something and it can be wrong and things can change and try to get an address change because they have typed incorrectly into the computer into one of their systems and once it's put into the computer its set in granite. I have seen this happening with regard to medical information and incorrect medical information typed in. People make mistakes and it can cause real problems, which is why I've opted out. This is the decision of a well-educated intelligent person. Int 39* | |
| 2 | Attitude and skills around technology | • Lack of skills, confidence & training around technology | *I don't know how to use the computer anymore so I get people to access that for me. I give them the information or they will look it up and find it for me. Int 06*<br><br>*I do have an old computer. I can send an email and look up on the internet but nothing complicated. If something goes wrong, I get my son to come and look at it. I don't have skills in terms of being able to work out, you know, anything terribly much. I just use, you know, the basics. The really basic things like emails. Int 29*<br><br>*I'm just not particularly comfortable with using IT generally. Nearly everything I know about digital technology I have learnt myself by playing around with it. Even then it's not something I'm comfortable with. Int 05* | 01, 04, 05, 06, 09, 23, 26, 28, 29, 40<br><br>Total = 10 participants |
| 3 | Not using technology to manage health | • Don't want to use technology to manage health<br>• Don't have the need to use technology to manage health | *I don't use technology for my health information. I don't need to really. Int 01*<br><br>*I don't use any smart phone apps to manage my health. It's something I really don't want to do. I don't think it's necessary. Int 33*<br><br>*I don't know anything about it [My Health Record] because I haven't used it yet – the new Government system, my health something or other. I heard about it. I got a brochure that came in the mail from the chemist I think. So no, I haven't looked into that. I haven't really had the need to bother about it. Int 47* | 01, 05, 13, 28, 29, 33, 47<br><br>Total = 7 participants |

| 4 | Not interested in technology (emotive) | • Not interested, don't understand, don't need technology | *I'm not interested in either one of them [eHealth or technology] because I've never been interested and I don't think it's necessary for us. I did have heaps of electronic stuff that I'm not interested in. Mobile phones you get dragged away all over the place. If you want to be pestered you get a mobile phone but I've never wanted one. I had a computer but I got rid of that as well a few years ago now. I mean I'm 84 and my wife is 83 and we are just not interested in all this modern stuff. I got a mobile phone that I bought in England and I've got it here but I've never used. It's still in the cupboard so we have no need for it. Int 44*<br><br>*[Do you use technology to find health information] I don't. I don't because I am pigheaded number one. I'll pay a doctor to tell me, not go to images on Google. Sorry that's as honest as I can get. I can't even turn it on [computer] and I don't turn it on. You can say I'm an ignorant. I'm born in between all this digital stuff and you know we find it hard to do it so I just avoid it all the time. Int 50* | 4, 12, 19, 38, 39, 50<br><br>Total = 6 participants |
| 5 | Unaware of eHealth | • Lack of awareness as to what eHealth is, where to access it, what it can do for individuals and how to use it | *The awareness is a big thing for me to know what is available out there. That often skips you by. If you knew things were there, you would take advantage of them. Int 02*<br><br>*I don't really understand. I'm not really sure how to use it or how the doctor would use it [eHealth record] or any other professionals that use it or what has actually been put on. I probably really need to understand a bit more I think. Int 23* | 02, 03, 05, 23, 38<br><br>Total = 5 participants |
| 6 | Prefer face-to-face health information | • Preference to speak with health professionals face-to-face rather than looking up health information online | *I would rather talk face-to-face with someone and find out all the information I require. Int 06*<br><br>*I like personal things. You know talking to people face-to-face because I really feel I can ask questions. If I look it up on the computer I sort of can't really ask questions. Int 23*<br><br>*I probably have more confidence, you know, being face-to-face with, say, my own doctor or specialist or whatever. I don't think the internet does much for me as far as, say, a personal issue goes. I just feel more comfortable talking to the GP anyway. Int 07* | 06, 07, 10, 23, 30<br><br>Total = 5 participants |

Table 7 Issues / barriers around eHealth and technology when engaging with or managing health – system level

| T# | Theme | Attributes of system level theme | Select key quotes | ID & No. participants |
|---|---|---|---|---|
| 7 | Misleading information on the internet | • Not sure which websites to trust for reliable health information<br>• Unsure how to distinguish which symptoms relate to what health conditions through online health diagnosis | *Generally I find looking things up on the Internet can be problematic in that you get so much information with so many symptoms so you suddenly have everything. Int 18*<br><br>*A lot of the time you Google information about health you would get yourself quite distressed because some symptoms can vary for a lot of different things. Int 25*<br><br>*I have enough knowledge to know that you know, you can't necessarily trust what you're reading on the Internet. Int 28*<br><br>*I just Google but I am aware you need to be careful of some of the American Hospital websites and that sort of thing because there is a lot of misinformation even though you use it. You are supposed to take some of it not quite with a grain of salt but not take it as gospel. Int 48* | 03, 11, 18, 22, 24, 25, 28, 33, 48, 49<br><br><br>Total = 10 participants |
| 8 | Inflexible technology | • Technology doesn't adapt to the needs of individuals for example booking appointments online or ordering prescriptions online<br>• One size fits all software or | *I use hot doc when I book GP appointments. That doesn't really adapt to me. I have to work with it rather than it working with me. Int 35*<br><br>*I think we have to adapt to the geeks who are designing it to be honest. By that I mean I don't think anything technological really adapts to me as an individual. I have to adapt to it. I have to learn how to use it and I have to know how to navigate it. Int 11*<br><br>*A lot of things are designed for people who understand technology and can work their way around it quickly. So no, I don't think they're always accessible or adaptable, particularly not for vision impaired people who really need something. Int 31*<br><br>*I think any sort of computer program is probably going to have to be one-size-fits all. My problems, in a general sense, may be the same for somebody else but my experience may be something different. eHealth* | 11, 20, 31, 26, 35, 37, 40, 42<br><br><br>Total = 8 participants |

| | | | | |
|---|---|---|---|---|
| | | websites that don't suit everyone | *information probably would not cover the various shades of how somebody experiences a particular physical problem or mental problem. Int 40* | |
| 9 | Access (coverage issues or no internet) | • Difficulty accessing the internet and / or mobile phones due to coverage issues or insufficient internet speed<br>• Difficulty accessing internet due to cost | *I struggle with the Internet and the signal out here. You know, you go onto where you can manage your Medicare and everything. The MyGov account where you have to give them a mobile phone number so that they can send you a code. By the time I get the code and run around the block to get signal to get the code then that time has lapsed and I have to try it again. Int 41*<br><br>*As much as I would love to be a bit more useful on computers and technology, it's just a matter I have got to go to the library to get Wi-Fi or whatever. I don't have it at home. It's cheaper to go there [the library]. Int 40*<br><br>*There is a computer black hole and these things that I do have to be done in the library. We don't have mobile phone access or computer access. Because it is a country area and I don't know quite what it is about but it doesn't work. Int 04* | 04, 13, 25, 26, 33, 40, 41, 42<br><br>Total = 8 participants |
| 10 | Security concerns around eHealth | • Don't trust software is secure<br>• Concerns about hackers accessing health information | *It's a fact that if you put something out into the ether in the cloud, you have to accept that it has the ability to be accessed by anyone who has intelligence or a computer, basically. Int 37*<br><br>*I actually don't have a My Health Record because I don't trust the government with the internet security to the position where I am willing to have absolutely everything from me accessed on there by any other doctor who chooses so I prefer to be carrying that information with me or have my family know that information. I am really concerned that there are some very clever hackers out there. Int 31*<br><br>*The fact is our health records are being accessed. It's just probably very easy for any experienced hacker to get into that regardless of how much security they put on it. So I don't think anyone, not just me, has pure confidence in not just availability in the security of medical health records. Int 40* | 27, 31, 38, 39, 40, 42, 49<br><br>Total = 7 participants |

| 11 | Lack of access to timely and appropriate health services | • Long wait times<br>• International doctors / lack of continuity of health care<br>• Long distances to travel to access health care services | *My partner has been in hospital for three weeks. After being admitted, she was being transferred to intensive care for a week and she tried to get to see her doctor prior to going to hospital and there was a waiting list of three weeks or something and she needed urgent attention and she just took herself off to the emergency department. Int 47*<br><br>*I'm in rural Victoria. You can't get a quack. You can ask them questions and that's fine and then you go a few months later and there is a different quack there. This is not a racist comment; it's an observation most of them are foreigners and then most of them are difficult to understand. The problem is they talk too fast they don't seem to want to know except write a prescription and send you on your way. So I don't have any confidence in the health system here where I am. None at all. It's 40 minutes travel to go to the quack each way. Int 14*<br><br>*You can't get an appointment in Clunes anyhow. You have to wait a month or more for a doctor's appointment. Int 15*<br><br>*It's very difficult because you cannot get a doctor's appointment within a month. So that's why you don't go to the doctor because you can't get in. That's why I go to Ballarat. That is the whole population here – we all have terrible trouble getting in and when you're really sick you just can't get in.*<br><br>*It used to be a long-term one [GP] but our doctors now swap and change quite a bit so… every couple of years I get a different doctor. Int 50*<br><br>*I have already changed to a different clinic because I was having a lot of issues with the doctors that they were employing because they were employing a lot of non-native English speaking doctors and, as a person who can't see, I sometimes struggle with their communication. But also I've had a situation where they don't understand what my requirements are as a person with a disability. So, for instance, when I was applying for NDIS one of the doctors with a non-English speaking background actually filled out my form to say that my blindness had no impact on any part of my life. So I was rejected as a NDIS participant. I know they are trying to support young doctors and they are trying to support doctors from overseas getting experience and all that but it has made it very difficult for me so I changed to a different clinic. Int 27* | 08, 11, 14, 15, 27, 47, 50<br><br><br>Total = 7 participants |

| 12 | Issues accessing or using Government websites including the My Health Record | • Difficulty with password protected websites<br>• Difficulty navigating complicated websites<br>• Incompatible technology to use Government websites | *MyGov for instance is extremely difficult to access. You have very tricky questions that you have to remember the answer to and I know they are all about you but then after I get an email that tells me I have got a message to check on MyGov and it's not a matter of clicking on my email and getting in. It's a matter of then having to log onto MyGov to then send the code to your mobile and then you have to access the code on the mobile and if it is small print someone else always has to help me. There is no way I can do it myself. Int 31*<br><br>*One problem with the Australian Government health records is accessing it because I can't, you know. I logged on ages ago with a password and it not easy to use. I joined [My Health Record] ages ago and I can't remember the password so I haven't bothered. You know a lot of people can't remember their password so they don't bother to access the My Health Record and see what it says. Int 48*<br><br>*I can't get onto MyGov. The computer won't let me. It's blank. I access the Centrelink parts of it and then it just all stops. I can't access it. It's blank, it's grey and they [Centrelink] said I have to have something else on the computer and I don't have it so it doesn't interact. Int 25*<br><br>*I have set up the My Health Record. I have set it but then I didn't know what I was meant to do next. I have put all my information in and then I wasn't sure what to do next. Do I tell my health practitioner that I am on there or can they send my health information to that site? I don't know enough about how to actually go about setting it up completely. Int 08*<br><br>*We were travelling around Australia and I did it [My Health Record] before I left Darwin. I put up our health record for easy access for all the doctors wherever I went. In WA, Queensland and South Australia it didn't work. The only place it seemed to work was here in Victoria… I don't think it ever got uploaded properly but everywhere you go you say I have an eHealth record because that's what you are meant to do, and they are meant to be able to access it. But a lot of doctors didn't know even what we were talking about. Int 41* | 08, 25, 31, 41, 48, 45<br><br>Total = 6 participants |
| 13 | Previous bad experiences with the health care | • Previous bad experiences with health care providers | *I feel at the moment we are badly let down by our health services. Extremely let down and it's getting to the stage where if I was any sort of person I'd sue the staff there [at a particular clinic]. Int 50*<br><br>*I have lost a bit of confidence in the health system. I think the health system needs reforming, desperately needs reforming. I called the ambulance a while ago to transfer me to the Ballarat Base Hospital. I had to wait for two hours for an ambulance response then I went into emergency at the Base Hospital and they put me in a* | 14, 15, 19, 49, 50 |

| | | | | |
|---|---|---|---|---|
| | providers or health services | • Previous bad experiences with health system | *wheelchair with all my gear and I had to wait in that wheelchair for about 15 hours before I was placed into a bed in emergency. Int 15* | Total = 5 participants |
| 14 | Health system barriers | • Misdirected resources or misalignment of services | *I think there is too much money wasted on unnecessary – what do they call it? – diagnostic tools. Realistically, in my opinion, I should only have enough to ensure I am comfortable because I feel that money could be better sourced for people who are working age, who have children and whose children need that, and I think personally that would help alleviate the waiting list and the resources that are available to people. You only have to look into any major hospital, – rural or Metropolitan – and there are people in there taking up beds that realistically they are only waiting for a nursing home, and I don't feel that public hospital beds should be used for that. Int 10*<br><br>*I'm on the boundary of two different shires so some services I go to in one and others in the other, and I don't know if they are talking to each other. I went to a falls program in the neighbouring shire – I think they are a prevention program. There is a falls prevention program in this shire but I don't qualify because really I am on the boundary. It does make it difficult if you don't know your way around. Int 04* | 02, 04, 10, 48,<br><br><br>Total = 4 participants |
| 15 | Navigating the health system barriers | • Lack of information on how to get the right services or where to go | *I am quite experienced with the healthcare system but absolutely do not know where to go and I do not know the right things to say and I don't know how to best get what I need out of our health care system. I do feel that I am a very privileged educated, capable, person who has worked inside the health system. Int 37*<br><br>*I will usually go to the GP because unless you know the people in the health industry, the GP usually refers you and you just don't know who is competent or who is better than others. It is one of the issues. We just don't know which specialists are better than others. It's usually word of mouth or your GP. It is an issue, no doubt about it, because some of the specialists are much better than others but it's really hard. How do I know? Int 48* | 12, 37, 48<br><br><br>Total = 3 participants |

Table 8 Solutions to eHealth and technology when engaging with or managing health

| T# | Theme | Attributes of individual level theme | Select key quotes | ID & No. participants |
|---|---|---|---|---|
| 16 | Managing health through technology | • Using technology to navigate the health system and find health services or find reviews of health services<br>• Using technology to manage or monitor health such as health apps<br>• Using online health services for convenience to manage health<br>• Using the internet to search for information on symptoms to have conversations with GP pre consultation<br>• Using the internet to search for more information on conditions or | *I still use the Internet and apps to locate practitioners. So I go online and Google a particular doctor or an area with certain practitioners. But I might need to look up to know what sort of practitioner I need. Int 37*<br><br>*I have looked up in the past certain doctors in Ballarat, like my cardiologist. I have just looked them up online and looked at his Linkedin profile and got to know who he was from that aspect. And looking up a map to know where to go as well, and I have done some research online to see if I can find GPs or doctors online who are open to more holistic therapies. Int 11*<br><br>*I can make appointment to see my GP online and I have found it to be very useful because I can do it at two in the morning online. Int 28*<br><br>*On my phone and my watch and my treadmill when I'm exercising I can get information about how fast I am going and my heart rate and how many calories I have burnt and all that sort of stuff. Int 27*<br><br>*I order my medications from the local chemist. We are in a rural area and it's a 15 minute drive into the village so it's easier. They have all of my prescriptions online and I just go to the box and click on what I want. It's 15 km into town. I can do it now if I want to and tomorrow I get an email back to say my prescription is ready and I just go pick it up. Int 26*<br><br>*I have been to the doctor but sometimes when I've been I want to read up a little bit more about it. I want to read something that is niggling me so I look it up and I make a decision about if I should contact him. If you are confident, you know that you can go ahead and find out all the information that you want if you need to and that's what I think is important. So if the doctor suddenly said to me I had something and I wasn't quite sure of it and his explanation didn't quite work with me, I would then go and check up on the net. Int 22* | 03, 07, 08, 11, 14, 17, 18, 20, 21, 22, 26, 27, 28, 31, 33, 34, 35, 36, 37, 42, 43, 46, 48, 49<br><br><br>Total = 24 participants |

| | | | | |
|---|---|---|---|---|
| | | medications post GP consultation | *[I'll search online] before I go to my GP or my pharmacist if it is something I don't think I'll need a lot of expertise on. It's something that I look up to see what medical site the computer says. I would do this beforehand on my tablet. I always check out the side-effects of drugs. I always check out whether there are other options that will aid as well. So I check on those sort of sites to see what might help. Int 31* | |
| 17 | Benefits of eHealth records | • Health records and information all in the one spot, easier for GPs and patients to manage health <br> • Easier to manage individual health or family's health through online records | *I know that the new Australian health service online, which is called My Health and I know with my mother it has been very useful to have access to that. It basically helps me work out what services she has access to and it centralises it all so that if she needs an OT or when she needs particular, specific healthcare through the Government, it can be managed all in one place. It's called My Aged Care. She is not using it but I am using it on her behalf and I have only recently become aware of that but it's been centralising Government health services that has been quite useful. Int 20* <br><br> *I think it's very good because I have unfortunately the last few years have had a bit of a history with various things so, if I had to be far away from my clinic, I know that some other doctor could get the immediate history about me and I would be glad of that. Int 34* <br><br> *I think it is a good idea because instead of repeating my story all the time, it's there and anyone can access it – the doctor I go to, the healthcare, the hospitals or the ambos even. I think it is a good idea, it really needs something like that where any medical professional can access information to find out what is going on, past things, history. I have got a lot of allergies and reactions to medications. Int 06* | 06, 07, 11, 13, 17, 19, 20, 30, 34, 41 <br><br> Total = 10 participants |
| 18 | Sharing of health data is safe | • Online personal health data is secure <br> • Not worried about sharing online health information or privacy of health information | *In terms of my health, I don't mind if my information is shared. If it needs to be shared, I don't really mind that happening. Naturally I would want to consent to it if I could. If I couldn't consent in the given time and if it was needed, I would be OK with it being shared. Int 01* <br><br> *I guess I don't worry too much about privacy and I'm not too worried about who knows what is wrong with me or what my age is. It really doesn't particularly worry me if the information is passed on to someone else. Int 18* | 01, 02, 06, 07, 09, 10, 18, 24, 50 <br><br> Total = 9 participants |

| T# | Theme | Attributes of system level theme | Select key quotes | ID & No. participants |
|---|---|---|---|---|
| | | • 'Nothing to hide' in terms of personal health information online | *I think the government owns that they can use it to whatever advantage they want to use it. I have got nothing to hide. I'm not one of these people that says you can't look at this, you can't look at that. They can look at my file any time. I don't care. It doesn't mean a thing to me that security. Not at all. Int 50*<br><br>*I don't have a problem. If people want to break into my digital information, let them break in and have a look. There is nothing there to hide. I'm not only human. I have had a heart attack. I have done this. I have done that. So what? Lots of other people have done the same. I have got nothing to hide. It does not worry me. Int 09* | |
| 19 | Health System supporting management of health | • Health care providers managing appointments or navigating the health system for patients<br>• Specialists attending rural areas<br>• Health services close by and accessible | *I live in city with very good health services [Ballarat]. Everything is within 10 km. Int 39*<br><br>*We have very good health services. I have good service with them and they monitor me my health very well. Ballarat – that's where they are. That they are accessible when you need them. Int 45*<br><br>*I just had a procedure and I went through my local GP who had a specialist come in and I went to the local hospital in Daylesford because the specialist goes there and there are a number of specialists that do; they attend certain days of the month. They come from Ballarat I think – they are based there. There are about 3-4 specialist clinics that do rotating. Int 37*<br><br>*I do not have private health insurance and because my knee was hit with arthritis, my GP put my name down years ago so that when I finally got an appointment, it was at the right time. The GP would put me down five years before I needed things to help me get in. Int 22* | 18, 19, 22, 34, 36, 37, 39, 45<br><br>Total = 8 participants |
| 20 | Solutions to enable people to use technology | • Face-to-face training on how to use technology to manage health | *I know that the Government is trying to digitise health records. What would make me feel comfortable is an easy-to-access website. So easy to remember the name that you could find it on the Internet… and that you can get in with an easy four digit pin and it's all there. Int 03* | 03, 05, 06, 12, 21, 33 |

| | | | | |
|---|---|---|---|---|
| to manage health | • Simple website layout, easy passwords, easy to find websites with linked information in the one spot<br><br>• Publicity about what eHealth systems are available and how to use them | *Having a bit more publicity so that more country people know about it; like in the general practitioner's office… We don't always go in there on a weekly basis so maybe in the town that has its own little paper. The My Health Record – the only reason I know about it is because it's all in the media and some people made it to the media with people complaining. Otherwise I wouldn't even know about it. How would you know about the phone number and website if you didn't know it was out there? There needs to be something out there that can get people talking so that they don't have to pick up the information from the doctor. Why isn't it in other places? Int 21*<br><br>*The best thing would be some sort of simple training night. If something could be done in a couple of hours. If someone could work through steps about the digital records medical information. I have done a little bit of technology for fire-brigade stuff with online training records. They have had somebody with a computer up on a large screen and there will be a number of us where each person has access to a laptop and they just walk us through. You need to do this step so we can actually do it while they are showing you. If there is a sort of a way that there are steps to refer back to or something to refresh your memory or probably some files to take home. More as a prompt. Int 05* | Total = 6 participants |
| **T#** | **Theme** | **Attributes of <mark>community</mark> level theme** | ***Select key quotes*** | **ID & No. participants** |
| 21 | Social support to facilitate managing health or using technology | • Supported health or eHealth management / engagement through friends or family in health field<br><br>• Friends or family supporting technology use | *I don't know how to use the computer anymore so I get people to access that for me. I give them the information or they will look it up and find it for me. Int 06*<br><br>*I would just go and ask my wife. I'll do research to get into our Centrelink and the health is all connected together. We have got different accounts. All of our history has been put up. She operates that. I don't operate that and I have handed her over the books. I don't see that I need to do it. I can get the wife to chase up our account; like have a look at what is there. I could do it if I had to but I'm not as fluent as what she is. I have got a phone but I use my phone only as a phone. My wife does all that. Int 09* | 02, 05, 06, 09, 19, 25, 26, 32, 36, 38, 43, 44, 50<br><br><br>Total = 13 participants |

|  |  |  | *My wife was a nurse and my daughter is also a nurse educator and because of them I asked them questions and they give me the answers and I can talk to them about it. I talk to my daughter now about it so I've got a bit of an idea of what I am asking and the sort of questions I want answered and expecting to get from the health team. Int 38* <br><br> *I've got my brother who is a surgeon and four of my sisters-in-law are nurses, two of my brothers-in-law are paramedics. My niece is a physio. Yeah, look, I'm pretty well supported certainly without professionals and GP – they're only a phone call away. Int 02* |  |

Table 9 enablers to using or accessing the My Health Record and selected quotes

| MyHR Theme & selected quotes | Id & No. ppl |
|---|---|
| **MyHR 1. Health Care Provider access for timely & appropriate care** | |
| *I like the idea of doctors being able to look and say this is the history, it's all there. Doctors having that accessibility is more important than me worrying about every Tom, Dick and Harry getting into my files. Int 11*<br><br>*I think it's very good idea and I have been on it. Well, I first heard about it [MyHR] from my GP couple of years ago when she mentioned it to me and how it was involved, and I thought it was a good idea. My GP asked if I would like to go on the health record so if I was anywhere else and I needed something like a doctor's advice, and I said yes I was happy to do it and I haven't changed my mind yet. It suits me down to the ground. Int 34* | 11, 13, 19, 30, 34, 41, 48<br><br>Total = 7 |
| **MyHR 2. Managing health for family** | |
| *I know that the new Australian health service online, which is called my health and I know with my mother it has been very useful to have access to that. It basically helps me work out what services she has access to and it centralises it all so that if she needs an OT or when she needs particular, specific healthcare through the Government it can be managed all in one place. Int 20* | 20<br><br>Total = 1 |
| **MyHR 3. Nothing to hide - not concerned about security** | |
| *I think the government owns that they can use it to whatever advantage they want to use it. I have got nothing to hide. I'm not one of these people that says you can't look at this, you can't look at that. They can look at my file any time. I don't care. It doesn't mean a thing to me that security. Not at all. Int 50* | 06, 09, 24, 50Total = 4 |

Table 10 barriers to using or accessing the My Health Record and selected quotes

| MyHR Theme & selected quotes | Id & No. ppl |
|---|---|
| **MyHR 4. Security concerns / lack of trust in Government / others accessing info** | |
| *I actually don't have a My Health Record because I don't trust the government with the internet security to the position where I am willing to have absolutely everything from me accessed on there by any other doctor who chooses. So I prefer to be carrying that information with me or have my family know that information. I am really concerned that there are some very clever hackers out there. Int 31*<br><br>*Just keep the records safe is the most important thing. I have always worried about private entities getting their hands on my health records because then I will be inundated with ads for whatever all the time or they might sell it off. Int 22* | 14, 22, 31, 35, 40, 42<br><br>Total = 6 |
| **MyHR 5. Don't know how to use MyHR, how to access, what is stored, how to have control** | |
| *I'm not quite sure what's stored and what's not. I first got onto this my health what's it called and I spoke to the doctor about it and he said I'm probably best not to even be on it. I'm still on it but I don't look after anything. I'm not really sure about all the sort of records that are stored. I don't know enough about it… I don't really understand a lot of it or what's stored or what should be stored, what shouldn't be stored and all the rest of it. Int 23*<br><br>*My GP, for instance, keeps my medical records and I believe I have a My Health Record but I don't have direct access to that… Personally, I'm not sure how I could get direct access to that or have some say or control over which medical professionals get access to that. I think after all it's my data. I would like to know who is using it and what is on the record. Int 33* | 05, 08, 23, 33<br><br>Total = 4 |
| **MyHR 6. Don't see the need for My Health Record** | |
| *I opted out of the My Health Record because I just didn't want the bulk of my data sitting online. I don't think it's necessary. I'm pretty stable at this point in my life. I live in one area, I go to one particular clinic, it's not like I'm not on a lot of medication. I'm fortunate that I don't have a lot of health complaints so there is not a lot of things that anybody should be able to access. I don't have chronic diseases. Int 28* | 11, 28<br><br>Total = 2 |

| **MyHR 7. Incompatible / Inconsistent systems** | |
|---|---|
| *We were travelling around Australia and I did it [My Health Record] before I left Darwin. I put up our health record for easy access for all the doctors wherever I went. In WA, Queensland and South Australia it didn't work. The only place it seemed to work was here in Victoria… I don't think it ever got uploaded properly but everywhere you go you say I have an eHealth record because that's what you are meant to do, and they are meant to be able to access it. But a lot of doctors didn't know even what we were talking about. Int 41* | 41<br><br>Total = 1 |
| **MyHR 8. Software difficult to use - passwords** | |
| *I joined ages ago and I can't remember the password so I haven't bothered. You know a lot of people can't remember the password so they don't bother to access the My Health Record and see what it says. Int 48*<br><br><br>*I would like to see it fixed and that it was easier to access. Make it simple. Well, I've tried to register for health reasons you know but I can't get into it because I've gotta have a password and because I am already in Centrelink and it's just crazy. It's unbelievable! It says to go to another site because they are trying to link them all. Because I don't have a password I can't get in to the next one so I gave up. I tried and I tried but I thought it's too hard. I can't. I'll have to give up. It's as simple as that. Int 45* | 45, 48<br><br><br><br>Total = 2 |
| **MyHR 9. Unable to manage records for children** | |
| *I had to go recently on the My Health Record in relation to my daughter having some surgery and we had to go in and deal with some stuff. The health records are linking Medicare… at the federal level and we had to go in because my daughter is now technically an adult even though she's only 14. Medicare sees her as an adult so we have had issues in terms of not being able to look at her records. Int 02* | 02<br><br><br>Total = 1 |

# Appendix G lower triangular proximity matrices for identification of relationships in concept maps

Table 11 Lower triangular matrix – relationship between themes and participant IDs - barriers

| Themes | T1 | T2 | T3 | T4 | T5 | T6 | T7 | T8 | T9 | T10 | T11 | T12 | T13 | T14 | T15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T1 | 13 14 16 22 26 28 33 35 36 37 39 42 45 | | | | | | | | | | | | | | |
| T2 | 26 28 | 01 04 05 06 09 23 26 28 29 40 | | | | | | | | | | | | | |
| T3 | 13 28 33 | 01 28 29 | 01 05 13 28 29 33 47 | | | | | | | | | | | | |
| T4 | 39 | 04 | | 04 12 19 38 39 50 | | | | | | | | | | | |
| T5 | | 05 23 38 | 05 | 38 | 02 03 05 23 38 | | | | | | | | | | |
| T6 | | 06 23 | | | 23 | 06 07 10 23 30 | | | | | | | | | |
| T7 | 22 28 33 | 28 | 28 33 | | 03 | | 03 11 18 22 24 25 28 33 48 49 | | | | | | | | |
| T8 | 26 35 37 41 | 26 40 | | | | | 11 | 11 20 26 31 35 37 40 42 | | | | | | | |
| T9 | 13 26 33 42 | 04 26 40 | 13 | 04 | | | 25 33 | 26 40 42 | 04 13 25 26 33 40 41 42 | | | | | | |
| T10 | 39 42 | 40 | | 38 39 | 38 | | 49 | 31 40 42 | 40 42 | 27 31 38 39 40 42 49 | | | | | |
| T11 | 14 | | 47 | 50 | | | 11 | 11 | 40 42 | | 08 11 14 15 27 47 50 | | | | |
| T12 | 45 | | | | | | 25 48 | 31 | 25 41 | | 08 | 08 25 31 41 45 48 | | | |
| T13 | 14 | 04 | | 19 50 | | | 49 | | | 49 | 14 15 | | 14 15 19 49 50 | | |
| T14 | | 04 | | 04 | 02 | | 48 | | 04 | | | 48 | | 02 04 10 48 | |
| T15 | 37 | | | 12 | | | 48 | 37 | | | | 48 | | 48 | 12 37 48 |

Table 12 Lower triangular matrix – relationship between themes and participant IDs - enablers

| Themes | T16 | T17 | T18 | T19 | T20 | T21 |
|---|---|---|---|---|---|---|
| T16 | 03, 07, 08, 11, 14, 17, 18, 20, 21, 22, 26, 27, 28, 31, 33, 34, 35, 36, 37, 42, 43, 46, 48, 49 | | | | | |
| T17 | 07 11 17 20 34 | 06, 07, 11, 13, 17, 19, 20, 30, 34, 41 | | | | |
| T18 | 07 18 | 06 07 | 01, 02, 06, 07, 09, 10, 18, 24, 50 | | | |
| T19 | 18 22 34 36 37 | 19 34 | 18 | 18, 19, 22, 34, 36, 37, 39, 45 | | |
| T20 | 03 21 33 | 06 | 06 | | 03, 05, 06, 12, 21, 33 | |
| T21 | 26 36 43 | 06 19 | 02 06 09 50 | 19 36 | 05 06 | 02, 05, 06, 09, 19, 25,26, 32, 36, 38, 43, 44, 50 |

# Appendix H Additional tables from CATI data

## Table 13 Participant demographics

|  |  | N (%) |
|---|---|---|
| **Sex** |  |  |
|  | Women | 536 (54) |
|  | Men | 462 (46) |
| **Age** |  |  |
|  | 18 to <25 | 15 (2) |
|  | 25 to <30 | 7 (1) |
|  | 30 to <35 | 11 (1) |
|  | 35 to <40 | 14 (1) |
|  | 40 to <45 | 39 (4) |
|  | 45 to <50 | 41 (4) |
|  | 50 to <55 | 75 (8) |
|  | 55 to <60 | 83 (8) |
|  | 60 to <65 | 136 (14) |
|  | 65 to <70 | 166 (17) |
|  | 70 to <75 | 177 (18) |
|  | 75 to <80 | 114 (11) |
|  | 80 to <85 | 75 (8) |
|  | 85+ | 45 (5) |
| **Speaks English at home** |  |  |
|  | Yes | 990 (99) |
|  | No | 8 (1) |
| **Aboriginal or Torres Strait Islander** |  |  |
|  | Yes | 18 (2) |
|  | No | 980 (98) |
| **Education level** |  |  |
|  | Did not complete primary school | 2 (0) |
|  | Primary school | 89 (9) |
|  | Year 10 | 218 (22) |
|  | Year 12 | 136 (14) |
|  | Trade, apprenticeship, Diploma or TAFE | 246 (25) |
|  | University | 307 (31) |
| **ARIA+ (2011) score** |  |  |
|  | Accessible (ARIA+ value 0.2 to 2.4) | 954 (96) |
|  | Moderately Accessible (ARIA+ value 2.4 to 5.92) | 44 (4) |

Table 14 Self-rated health, chronic diseases and conditions and contact with health professionals.

|  |  | N (%) |
|---|---|---|
| **Self-rated health** |  |  |
|  | Excellent | 170 (17) |
|  | Very good | 270 (27) |
|  | Good | 293 (29) |
|  | Fair | 165 (17) |
|  | Poor | 76 (8) |
|  | Very poor | 24 (2) |
| **Number of conditions or illnesses** |  |  |
|  | 0 | 428 (43) |
|  | 1 | 338 (34) |
|  | 2 | 161 (16) |
|  | 3 | 49 (5) |
|  | 4 | 12 (1) |
|  | 5 | 5 (1) |
|  | 6 or more | 5 (1) |
| **Number of contacts with a health professional in the last 12 months** |  |  |
|  | >12 | 269 (27) |
|  | 7 to 12 | 196 (20) |
|  | 2 to 6 | 446 (45) |
|  | 1 or none | 87 (9) |
|  | >12 | 269 (27) |

Table 15 Use of the internet to access health-related information

|  |  | N (%) |
|---|---|---|
| **Use of internet to access health-related information** |  |  |
|  | Once a week or more often | 76 (8) |
|  | Several times a month | 61 (6) |
|  | Approximately once a month | 102 (10) |
|  | Approximately once every two months | 71 (7) |
|  | A few times within the past year | 268 (27) |
|  | No, never | 412 (41) |
|  | Don't know/NA | 8 (1) |
| **How internet is accessed* (among internet users)** |  |  |
|  | Smartphone | 194 (33) |
|  | Tablet | 203 (35) |
|  | Computer | 396 (68) |
| **Why internet is not used to access health-related information* (among non-internet users)** |  |  |
|  | I don't know how to | 74 (18) |
|  | I don't know what's out there | 5 (1) |
|  | I don't want to | 92 (22) |
|  | I'm not sure I'd get what I need | 17 (4) |
|  | I can't afford it | 1 (1) |
|  | I don't have the right technology (equipment) | 88 (21) |
|  | I'm not confident enough to use computers/smartphones/iPads | 39 (9) |
|  | I'm not confident I'd be able to understand the information by myself | 8 (2) |
|  | I prefer face-to-face interaction with health services | 170 (41) |

* Participants selected all options that applied to them

Table 16 Comparison of CATI participants with the Western Victoria Primary Health Network (PHN) population

| | CATI sample (%) | Western Victoria PHN (%) |
|---|---|---|
| **Sex** | | |
| Women | 54 | 51 |
| Men | 46 | 49 |
| **Age** | | |
| <55 years | 20 | 68 |
| 55 to 70 | 39 | 19 |
| >70 years | 41 | 13 |
| **Aboriginal or Torres Strait Islander** | | |
| Yes | 2 | 1 |
| No | 98 | 93 |
| Not stated | | 6 |
| | | |
| **Highest educational attainment** | | |
| Year 10 or below | 31 | |
| Year 12 | 14 | |
| Trade certificate, apprenticeship, Diploma or college/TAFE certificate | 25 | 24 |
| Tertiary education | 31 | 14 |
| Not stated | | 9 |

Source of data (15)

Table 17 Awareness, engagement and use or intention to use My Health Record for the total population and by demographics of interest

| | N | Not sure if have | Don't have | Have MyHRand use it | Have MyHR don't use it but intend to | Have MyHRdon't use it and don't intend to | Have MyHRdon't use it and not sure if intend to |
|---|---|---|---|---|---|---|---|
| | | % (95% CI) | % (95% CI) | % (95% CI) | % (95% CI) | % (95% CI) | % (95% CI) |
| **Total** | 998 | 36 (33, 39) | 32 (29, 35) | 6 (5, 8) | 10 (9, 12) | 9 (7, 11) | 7 (5, 9) |
| **Sex** | | | | | | | |
| Men | 462 | 41 (36, 45) | 28 (24, 33) | 6 (4, 9) | 9 (7, 12) | 10 (8, 13) | 6 (4, 8) |
| Women | 536 | 32 (28, 36) | 35 (31, 39) | 7 (5, 9) | 12 (9, 15) | 7 (5, 10) | 8 (6, 10) |
| **Age** | | | | | | | |
| Age <55 years | 202 | 40 (34, 47) | 26 (21, 33) | 8 (5, 13) | 9 (6, 14) | 7 (4, 11) | 9 (6, 14) |
| Age 55 to <70 years | 385 | 34 (30, 39) | 29 (25, 34) | 7 (5, 10) | 14 (10, 17) | 10 (7, 13) | 6 (4, 9) |
| Age >=70 years | 411 | 36 (31, 40) | 38 (33, 43) | 5 (3, 7) | 8 (6, 11) | 8 (6, 11) | 6 (4, 9) |
| Aboriginal or Torres Strait Islander | | | | | | | |
| Yes | 18 | 39 (62, 0) | 22 (47, 0) | 22 (47, 0) | 11 (35, 0) | 6 (31, 0) | 0 (0, 0) |
| No | 980 | 36 (33, 39) | 32 (29, 35) | 6 (5, 8) | 10 (9, 12) | 9 (7, 11) | 7 (5, 9) |
| **Highest educational attainment** | | | | | | | |
| Year 9 or below | 91 | 38 (29, 48) | 39 (30, 49) | 4 (2, 11) | 5 (2, 12) | 9 (4, 16) | 4 (2, 11) |
| Year 10 | 218 | 37 (30, 43) | 35 (29, 41) | 5 (2, 8) | 9 (6, 14) | 11 (7, 16) | 4 (2, 8) |
| Year 12 | 136 | 36 (28, 44) | 32 (25, 41) | 5 (2, 10) | 9 (5, 15) | 9 (5, 15) | 9 (5, 15) |
| Trade certificate, apprenticeship, Diploma or college/TAFE certificate | 246 | 36 (30, 42) | 32 (26, 38) | 7 (5, 11) | 9 (6, 13) | 9 (6, 13) | 7 (5, 11) |
| Tertiary education | 307 | 35 (30, 41) | 28 (23, 33) | 8 (5, 11) | 14 (11, 19) | 7 (4, 10) | 8 (6, 12) |

Table 18 Awareness, engagement and use or intention to use My Health Record by self-rated health, chronic diseases and conditions, and contact with health professionals

| | N | Not sure if have | Don't have | Have MyHR and use it | Have MyHR, don't use it but intend to | Have MyHR, don't use it and don't intend to | Have MyHR, don't use it and not sure if intend to |
|---|---|---|---|---|---|---|---|
| | | % (95% CI) | % (95% CI) | % (95% CI) | % (95% CI) | % (95% CI) | % (95% CI) |
| **Number of contacts with a health professional in the last 12 months** | | | | | | | |
| >12 | 269 | 35 (29, 40) | 30 (25, 36) | 9 (6, 13) | 10 (7, 15) | 8 (5, 12) | 8 (5, 12) |
| 7 to 11 | 196 | 37 (30, 44) | 29 (23, 36) | 7 (4, 12) | 10 (7, 15) | 9 (5, 14) | 8 (5, 13) |
| 2 to 6 | 446 | 36 (32, 41) | 32 (28, 37) | 5 (3, 8) | 11 (8, 14) | 9 (6, 12) | 7 (5, 9) |
| 1 or none | 87 | 38 (28, 49) | 43 (33, 53) | 2 (1, 9) | 7 (3, 15) | 9 (5, 17) | 1 (0, 8) |
| **Self-rated health** | | | | | | | |
| Excellent | 170 | 36 (29, 43) | 34 (27, 41) | 7 (4, 12) | 9 (6, 15) | 8 (5, 13) | 6 (3, 11) |
| Very good | 270 | 37 (31, 43) | 30 (25, 36) | 6 (3, 9) | 12 (9, 16) | 7 (5, 11) | 8 (5, 12) |
| Good | 293 | 35 (30, 41) | 33 (27, 38) | 7 (4, 10) | 9 (7, 13) | 9 (6, 13) | 7 (5, 11) |
| Fair | 165 | 33 (26, 40) | 32 (25, 40) | 7 (4, 12) | 9 (6, 15) | 12 (7, 17) | 7 (4, 12) |
| Poor or Very Poor | 100 | 42 (33, 52) | 33 (24, 43) | 4 (2, 10) | 12 (7, 20) | 6 (3, 13) | 3 (1, 9) |
| **Number of conditions** | | | | | | | |
| 0 | 428 | 36 (32, 41) | 34 (30, 39) | 7 (5, 9) | 10 (7, 13) | 7 (5, 9) | 7 (5, 10) |
| 1 | 338 | 35 (30, 40) | 33 (29, 39) | 6 (4, 9) | 9 (7, 13) | 11 (8, 14) | 7 (4, 10) |
| 2 | 161 | 37 (30, 45) | 27 (21, 35) | 7 (4, 12) | 11 (7, 16) | 9 (5, 14) | 9 (6, 15) |
| 3+ | 71 | 38 (28, 50) | 24 (15, 35) | 7 (3, 16) | 17 (10, 27) | 11 (6, 21) | 3 (1, 11) |
| **Asthma** | | | | | | | |
| No | 956 | 36 (33, 39) | 32 (29, 35) | 6 (5, 8) | 10 (9, 12) | 9 (7, 11) | 6 (5, 8) |
| Yes | 42 | 33 (21, 49) | 29 (17, 44) | 2 (0, 15) | 10 (4, 23) | 10 (4, 23) | 17 (8, 31) |
| **Cancer** | | | | | | | |
| No | 945 | 36 (33, 39) | 33 (30, 36) | 6 (5, 8) | 10 (8, 12) | 8 (7, 10) | 7 (5, 9) |
| Yes | 53 | 34 (23, 48) | 19 (10, 32) | 6 (2, 16) | 17 (9, 30) | 17 (9, 30) | 8 (3, 18) |
| **Cardiovascular disease** | | | | | | | |
| No | 869 | 36 (33, 39) | 33 (30, 36) | 6 (5, 8) | 10 (8, 12) | 8 (6, 10) | 7 (6, 9) |
| Yes | 129 | 38 (30, 47) | 26 (19, 34) | 9 (5, 15) | 11 (7, 18) | 12 (8, 19) | 5 (2, 10) |

**Diabetes**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| No | 914 | 36 (33, 40) | 32 (29, 35) | 6 (5, 8) | 10 (9, 13) | 9 (7, 11) | 7 (5, 9) |
| Yes | 84 | 31 (22, 42) | 37 (27, 48) | 7 (3, 15) | 10 (5, 18) | 10 (5, 18) | 6 (2, 14) |

**Mental health condition**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| No | 942 | 36 (33, 39) | 32 (29, 35) | 6 (5, 8) | 10 (9, 13) | 9 (7, 11) | 7 (5, 8) |
| Yes | 56 | 34 (23, 47) | 32 (21, 45) | 9 (4, 20) | 7 (3, 18) | 7 (3, 18) | 11 (5, 22) |

**Musculoskeletal condition**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| No | 804 | 36 (33, 40) | 33 (30, 36) | 6 (4, 8) | 10 (8, 12) | 8 (7, 10) | 7 (5, 9) |
| Yes | 194 | 34 (28, 41) | 28 (22, 35) | 8 (5, 13) | 12 (8, 18) | 10 (6, 15) | 8 (5, 12) |

**Other' disease or condition**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| No | 701 | 36 (32, 39) | 33 (29, 36) | 7 (5, 9) | 9 (7, 11) | 9 (7, 11) | 8 (6, 10) |
| Yes | 297 | 37 (31, 42) | 30 (25, 35) | 5 (3, 8) | 14 (11, 19) | 9 (6, 13) | 5 (3, 8) |

Note: Musculoskeletal condition refers to arthritis and/or chronic pain

Table 19 Use of My Health Record by use of the internet to access health-related information

| | N | Not sure if have | Don't have | Have MyHR and use it | Have MyHR, don't use it but intend to | Have MyHR, don't use it and don't intend to | Have MyHR, don't use it and not sure if intend to |
|---|---|---|---|---|---|---|---|
| | | % (95% CI) | % (95% CI) | % (95% CI) | % (95% CI) | % (95% CI) | % (95% CI) |
| **Use of internet to access health-related information** | | | | | | | |
| Once a week or more often | 76 | 25 (16, 36) | 32 (23, 44) | 8 (4, 16) | 14 (8, 24) | 6 (3, 15) | 14 (8, 24) |
| Several times a month | 61 | 34 (47, 0) | 30 (42, 0) | 11 (22, 0) | 13 (24, 0) | 0 (0, 0) | 11 (22, 0) |
| Approximately once a month | 102 | 37 (28, 47) | 25 (18, 35) | 12 (7, 20) | 13 (8, 21) | 5 (2, 11) | 8 (4, 15) |
| Approximately once every two months | 71 | 39 (28, 51) | 25 (16, 36) | 10 (5, 19) | 13 (7, 22) | 7 (3, 16) | 7 (3, 16) |
| A few times within the past year | 268 | 32 (26, 38) | 30 (25, 36) | 6 (4, 10) | 15 (11, 20) | 11 (8, 16) | 6 (4, 10) |
| No, never | 412 | 40 (35, 45) | 36 (32, 41) | 4 (2, 6) | 5 (4, 8) | 10 (7, 13) | 5 (3, 7) |
| Don't know/NA | 8 | 50 (20, 80) | 38 (13, 72) | 0 (0, 0) | 0 (0, 0) | 0 (0, 0) | 13 (2, 54) |
| **How internet is accessed* (among internet users)** | | | | | | | |
| Smartphone users | 253 | 32 (26, 38) | 30 (24, 35) | 8 (5, 12) | 11 (7, 15) | 11 (7, 15) | 9 (6, 14) |
| Tablet users | 325 | 34 (29, 39) | 28 (24, 33) | 9 (6, 12) | 17 (13, 21) | 6 (4, 9) | 7 (5, 11) |
| Computer users | 194 | 38 (31, 45) | 22 (17, 29) | 9 (6, 14) | 17 (12, 23) | 6 (3, 10) | 9 (6, 14) |
| Computer only | 203 | 31 (25, 38) | 31 (25, 38) | 9 (6, 14) | 17 (13, 23) | 6 (4, 11) | 5 (3, 9) |
| Multiple devices | 396 | 32 (28, 37) | 27 (23, 32) | 8 (6, 11) | 15 (11, 18) | 10 (7, 13) | 9 (6, 12) |
| **Why internet is not used to access health-related information* (among non-internet users)** | | | | | | | |
| I don't know how to | 74 | 36 (26, 48) | 43 (32, 55) | 3 (1, 10) | 1 (0, 9) | 11 (5, 20) | 5 (2, 14) |
| I don't know what's out there | 5 | 60 (20, 90) | 20 (3, 69) | | 20 (3, 69) | | |
| I don't want to | 92 | 36 (27, 46) | 38 (29, 48) | 4 (2, 11) | 4 (2, 11) | 11 (6, 19) | 7 (3, 14) |
| I'm not sure I'd get what I need | 17 | 29 (13, 54) | 24 (9, 49) | 6 (1, 32) | 24 (9, 49) | 18 (6, 43) | |
| I can't afford it | 1 | 1 | | | | | |
| I don't have the right technology (equipment) | 88 | 32 (23, 42) | 44 (34, 55) | 2 (1, 9) | 3 (1, 10) | 11 (6, 20) | 7 (3, 14) |
| I'm not confident enough to use computers/smartphones/iPads | 39 | 54 (38, 69) | 31 (18, 47) | | | 13 (5, 27) | 3 (0, 16) |
| I'm not confident I'd be able to understand the information by myself | 8 | 38 (13, 72) | 25 (6, 62) | 13 (2, 54) | 13 (2, 54) | 13 (2, 54) | |
| I prefer face-to-face interaction with health services | 170 | 43 (36, 50) | 32 (26, 40) | 4 (2, 8) | 6 (3, 11) | 10 (6, 16) | 5 (3, 10) |

Table 20 Demographic predictors of My Health Record awareness^

| | N | Not sure<br>mean or proportion<br>(95% CI) N=359 | Sure<br>mean or proportion<br>(95% CI) N=639 | Odds Ratio<br>(95% CI) | p-value |
|---|---|---|---|---|---|
| **Sex** | | | | | |
| Men | 462 | 40 (36, 45) | 60 (55, 64) | | |
| Women | 536 | 32 (28, 36) | 68 (64, 72) | 1.4 (1.1, 1.9) | 0.006 |
| **Age** | | | | | |
| Years of age (continuous) | 998 | 64 (63, 66) | 65 (64, 66) | 1 (1, 1) | 0.284 |
| **Highest educational attainment*** | | | | | |
| Completed yr 11 or below | 309 | 37 (32, 42) | 63 (58, 68) | | |
| Completed year 12 | 136 | 36 (28, 44) | 64 (56, 72) | 1.1 (0.7, 1.7) | 0.707 |
| Completed a trade certificate, apprenticeship, Diploma or college/TAFE certificate | 246 | 36 (30, 42) | 64 (58, 70) | 1.1 (0.8, 1.5) | 0.652 |
| Completed a university degree or above | 307 | 35 (30, 41) | 65 (59, 70) | 1.1 (0.8, 1.6) | 0.513 |
| **Number of long-standing illnesses or disabilities*** | | | | | |
| No conditions | 428 | 36 (32, 41) | 64 (59, 68) | | |
| 1 condition | 338 | 35 (30, 40) | 65 (60, 70) | 1 (0.8, 1.4) | 0.773 |
| >=2 conditions | 232 | 38 (31, 44) | 63 (56, 69) | 0.9 (0.7, 1.3) | 0.593 |
| **Self-rated health*** | | | | | |
| Excellent | 170 | 36 (29 ,43) | 64 (57, 71) | | |
| Very good | 270 | 37 (31, 43) | 63 (57, 69) | 0.9 (0.6, 1.4) | 0.773 |
| Good | 293 | 35 (30, 40) | 65 (60, 70) | 1 (0.7, 1.5) | 0.865 |
| Fair | 165 | 33 (26, 40) | 67 (60, 74) | 1.1 (0.7, 1.8) | 0.616 |
| Poor or Very Poor | 100 | 42 (33, 52) | 58 (48, 67) | 0.8 (0.5, 1.3) | 0.299 |
| **Use of the internet to access health-related information*** | | | | | |
| No, or NA | 420 | 40 (36, 45) | 60 (55, 64) | | |
| Yes | 578 | 33 (29, 37) | 67 (63, 71) | 1.5 (1.1, 2) | 0.003 |
| **Number of contacts with a health professional over the past 12 months*** | | | | | |
| 12 or more | 269 | 35 (29, 40) | 65 (60, 71) | | |
| 7 to 11 | 196 | 37 (30, 44) | 63 (56, 70) | 0.9 (0.6, 1.3) | 0.648 |
| 2 to 6 | 446 | 36 (32, 41) | 64 (59, 68) | 0.9 (0.7, 1.3) | 0.702 |
| 1 or none | 87 | 38 (28, 49) | 62 (51, 72) | 0.9 (0.5, 1.5) | 0.681 |

^Participants were asked 'Do you have a My Health Record?'; those categorised as 'not sure' responded 'not sure'; those categorised as 'sure' responded 'yes' or 'no'. * Analyses were adjusted for age

Table 21 eHealth literacy and health literacy predictors of the participant's My Health Record awareness^

| | Not sure<br><br>mean (95% CI) N=359 | Sure<br>mean (95% CI)<br>N=639 | Odds Ratio (95%<br>CI) | p-value |
|---|---|---|---|---|
| **eHealth Literacy scales (range 1 to 4)** | | | | |
| **1. Using technology to process health information.** | | | | |
| (continuous score) | 2.21 (2.15, 2.28) | 2.41 (2.37, 2.46) | 1.77 (1.42, 2.22) | <0.001 |
| **2. Understanding of health concepts and language.** | | | | |
| (continuous score) | 2.91 (2.87, 2.95) | 2.95 (2.92, 2.98) | 1.28 (0.92, 1.77) | 0.14 |
| **3. Ability to actively engage with digital services.** | | | | |
| (continuous score) | 2.35 (2.27, 2.42) | 2.52 (2.47, 2.56) | 1.53 (1.25, 1.89) | <0.001 |
| **4. Feel safe and in control.** | | | | |
| (continuous score) | 2.51 (2.46, 2.57) | 2.64 (2.60, 2.68) | 1.47 (1.17, 1.85) | 0.001 |
| **5. Motivated to engage with digital services.** | | | | |
| (continuous score) | 2.28 (2.21, 2.35) | 2.47 (2.43, 2.51) | 1.75 (1.40, 2.19) | <0.001 |
| **6. Access to digital services that work.** | | | | |
| (continuous score) | 2.41 (2.36, 2.47) | 2.57 (2.53, 2.60) | 1.99 (1.51, 2.63) | <0.001 |
| **7. Digital services that suit individual needs.** | | | | |
| (continuous score) | 2.28 (2.21, 2.34) | 2.44 (2.40, 2.49) | 1.63 (1.30, 2.04) | <0.001 |
| **Health literacy** | | | | |
| **Health Literacy Questionnaire scales (range 1 to 4)** | | | | |
| **1. Feeling understood and supported by healthcare providers.** | | | | |
| (continuous score) | 3.14 (3.08, 3.19) | 3.18 (3.14, 3.22) | 1.15 (0.90, 1.48) | 0.263 |
| **3. Actively managing my health.** | | | | |
| (continuous score) | 3.03 (2.99, 3.08) | 3.01 (2.98, 3.04) | 0.89 (0.66, 1.20) | 0.455 |
| **5. Social support for health.** | | | | |
| (continuous score) | 3.04 (2.99, 3.09) | 3.05 (3.01, 3.09) | 1.02 (0.78, 1.33) | 0.889 |
| **Health Literacy Questionnaire scale (range 1 to 5)** | | | | |
| **7. Navigating the healthcare system** | | | | |
| (continuous score) | 3.91 (3.84, 3.99) | 3.96 (3.91, 4.02) | 1.10 (0.92, 1.31) | 0.292 |

^Participants were asked 'Do you have a My Health Record?'; those categorised as 'not sure' responded 'not sure'; those categorised as 'sure' responded 'yes' or 'no'. Analyses were adjusted for age

Table 22 Demographic predictors of My Health Record engagement^

| | N | No, I don't have MyHR<br>mean or proportion<br>(95% CI) | Yes, I have MyHR<br>mean or proportion<br>(95% CI) | Odds Ratio<br>(95% CI) | p-value |
|---|---|---|---|---|---|
| **Sex** | | | | | |
| Men | 275 | 48 (42 ,54) | 52 (46 ,58) | | |
| Women | 364 | 52 (47 ,57) | 48 (43 ,53) | 0.9 (0.6, 1.2) | 0.315 |
| **Age** | | | | | |
| Years of age (continuous) | 639 | 67 (66 ,69) | 63 (62 ,65) | 1 (1, 1) | <0.001 |
| **Highest educational attainment*** | | | | | |
| Year 11 or below | 195 | 57 (50 ,64) | 43 (36 ,50) | | |
| Year 12 | 87 | 51 (40 ,61) | 49 (39 ,60) | 1.1 (0.6, 1.8) | 0.75 |
| Trade, apprenticeship, Diploma or TAFE | 158 | 49 (42 ,57) | 51 (43 ,58) | 1.2 (0.8, 1.9) | 0.397 |
| University | 199 | 43 (36 ,50) | 57 (50 ,64) | 1.5 (1, 2.3) | 0.054 |
| **Number of long-standing illnesses or disabilities*** | | | | | |
| No conditions | 273 | 53 (47 ,59) | 47 (41 ,53) | | |
| 1 condition | 221 | 51 (45 ,58) | 49 (42 ,55) | 1.2 (0.8, 1.7) | 0.303 |
| >=2 conditions | 145 | 42 (34 ,50) | 58 (50 ,66) | 1.8 (1.2, 2.7) | 0.006 |
| **Self-rated health*** | | | | | |
| Excellent | 109 | 52 (43 ,61) | 48 (39 ,57) | | |
| Very good | 170 | 48 (40 ,55) | 52 (45 ,60) | 1.2 (0.8, 2) | 0.382 |
| Good | 191 | 50 (43 ,57) | 50 (43 ,57) | 1.2 (0.7, 1.9) | 0.463 |
| Fair | 111 | 48 (39 ,57) | 52 (43 ,61) | 1.3 (0.8, 2.3) | 0.305 |
| Poor or Very Poor | 58 | 57 (44 ,69) | 43 (31 ,56) | 0.9 (0.5, 1.7) | 0.71 |
| **Use of the internet to access health-related information*** | | | | | |
| No, or NA | 251 | 61 (55 ,67) | 39 (33 ,45) | | |
| Yes | 388 | 43 (38 ,48) | 57 (52 ,62) | 1.8 (1.3, 2.6) | 0.001 |
| **Number of contacts with a health professional over the past 12 months*** | | | | | |
| >12 | 176 | 46 (39 ,53) | 54 (47 ,61) | | |
| 7 to 12 | 124 | 46 (37 ,55) | 54 (45 ,63) | 1 (0.6, 1.6) | 0.996 |
| 0 to 6 | 339 | 53 (48 ,59) | 47 (41 ,52) | 0.7 (0.5, 1) | 0.061 |

^Participants were asked 'Do you have a My Health Record?' those categorised as 'No, I don't have MyHR' responded 'No', those categorised as 'Yes, I have MyHR' responded 'Yes'  * Analyses were adjusted for age

Table 23 eHealth literacy and health literacy predictors of My Health Record engagement^

| | No, I don't have MyHR mean (95% CI) N=319 | Yes, I have MyHR mean (95% CI) N=320 | Odds Ratio (95% CI) | p-value |
|---|---|---|---|---|
| **eHealth Literacy scales (range 1 to 4)** | | | | |
| **1. Using technology to process health information.** | | | | |
| (continuous score) | 2.33 (2.27, 2.39) | 2.50 (2.44, 2.56) | 1.80 (1.34, 2.42) | <0.001 |
| **2. Understanding of health concepts and language.** | | | | |
| (continuous score) | 2.88 (2.84, 2.92) | 3.02 (2.97, 3.06) | 2.62 (1.70, 4.02) | <0.001 |
| **3. Ability to actively engage with digital services.** | | | | |
| (continuous score) | 2.39 (2.33, 2.45) | 2.64 (2.58, 2.71) | 2.12 (1.60, 2.81) | <0.001 |
| **4. Feel safe and in control.** | | | | |
| (continuous score) | 2.57 (2.51, 2.63) | 2.71 (2.65, 2.77) | 1.61 (1.20, 2.14) | 0.001 |
| **5. Motivated to engage with digital services.** | | | | |
| (continuous score) | 2.37 (2.32, 2.43) | 2.57 (2.51, 2.63) | 2.00 (1.48, 2.71) | <0.001 |
| **6. Access to digital services that work.** | | | | |
| (continuous score) | 2.50 (2.46, 2.55) | 2.63 (2.58, 2.68) | 1.90 (1.33, 2.70) | <0.001 |
| **7. Digital services that suit individual needs.** | | | | |
| (continuous score) | 2.35 (2.29, 2.41) | 2.53 (2.47, 2.59) | 1.89 (1.40, 2.55) | <0.001 |
| **Health Literacy Questionnaire scales (range 1 to 4)** | | | | |
| **1. Feeling understood and supported by healthcare providers.** | | | | |
| (continuous score) | 3.11 (3.06, 3.17) | 3.24 (3.19, 3.29) | 1.63 (1.19, 2.22) | 0.002 |
| **3. Actively managing my health.** | | | | |
| (continuous score) | 2.99 (2.94, 3.04) | 3.03 (2.98, 3.08) | 1.25 (0.87, 1.80) | 0.236 |
| **4. Social support for health.** | | | | |
| (continuous score) | 2.98 (2.93, 3.04) | 3.11 (3.06, 3.16) | 1.74 (1.25, 2.42) | 0.001 |
| **Health Literacy Questionnaire scale (range 1 to 5)** | | | | |
| **7. Navigating the healthcare system.** | | | | |
| (continuous score) | 3.93 (3.85, 4.01) | 4.00 (3.92, 4.08) | 1.15 (0.93, 1.42) | 0.201 |

^Participants were asked 'Do you have a My Health Record?' those categorised as 'No, I don't have MyHR' responded 'No', those categorised as 'Yes, I have MyHR' responded 'Yes'
*Analyses were adjusted for age

Table 24 Demographic predictors of using or intending to use My Health Record ^

| | N | No, I don't intend to use MyHR mean or proportion (95% CI) | Yes, I use MyHR or intend to mean or proportion (95% CI) | Odds Ratio (95% CI) | p-value |
|---|---|---|---|---|---|
| **Sex** | | | | | |
| Men | 117 | 41 (32 ,50) | 59 (50 ,68) | | |
| Women | 135 | 28 (21 ,36) | 72 (64 ,79) | 1.8 (1, 3) | 0 |
| **Age** | | | | | |
| Years of age (continuous) | 252 | 66 (63 ,68) | 62 (60 ,64) | 1 (1, 1) | 0.1 |
| **Highest educational attainment** | | | | | |
| Year 11 or below | 71 | 45 (34 ,57) | 55 (43 ,66) | | |
| Year 12 | 93 | 37 (27 ,47) | 63 (53 ,73) | 1.3 (0.7, 2.5) | 0.4 |
| Trade, apprenticeship, Diploma or TAFE | 88 | 23 (15 ,33) | 77 (67 ,85) | 2.5 (1.2, 5) | 0 |
| University | | | | | |
| No conditions | 99 | 28 (20 ,38) | 72 (62 ,80) | | |
| 1 condition | 86 | 42 (32 ,53) | 58 (47 ,68) | 0.6 (0.3, 1.1) | 0.1 |
| >=2 conditions | 67 | 33 (23 ,45) | 67 (55 ,77) | 1 (0.5, 1.9) | 0.9 |
| **Self-rated health** | | | | | |
| Excellent or very good | 109 | 31 (23 ,40) | 69 (60 ,77) | | |
| Good, fair, poor, or very poor | 143 | 36 (29 ,45) | 64 (55 ,71) | 0.9 (0.5, 1.5) | 0.6 |
| **Use of the internet to access health-related information** | | | | | |
| No, or NA | 78 | 53 (42 ,63) | 47 (37 ,58) | | |
| Yes | 174 | 26 (20 ,33) | 74 (67 ,80) | 3 (1.6, 5.4) | 0 |
| **Number of contacts with a health professional over the past 12 months** | | | | | |
| >6 | 125 | 31 (24 ,40) | 69 (60 ,76) | | |
| <=6 | 127 | 37 (29 ,46) | 63 (54 ,71) | 0.7 (0.4, 1.2) | 0.2 |

^Participants categorised as 'No, I don't intend to use MyHR' responded 'Yes' to the question 'Do you have a My Health Record', 'No' to the question 'Do you use your My Health Record' and 'No' to the question 'Do you intend to use your My Health Record'. Participants categorised as 'Yes, I use MyHR or intend to' responded 'Yes' to the question 'Do you have a My Health Record', and either responded 'Yes' to the question 'Do you use your My Health Record' or responded 'No' to the question 'Do you use your My Health Record' and 'Yes' to the question 'Do you intend to use your My Health Record'

Table 25 eHealth literacy and health literacy predictors of using or intending to use My Health Record ^

| | No, I don't intend to use MyHR | Yes, I use MyHR or intend to | | |
| --- | --- | --- | --- | --- |
| | mean (95% CI) N=86 | mean (95% CI) N=166 | OR (95% CI) | p-value |
| **eHealth Literacy scales** (range 1 to 4) | | | | |
| **1. Using technology to process health information.** | | | | |
| (continuous score) | 2.31 (2.21, 2.41) | 2.68 (2.60, 2.76) | 4.14 (2.34, 7.31) | <0.001 |
| **2. Understanding of health concepts and language.** | | | | |
| (continuous score) | 2.96 (2.89, 3.03) | 3.07 (3.01, 3.13) | 2.25 (1.08, 4.69) | 0.031 |
| **3. Ability to actively engage with digital services.** | | | | |
| (continuous score) | 2.38 (2.26, 2.50) | 2.81 (2.73, 2.89) | 4.44 (2.55, 7.75) | <0.001 |
| **4. Feel safe and in control.** | | | | |
| (continuous score) | 2.57 (2.44, 2.69) | 2.82 (2.74, 2.89) | 2.36 (1.43, 3.88) | 0.001 |
| **5. Motivated to engage with digital services.** | | | | |
| (continuous score) | 2.38 (2.28, 2.49) | 2.74 (2.67, 2.82) | 4.24 (2.36, 7.61) | <0.001 |
| **6. Access to digital services that work.** | | | | |
| (continuous score) | 2.55 (2.46, 2.65) | 2.72 (2.66, 2.79) | 2.49 (1.32, 4.69) | 0.005 |
| **7. Digital services that suit individual needs.** | | | | |
| (continuous score) | 2.36 (2.25, 2.48) | 2.67 (2.60, 2.75) | 3.48 (1.97, 6.15) | <0.001 |
| **Health Literacy scales** (range 1 to 4) | | | | |
| **1. Feeling understood and supported by healthcare providers.** | | | | |
| (continuous score) | 3.17 (3.07, 3.26) | 3.32 (3.24, 3.4) | 1.89 (1.10, 3.27) | 0.022 |
| **3. Actively managing my health.** | | | | |
| (continuous score) | 2.97 (2.89, 3.05) | 3.11 (3.04, 3.18) | 2.28 (1.18, 4.38) | 0.014 |
| **4. Social support for health.** | | | | |
| (continuous score) | 3.03 (2.93, 3.13) | 3.18 (3.11, 3.24) | 2.10 (1.15, 3.84) | 0.015 |
| **Health Literacy scales** (range 1 to 5) | | | | |
| **7. Navigating the healthcare system.** | | | | |
| (continuous score) | 3.92 (3.73, 4.10) | 4.03 (3.93, 4.13) | 1.24 (0.87, 1.75) | 0.234 |

^Participants categorised as 'No, I don't intend to use MyHR' responded 'Yes' to the question 'Do you have a My Health Record', 'No' to the question 'Do you use your My Health Record' and 'No' to the question 'Do you intend to use your My Health Record'. Participants categorised as 'Yes, I use MyHR or intend to' responded 'Yes' to the question 'Do you have a My Health Record', and either responded 'Yes' to the question 'Do you use your My Health Record' or responded 'No' to the question 'Do you use your My Health Record' and 'Yes' to the question 'Do you intend to use your My Health Record'

Table 26 eHealth literacy for the total population and by demographics of interest

| | 1. Using technology to process health information<br><br>mean (95% CI) | 2. Understanding of health concepts and language<br><br>mean (95% CI) | 3. Ability to actively engage with digital services<br><br>mean (95% CI) | 4. Feel safe and in control<br><br>mean (95% CI) | 5. Motivated to engage with digital services<br><br>mean (95% CI) | 6. Access to digital services that work<br><br>mean (95% CI) | 7. Digital services that suit individual needs<br><br>mean (95% CI) |
|---|---|---|---|---|---|---|---|
| **Total** | 2.3 (2.3, 2.4) | 2.9 (2.9, 3) | 2.5 (2.4, 2.5) | 2.6 (2.6, 2.6) | 2.4 (2.4, 2.4) | 2.5 (2.5, 2.5) | 2.4 (2.3, 2.4) |
| **Sex** | | | | | | | |
| Men | 2.3 (2.3, 2.4) | 2.9 (2.9, 3) | 2.4 (2.4, 2.5) | 2.6 (2.5, 2.6) | 2.4 (2.4, 2.5) | 2.5 (2.5, 2.6) | 2.4 (2.3, 2.4) |
| Women | 2.4 (2.3, 2.4) | 2.9 (2.9, 3) | 2.5 (2.4, 2.5) | 2.6 (2.6, 2.7) | 2.4 (2.3, 2.4) | 2.5 (2.5, 2.5) | 2.4 (2.3, 2.4) |
| **Age** | | | | | | | |
| Age <55 years | 2.6 (2.5, 2.7) | 3 (2.9, 3.1) | 2.8 (2.7, 2.9) | 2.6 (2.5, 2.7) | 2.6 (2.5, 2.6) | 2.6 (2.5, 2.7) | 2.6 (2.5, 2.6) |
| Age 55 to <70 years | 2.4 (2.3, 2.4) | 2.9 (2.9, 3) | 2.5 (2.4, 2.5) | 2.5 (2.5, 2.6) | 2.4 (2.3, 2.5) | 2.5 (2.5, 2.5) | 2.4 (2.3, 2.4) |
| Age >=70 years | 2.2 (2.2, 2.3) | 2.9 (2.9, 2.9) | 2.3 (2.2, 2.3) | 2.7 (2.6, 2.7) | 2.3 (2.3, 2.4) | 2.5 (2.4, 2.5) | 2.3 (2.3, 2.4) |
| **Aboriginal or Torres Strait Islander** | | | | | | | |
| Yes | 2.6 (2.4, 2.8) | 2.9 (2.8, 3.1) | 2.5 (2.4, 2.7) | 2.8 (2.6, 3) | 2.6 (2.5, 2.8) | 2.8 (2.6, 2.9) | 2.6 (2.4, 2.8) |
| No | 2.3 (2.3, 2.4) | 2.9 (2.9, 3) | 2.5 (2.4, 2.5) | 2.6 (2.6, 2.6) | 2.4 (2.4, 2.4) | 2.5 (2.5, 2.5) | 2.4 (2.3, 2.4) |
| **Highest educational attainment** | | | | | | | |
| Year 9 or below | 2.1 (2, 2.2) | 2.8 (2.7, 2.9) | 2.1 (2, 2.2) | 2.7 (2.7, 2.8) | 2.2 (2.1, 2.3) | 2.5 (2.4, 2.6) | 2.4 (2.2, 2.5) |
| Year 10 | 2.2 (2.2, 2.3) | 2.8 (2.8, 2.9) | 2.2 (2.2, 2.3) | 2.7 (2.6, 2.7) | 2.3 (2.2, 2.4) | 2.5 (2.4, 2.6) | 2.4 (2.3, 2.5) |
| Year 12 | 2.4 (2.3, 2.5) | 2.9 (2.9, 3) | 2.5 (2.4, 2.6) | 2.6 (2.5, 2.7) | 2.4 (2.3, 2.5) | 2.6 (2.5, 2.7) | 2.4 (2.3, 2.5) |
| Trade certificate, apprenticeship, Diploma or college/TAFE certificate | 2.3 (2.3, 2.4) | 2.9 (2.9, 3) | 2.5 (2.4, 2.6) | 2.6 (2.5, 2.7) | 2.4 (2.4, 2.5) | 2.5 (2.5, 2.6) | 2.4 (2.3, 2.5) |
| Tertiary education | 2.5 (2.4, 2.5) | 3 (3, 3.1) | 2.7 (2.6, 2.7) | 2.5 (2.5, 2.6) | 2.5 (2.4, 2.6) | 2.5 (2.4, 2.5) | 2.4 (2.3, 2.4) |

Table 27 eHealth literacy by self-rated health, chronic diseases and conditions, and contact with health professionals

| | 1. Using technology to process health information | 2. Understanding of health concepts and language | 3. Ability to actively engage with digital services | 4. Feel safe and in control | 5. Motivated to engage with digital services | 6. Access to digital services that work | 7. Digital services that suit individual needs |
|---|---|---|---|---|---|---|---|
| | mean (95% CI) | mean (95% CI) | mean (95% CI) | mean (95% CI) | mean (95% CI) | mean (95% CI) | mean (95% CI) |
| **Number of contacts with a health professional in the last 12 months** | | | | | | | |
| >12 | 2.4 (2.3, 2.5) | 2.9 (2.9, 3) | 2.4 (2.4, 2.5) | 2.5 (2.5, 2.6) | 2.4 (2.4, 2.5) | 2.5 (2.5, 2.6) | 2.4 (2.3, 2.5) |
| 7 to 11 | 2.4 (2.3, 2.5) | 3 (2.9, 3) | 2.5 (2.4, 2.6) | 2.6 (2.5, 2.7) | 2.4 (2.3, 2.5) | 2.5 (2.5, 2.6) | 2.4 (2.3, 2.5) |
| 2 to 6 | 2.3 (2.3, 2.4) | 2.9 (2.9, 3) | 2.5 (2.4, 2.5) | 2.6 (2.5, 2.6) | 2.4 (2.3, 2.4) | 2.5 (2.5, 2.6) | 2.4 (2.3, 2.4) |
| 1 or none | 2.2 (2.1, 2.3) | 2.9 (2.8, 3) | 2.4 (2.3, 2.6) | 2.4 (2.3, 2.6) | 2.3 (2.2, 2.4) | 2.4 (2.3, 2.5) | 2.3 (2.1, 2.4) |
| **Self-rated health** | | | | | | | |
| Excellent | 2.3 (2.2, 2.4) | 3 (3, 3.1) | 2.6 (2.5, 2.7) | 2.7 (2.6, 2.7) | 2.4 (2.3, 2.5) | 2.6 (2.5, 2.7) | 2.4 (2.3, 2.5) |
| Very good | 2.4 (2.3, 2.4) | 3 (2.9, 3) | 2.5 (2.4, 2.6) | 2.6 (2.5, 2.6) | 2.4 (2.4, 2.5) | 2.5 (2.5, 2.6) | 2.4 (2.4, 2.5) |
| Good | 2.4 (2.3, 2.4) | 2.9 (2.9, 2.9) | 2.4 (2.4, 2.5) | 2.6 (2.5, 2.7) | 2.4 (2.3, 2.5) | 2.5 (2.5, 2.6) | 2.4 (2.3, 2.4) |
| Fair | 2.3 (2.2, 2.4) | 2.9 (2.8, 2.9) | 2.4 (2.3, 2.5) | 2.6 (2.5, 2.7) | 2.3 (2.2, 2.4) | 2.4 (2.4, 2.5) | 2.3 (2.2, 2.4) |
| Poor or Very Poor | 2.3 (2.2, 2.4) | 2.9 (2.8, 3) | 2.3 (2.1, 2.4) | 2.6 (2.5, 2.7) | 2.4 (2.3, 2.5) | 2.4 (2.3, 2.5) | 2.3 (2.2, 2.4) |
| **Number of conditions or illnesses** | | | | | | | |
| 0 | 2.4 (2.3, 2.4) | 2.9 (2.9, 3) | 2.5 (2.5, 2.6) | 2.6 (2.5, 2.6) | 2.4 (2.4, 2.5) | 2.5 (2.5, 2.6) | 2.4 (2.4, 2.5) |
| 1 | 2.3 (2.3, 2.4) | 2.9 (2.9, 3) | 2.5 (2.4, 2.5) | 2.6 (2.5, 2.7) | 2.4 (2.3, 2.4) | 2.5 (2.5, 2.6) | 2.4 (2.3, 2.4) |
| 2 | 2.3 (2.2, 2.4) | 3 (2.9, 3) | 2.3 (2.2, 2.4) | 2.6 (2.5, 2.7) | 2.4 (2.3, 2.5) | 2.5 (2.4, 2.6) | 2.4 (2.3, 2.5) |
| 3+ | 2.3 (2.1, 2.5) | 2.9 (2.8, 3) | 2.3 (2.1, 2.5) | 2.5 (2.4, 2.7) | 2.4 (2.2, 2.6) | 2.4 (2.3, 2.6) | 2.2 (2.1, 2.4) |
| **Asthma** | | | | | | | |
| No asthma | 2.3 (2.3, 2.4) | 2.9 (2.9, 3) | 2.5 (2.4, 2.5) | 2.6 (2.6, 2.6) | 2.4 (2.4, 2.4) | 2.5 (2.5, 2.5) | 2.4 (2.4, 2.4) |
| Asthma | 2.4 (2.2, 2.5) | 3 (2.9, 3.1) | 2.4 (2.2, 2.6) | 2.5 (2.3, 2.7) | 2.4 (2.2, 2.5) | 2.5 (2.3, 2.6) | 2.3 (2.1, 2.4) |
| **Cancer** | | | | | | | |
| No | 2.3 (2.3, 2.4) | 2.9 (2.9, 3) | 2.5 (2.4, 2.5) | 2.6 (2.6, 2.6) | 2.4 (2.4, 2.4) | 2.5 (2.5, 2.5) | 2.4 (2.3, 2.4) |
| Yes | 2.4 (2.2, 2.5) | 3 (2.9, 3.1) | 2.4 (2.2, 2.6) | 2.7 (2.5, 2.8) | 2.5 (2.3, 2.6) | 2.6 (2.5, 2.7) | 2.5 (2.3, 2.6) |
| **Cardiovascular disease or heart problems** | | | | | | | |
| No CVD | 2.3 (2.3, 2.4) | 2.9 (2.9, 3) | 2.5 (2.4, 2.5) | 2.6 (2.5, 2.6) | 2.4 (2.4, 2.4) | 2.5 (2.5, 2.5) | 2.4 (2.3, 2.4) |
| CVD | 2.4 (2.3, 2.5) | 2.9 (2.9, 3) | 2.4 (2.3, 2.5) | 2.7 (2.6, 2.8) | 2.5 (2.4, 2.6) | 2.6 (2.5, 2.6) | 2.4 (2.3, 2.5) |

**Diabetes**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| No Diabetes | 2.3 (2.3, 2.4) | 2.9 (2.9, 3) | 2.5 (2.4, 2.5) | 2.6 (2.6, 2.6) | 2.4 (2.4, 2.4) | 2.5 (2.5, 2.5) | 2.4 (2.3, 2.4) |
| Diabetes | 2.3 (2.2, 2.5) | 3 (2.9, 3.1) | 2.4 (2.3, 2.5) | 2.6 (2.5, 2.7) | 2.5 (2.4, 2.6) | 2.6 (2.5, 2.7) | 2.5 (2.3, 2.6) |

**Mental health condition**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| No | 2.3 (2.3, 2.4) | 2.9 (2.9, 3) | 2.5 (2.4, 2.5) | 2.6 (2.6, 2.6) | 2.4 (2.4, 2.4) | 2.5 (2.5, 2.6) | 2.4 (2.4, 2.4) |
| Yes | 2.3 (2.1, 2.5) | 2.9 (2.7, 3) | 2.3 (2.1, 2.5) | 2.6 (2.4, 2.8) | 2.3 (2.1, 2.5) | 2.4 (2.2, 2.6) | 2.2 (2, 2.4) |

**Musculoskeletal condition**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| No | 2.4 (2.3, 2.4) | 2.9 (2.9, 3) | 2.5 (2.4, 2.5) | 2.6 (2.6, 2.6) | 2.4 (2.4, 2.5) | 2.5 (2.5, 2.6) | 2.4 (2.4, 2.4) |
| Yes | 2.3 (2.2, 2.4) | 2.9 (2.9, 3) | 2.3 (2.2, 2.4) | 2.6 (2.5, 2.7) | 2.3 (2.3, 2.4) | 2.5 (2.4, 2.5) | 2.3 (2.2, 2.4) |

**Other disease or condition**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| No other NCD | 2.4 (2.3, 2.4) | 2.9 (2.9, 2.9) | 2.5 (2.4, 2.5) | 2.6 (2.6, 2.7) | 2.4 (2.4, 2.5) | 2.5 (2.5, 2.6) | 2.4 (2.4, 2.4) |
| Other NCD | 2.3 (2.3, 2.4) | 3 (2.9, 3) | 2.4 (2.3, 2.5) | 2.6 (2.5, 2.6) | 2.4 (2.3, 2.4) | 2.5 (2.4, 2.5) | 2.3 (2.3, 2.4) |

Note: Musculoskeletal condition refers to arthritis and/or chronic pain

Table 28 eHealth literacy by use of Internet and My Health Record

| | 1. Using technology to process health information mean (95% CI) | 2. Understanding of health concepts and language mean (95% CI) | 3. Ability to actively engage with digital services mean (95% CI) | 4. Feel safe and in control mean (95% CI) | 5. Motivated to engage with digital services mean (95% CI) | 6. Access to digital services that work mean (95% CI) | 7. Digital services that suit individual needs mean (95% CI) |
|---|---|---|---|---|---|---|---|
| **Use of internet to access health-related information** | | | | | | | |
| Once a week or more often | 2.9 (2.8, 3) | 3.2 (3.1, 3.3) | 2.9 (2.8, 3) | 2.6 (2.4, 2.7) | 2.8 (2.7, 2.9) | 2.6 (2.5, 2.8) | 2.6 (2.5, 2.8) |
| Several times a month | 2.8 (2.7, 3) | 3.1 (3, 3.2) | 2.9 (2.8, 3) | 2.7 (2.5, 2.8) | 2.8 (2.7, 2.9) | 2.7 (2.5, 2.8) | 2.6 (2.5, 2.8) |
| Approximately once a month | 2.7 (2.6, 2.8) | 3.1 (3, 3.2) | 2.8 (2.7, 2.9) | 2.6 (2.5, 2.7) | 2.7 (2.6, 2.8) | 2.6 (2.6, 2.7) | 2.6 (2.5, 2.7) |
| Approximately once every two months | 2.6 (2.5, 2.7) | 3 (2.9, 3.1) | 2.8 (2.7, 2.9) | 2.6 (2.5, 2.7) | 2.6 (2.5, 2.8) | 2.6 (2.5, 2.7) | 2.5 (2.4, 2.6) |
| A few times within the past year | 2.4 (2.4, 2.5) | 2.9 (2.9, 3) | 2.6 (2.5, 2.6) | 2.5 (2.5, 2.6) | 2.5 (2.4, 2.5) | 2.5 (2.5, 2.6) | 2.4 (2.3, 2.5) |
| No, never | 2 (1.9, 2) | 2.8 (2.8, 2.9) | 2.1 (2, 2.2) | 2.6 (2.6, 2.7) | 2.1 (2.1, 2.2) | 2.4 (2.4, 2.5) | 2.2 (2.1, 2.3) |
| Don't know/NA | 1.6 (1.3, 1.9) | 2.7 (2.4, 3) | 1.8 (1.3, 2.3) | 2.6 (2.2, 2.9) | 1.9 (1.4, 2.3) | 2.1 (1.8, 2.4) | 2.1 (1.6, 2.6) |
| **How internet is accessed\* (among internet users)** | | | | | | | |
| Computer Only | 2.5 (2.5, 2.6) | 3 (2.9, 3) | 2.6 (2.6, 2.7) | 2.5 (2.4, 2.6) | 2.5 (2.5, 2.6) | 2.5 (2.5, 2.6) | 2.4 (2.4, 2.5) |
| Multiple devices | 2.7 (2.6, 2.7) | 3 (3, 3.1) | 2.8 (2.7, 2.8) | 2.6 (2.6, 2.7) | 2.7 (2.6, 2.7) | 2.6 (2.6, 2.7) | 2.6 (2.5, 2.6) |
| Smartphone | 2.7 (2.6, 2.8) | 3.1 (3, 3.1) | 2.8 (2.8, 2.9) | 2.6 (2.6, 2.7) | 2.7 (2.6, 2.8) | 2.6 (2.6, 2.7) | 2.6 (2.5, 2.7) |
| Tablet | 2.7 (2.6, 2.7) | 3 (3, 3.1) | 2.8 (2.7, 2.8) | 2.6 (2.6, 2.7) | 2.7 (2.6, 2.7) | 2.6 (2.6, 2.7) | 2.6 (2.5, 2.7) |
| Computer | 2.6 (2.6, 2.7) | 3 (3, 3.1) | 2.7 (2.7, 2.8) | 2.5 (2.5, 2.6) | 2.6 (2.5, 2.7) | 2.6 (2.5, 2.6) | 2.5 (2.4, 2.5) |
| **Why internet is not used to access health-related information\* (among non-internet users)** | | | | | | | |
| I don't know how to | 1.8 (1.7, 1.9) | 2.8 (2.7, 2.9) | 1.8 (1.7, 1.9) | 2.7 (2.6, 2.8) | 2 (1.8, 2.1) | 2.3 (2.2, 2.4) | 2.1 (2, 2.2) |
| I don't know what's out there | 2 (1.5, 2.4) | 2.6 (2.5, 2.8) | 2.1 (1.6, 2.6) | 2.2 (1.7, 2.7) | 2.2 (1.6, 2.7) | 2.3 (1.9, 2.8) | 2.2 (1.8, 2.6) |
| I don't want to | 1.9 (1.8, 1.9) | 2.9 (2.8, 2.9) | 2 (1.9, 2.1) | 2.6 (2.5, 2.7) | 2 (1.9, 2.1) | 2.3 (2.2, 2.4) | 2.1 (2, 2.2) |
| I'm not sure I'd get what I need | 1.9 (1.7, 2.1) | 2.8 (2.6, 3) | 2.2 (1.8, 2.5) | 2.6 (2.3, 2.8) | 2 (1.8, 2.2) | 2.3 (2.2, 2.5) | 2 (1.8, 2.3) |
| I can't afford it\* | 2.2 (0, 0) | 2.6 (0, 0) | 2.2 (0, 0) | 2 (0, 0) | 2 (0, 0) | 2.3 (0, 0) | 2 (0, 0) |
| I don't have the right technology (equipment) | 1.9 (1.8, 2) | 2.8 (2.8, 2.9) | 1.8 (1.7, 1.9) | 2.7 (2.6, 2.8) | 2.1 (1.9, 2.2) | 2.4 (2.3, 2.5) | 2.1 (2, 2.3) |
| I'm not confident enough to use computers/smartphones/iPads | 1.8 (1.6, 2) | 2.8 (2.7, 2.9) | 1.7 (1.5, 1.9) | 2.5 (2.3, 2.7) | 2 (1.7, 2.2) | 2.3 (2.1, 2.4) | 2 (1.8, 2.2) |
| I'm not confident I'd be able to understand the information by myself | 1.9 (1.4, 2.3) | 3 (2.8, 3.1) | 2 (1.5, 2.5) | 2.6 (2.2, 2.9) | 2.1 (1.5, 2.6) | 2.3 (1.8, 2.8) | 2 (1.5, 2.5) |
| I prefer face-to-face interaction with health services | 2 (1.9, 2.1) | 2.9 (2.8, 2.9) | 2.1 (2, 2.2) | 2.6 (2.5, 2.7) | 2.1 (2.1, 2.2) | 2.4 (2.4, 2.5) | 2.3 (2.2, 2.4) |

**My Health Record, access and use or intention**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Not sure if have | 2.2 (2.1, 2.3) | 2.9 (2.9, 3) | 2.3 (2.3, 2.4) | 2.5 (2.5, 2.6) | 2.3 (2.2, 2.3) | 2.4 (2.4, 2.5) | 2.3 (2.2, 2.3) |
| Don't have | 2.3 (2.3, 2.4) | 2.9 (2.8, 2.9) | 2.4 (2.3, 2.5) | 2.6 (2.5, 2.6) | 2.4 (2.3, 2.4) | 2.5 (2.5, 2.6) | 2.4 (2.3, 2.4) |
| Have **MyHR** and use it | 2.7 (2.6, 2.9) | 3.1 (3, 3.3) | 2.9 (2.8, 3) | 2.9 (2.7, 3) | 2.8 (2.7, 2.9) | 2.8 (2.7, 2.9) | 2.8 (2.7, 2.9) |
| Have **MyHR**, don't use it but intend to | 2.6 (2.5, 2.7) | 3 (3, 3.1) | 2.8 (2.7, 2.9) | 2.8 (2.7, 2.9) | 2.7 (2.6, 2.8) | 2.7 (2.6, 2.8) | 2.6 (2.5, 2.7) |
| Have **MyHR**, don't use it and don't intend to | 2.3 (2.2, 2.4) | 3 (2.9, 3) | 2.4 (2.3, 2.5) | 2.6 (2.4, 2.7) | 2.4 (2.3, 2.5) | 2.6 (2.5, 2.6) | 2.4 (2.3, 2.5) |
| Have **MyHR**, don't use it and not sure if intend to | 2.3 (2.2, 2.4) | 2.9 (2.9, 3) | 2.6 (2.4, 2.7) | 2.6 (2.5, 2.8) | 2.4 (2.2, 2.5) | 2.5 (2.4, 2.6) | 2.4 (2.3, 2.5) |

* Note that, as only one participant selected 'I can't afford it', we were unable to calculate 95% CI's for this subgroup

Table 29 Health literacy for the total population and by demographics of interest

| | 1. Feeling understood and supported by healthcare providers<br><br>mean (95% CI) | 3. Actively managing my health<br><br>mean (95% CI) | 4. Social support for health<br><br>mean (95% CI) | 7. Navigating the healthcare system<br><br>mean (95% CI) |
|---|---|---|---|---|
| **Total** | 3.2 (3.1, 3.2) | 3.0 (3.0, 3.0) | 3.0 (3.0, 3.1) | 3.9 (3.9, 4.0) |
| **Sex** | | | | |
| Men | 3.1 (3.1, 3.2) | 3.0 (2.9, 3.0) | 3.0 (3.0, 3.1) | 4.0 (3.9, 4.0) |
| Women | 3.2 (3.1, 3.2) | 3.1 (3.0, 3.1) | 3.1 (3.0, 3.1) | 3.9 (3.9, 4.0) |
| **Age** | | | | |
| Age <55 years | 3.1 (3.1, 3.2) | 3.0 (2.9, 3.0) | 3.1 (3.0, 3.1) | 3.8 (3.7, 3.9) |
| Age 55 to <70 years | 3.1 (3.1, 3.2) | 3.0 (3.0, 3.1) | 3.0 (2.9, 3.0) | 3.9 (3.8, 3.9) |
| Age >=70 years | 3.2 (3.1, 3.2) | 3.0 (3.0, 3.1) | 3.1 (3.0, 3.1) | 4.1 (4.0, 4.2) |
| **Aboriginal or Torres Strait Islander** | | | | |
| Yes | 3.2 (2.9, 3.4) | 3.0 (2.9, 3.1) | 3.0 (2.8, 3.2) | 4.1 (3.7, 4.5) |
| No | 3.2 (3.1, 3.2) | 3.0 (3.0, 3.0) | 3.0 (3.0, 3.1) | 3.9 (3.9, 4.0) |
| **Highest educational attainment** | | | | |
| Year 9 or below | 3.2 (3.1, 3.3) | 3.0 (2.9, 3.0) | 3.1 (3.0, 3.2) | 4.1 (3.9, 4.2) |
| Year 10 | 3.2 (3.1, 3.3) | 3.0 (2.9, 3.0) | 3 (3.0, 3.1) | 4.0 (3.9, 4.1) |
| Year 12 | 3.1 (3.0, 3.2) | 3.0 (3.0, 3.1) | 3.0 (2.9, 3.1) | 3.9 (3.8, 4.1) |
| Trade certificate, apprenticeship, Diploma or college/TAFE certificate | 3.1 (3.1, 3.2) | 3.0 (2.9, 3.0) | 3.0 (3.0, 3.1) | 3.9 (3.8, 4.0) |
| Tertiary education | 3.2 (3.1, 3.3) | 3.1 (3.0, 3.1) | 3.1 (3.0, 3.1) | 3.9 (3.9, 4.0) |

Table 30 Health literacy by self-rated health, chronic diseases and conditions, and contact with health professionals

| | 1. Feeling understood and supported by healthcare providers | 3. Actively managing my health | 4. Social support for health | 7. Navigating the healthcare system |
|---|---|---|---|---|
| **Number of contacts with a health professional in the last 12 months** | mean (95% CI) | mean (95% CI) | mean (95% CI) | mean (95% CI) |
| >12 | 3.2 (3.2, 3.3) | 3.0 (3.0, 3.1) | 3.0 (3.0, 3.1) | 3.9 (3.8, 4.0) |
| 7 to 11 | 3.2 (3.2, 3.3) | 3.0 (3.0, 3.1) | 3.1 (3.0, 3.1) | 4.0 (3.9, 4.1) |
| 2 to 6 | 3.1 (3.1, 3.2) | 3.0 (3.0, 3.1) | 3.0 (3.0, 3.1) | 4.0 (3.9, 4.1) |
| 1 or none | 2.9 (2.8, 3.1) | 3.0 (2.9, 3.1) | 3.0 (2.9, 3.1) | 3.9 (3.7, 4.0) |
| **Self-rated health** | | | | |
| Excellent | 3.2 (3.1, 3.3) | 3.2 (3.1, 3.3) | 3.2 (3.1, 3.3) | 4.2 (4.1, 4.3) |
| Very good | 3.2 (3.1, 3.3) | 3.1 (3.0, 3.1) | 3.1 (3.1, 3.2) | 4.0 (4.0, 4.1) |
| Good | 3.2 (3.1, 3.2) | 3.0 (2.9, 3.0) | 3.0 (3.0, 3.1) | 4.0 (3.9, 4.0) |
| Fair | 3.1 (3.0, 3.1) | 2.9 (2.9, 3.0) | 2.9 (2.8, 3.0) | 3.7 (3.6, 3.8) |
| Poor or Very Poor | 3.2 (3.1, 3.3) | 2.9 (2.8, 3.0) | 3.0 (2.8, 3.1) | 3.6 (3.4, 3.8) |
| **Number of conditions or illnesses** | | | | |
| 0 | 3.1 (3.1, 3.1) | 3.0 (3.0, 3.1) | 3.1 (3.0, 3.1) | 4.0 (3.9, 4.0) |
| 1 | 3.2 (3.1, 3.2) | 3.0 (3.0, 3.1) | 3.0 (3.0, 3.1) | 3.9 (3.8, 4.0) |
| 2 | 3.3 (3.2, 3.4) | 3.0 (2.9, 3.1) | 3.1 (3.0, 3.2) | 4.1 (4.0, 4.2) |
| 3+ | 3.1 (3.0, 3.3) | 3.0 (2.9, 3.1) | 3.0 (2.8, 3.1) | 3.7 (3.5, 4.0) |
| **Asthma** | | | | |
| No asthma | 3.2 (3.1, 3.2) | 3.0 (3.0, 3.0) | 3.0 (3.0, 3.1) | 3.9 (3.9, 4.0) |
| Asthma | 3.2 (3.1, 3.4) | 2.9 (2.8, 3.1) | 3.0 (2.9, 3.2) | 3.9 (3.6, 4.1) |
| **Cancer** | | | | |
| No | 3.2 (3.1, 3.2) | 3.0 (3.0, 3.0) | 3.0 (3.0, 3.1) | 3.9 (3.9, 4.0) |
| Yes | 3.3 (3.1, 3.5) | 3.1 (2.9, 3.2) | 3.2 (3.0, 3.3) | 4.1 (3.9, 4.3) |
| **Cardiovascular disease or heart problems** | | | | |
| No CVD | 3.2 (3.1, 3.2) | 3.0 (3.0, 3.1) | 3.0 (3.0, 3.1) | 3.9 (3.9, 4.0) |
| CVD | 3.2 (3.1, 3.3) | 3.0 (2.9, 3.0) | 3.0 (2.9, 3.1) | 4.0 (3.9, 4.1) |
| **Diabetes** | | | | |
| No Diabetes | 3.2 (3.1, 3.2) | 3.0 (3.0, 3.0) | 3.0 (3.0, 3.1) | 3.9 (3.9, 4.0) |
| Diabetes | 3.3 (3.2, 3.4) | 3.1 (3.0, 3.1) | 3.0 (2.9, 3.1) | 4.1 (3.9, 4.2) |
| **Mental health condition** | | | | |
| No | 3.2 (3.1, 3.2) | 3.0 (3.0, 3.0) | 3.1 (3.0, 3.1) | 4.0 (3.9, 4.0) |
| Yes | 3.2 (3, 3.4) | 3.0 (2.9, 3.1) | 2.8 (2.6, 3.1) | 3.7 (3.4, 4.0) |
| **Musculoskeletal condition** | | | | |
| No | 3.1 (3.1, 3.2) | 3.0 (3.0, 3.1) | 3.0 (3.0, 3.1) | 4.0 (3.9, 4.0) |
| Yes | 3.2 (3.1, 3.3) | 3.0 (2.9, 3.1) | 3.1 (3.0, 3.1) | 3.9 (3.8, 4.0) |
| **Other disease or condition** | | | | |
| No other NCD | 3.1 (3.1, 3.2) | 3.0 (3.0, 3.0) | 3.0 (3.0, 3.1) | 4.0 (3.9, 4.0) |
| Other NCD | 3.2 (3.2, 3.3) | 3.0 (3.0, 3.1) | 3.0 (3.0, 3.1) | 3.9 (3.8, 4.0) |

Note: Musculoskeletal condition refers to arthritis and/or chronic pain

Table 31 Health literacy by use of internet and My Health Record

| | 1. Feeling understood and supported by healthcare providers<br><br>mean (95% CI) | 3. Actively managing my health<br><br>mean (95% CI) | 4. Social support for health<br><br>mean (95% CI) | 7. Navigating the healthcare system<br><br>mean (95% CI) |
|---|---|---|---|---|
| **Use of internet to access health-related information** | | | | |
| Once a week or more often | 3.1 (3.0, 3.3) | 3.2 (3.1, 3.3) | 3.0 (2.9, 3.1) | 3.8 (3.6, 4.0) |
| Several times a month | 3.2 (3.1, 3.4) | 3.1 (3.0, 3.2) | 3.2 (3.0, 3.3) | 3.8 (3.6, 4.0) |
| Approximately once a month | 3.2 (3.1, 3.3) | 3.1 (3.0, 3.1) | 3.1 (3.0, 3.2) | 3.9 (3.7, 4.0) |
| Approximately once every two months | 3.2 (3.1, 3.3) | 3.1 (3.0, 3.1) | 3.1 (3.0, 3.2) | 4.0 (3.8, 4.1) |
| A few times within the past year | 3.1 (3.1, 3.2) | 3.0 (2.9, 3.0) | 3.0 (3.0, 3.1) | 3.9 (3.8, 4.0) |
| No, never | 3.2 (3.1, 3.2) | 3.0 (2.9, 3.0) | 3.0 (3.0, 3.1) | 4.0 (4.0, 4.1) |
| Don't know/NA | 3.2 (2.7, 3.7) | 3.2 (2.9, 3.6) | 3.0 (2.5, 3.6) | 3.7 (2.9, 4.5) |
| **How internet is accessed\* (among internet users)** | | | | |
| Computer only | 3.1 (3.0, 3.2) | 3.0 (3.0, 3.1) | 3.0 (2.9, 3.1) | 3.8 (3.8, 3.9) |
| Multiple devices | 3.2 (3.1, 3.3) | 3.1 (3.0, 3.1) | 3.1 (3.0, 3.1) | 3.9 (3.9, 4.0) |
| Smartphone | 3.2 (3.1, 3.2) | 3.1 (3.0, 3.1) | 3.1 (3.0, 3.1) | 3.9 (3.8, 4.0) |
| Tablet | 3.2 (3.1, 3.2) | 3.1 (3.0, 3.1) | 3.1 (3.0, 3.1) | 4.0 (3.9, 4.1) |
| Computer | 3.1 (3.1, 3.2) | 3.0 (3.0, 3.1) | 3.0 (3.0, 3.1) | 3.9 (3.8, 4.0) |
| **Why internet is not used to access health-related information\* (among non-internet users)** | | | | |
| **I don't know how to** | 3.1 (3.1, 3.2) | 2.9 (2.9, 3.0) | 3.0 (2.9, 3.2) | 4.0 (3.8, 4.2) |
| I don't know what's out there | 3.1 (2.8, 3.4) | 2.8 (2.6, 3.0) | 3.0 (2.8, 3.1) | 3.9 (3.2, 4.7) |
| **I don't want to** | 3.3 (3.2, 3.4) | 3.0 (2.9, 3.1) | 3.1 (3.0, 3.2) | 4.2 (4.1, 4.3) |
| I'm not sure I'd get what I need | 3.1 (2.9, 3.3) | 2.9 (2.7, 3.1) | 3.0 (2.7, 3.3) | 3.7 (3.3, 4.1) |
| I can't afford it | 2 | 2.6 | 2.6 | 2.2 |
| **I don't have the right technology (equipment)** | 3.2 (3.1, 3.2) | 3.0 (2.9, 3.0) | 3.0 (2.9, 3.1) | 4.0 (3.9, 4.1) |
| I'm not confident enough to use computers/smartphones/iPads | 3.2 (3.0, 3.3) | 3.0 (2.9, 3.1) | 2.9 (2.8, 3.1) | 3.9 (3.7, 4.1) |
| I'm not confident I'd be able to understand the information by myself | 3.2 (3.0, 3.5) | 3.1 (2.7, 3.5) | 2.9 (2.6, 3.2) | 4.1 (3.9, 4.4) |
| **I prefer face-to-face interaction with health services** | 3.2 (3.2, 3.3) | 3.0 (2.9, 3.1) | 3.1 (3.0, 3.2) | 4.1 (4.0, 4.2) |
| **My Health Record, access and use or intention** | | | | |
| Not sure if have | 3.1 (3.1, 3.2) | 3.0 (3.0, 3.1) | 3.0 (3.0, 3.1) | 3.9 (3.8, 4.0) |
| Don't have | 3.1 (3.1, 3.2) | 3.0 (2.9, 3.0) | 3.0 (2.9, 3.0) | 3.9 (3.8, 4.0) |
| Have **MyHR** and use it | 3.4 (3.2, 3.5) | 3.1 (3.0, 3.2) | 3.2 (3.1, 3.3) | 4.1 (3.9, 4.3) |
| Have **MyHR**, don't use it but intend to | 3.3 (3.2, 3.4) | 3.1 (3.0, 3.2) | 3.2 (3.1, 3.2) | 4.0 (3.9, 4.1) |
| Have **MyHR**, don't use it and don't intend to | 3.2 (3.1, 3.3) | 3 (2.9, 3.0) | 3.0 (2.9, 3.1) | 3.9 (3.7, 4.1) |
| Have **MyHR**, don't use it and not sure if intend to | 3.1 (3.0, 3.3) | 2.9 (2.8, 3.0) | 3.1 (2.9, 3.2) | 4.0 (3.9, 4.2) |

Table 32 12 cluster analysis with demographics and eHealth Literacy Questionnaire (eHLQ) data

| 12 Cl # | Cl ord | Num people | Av Age | % Female | % use internet last year for health | Av Freq use internet | % have MyHR | % use or plan to use MyHR | ATSI% | eHLQ1 Using technology to process health information | eHLQ2 Understand health concepts & language | eHLQ3 Ability to actively engage with digital services | eHLQ4 Feel safe and in control | eHLQ5 Motivated to engage with digital services | eHLQ6 Access to digital services that work | eHLQ7 Digital services that suit individual needs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | 37 | 58.9 | 54.1% | 78.4% | 2.2 | 59.5% | 48.6% | 5.4% | 3.17 | 3.60 | 3.26 | 3.65 | 3.37 | 3.57 | 3.43 |
| 12 | 2 | 53 | 56.7 | 52.8% | 96.2% | 3.0 | 35.8% | 30.2% | 1.9% | 3.25 | 3.66 | 3.45 | 2.66 | 3.20 | 2.80 | 2.83 |
| 2 | 3 | 123 | 62.9 | 52.8% | 73.2% | 2.0 | 41.5% | 24.4% | 4.1% | 2.90 | 3.04 | 2.87 | 3.00 | 2.95 | 2.96 | 2.95 |
| 8 | 4 | 135 | 60.9 | 56.3% | 80.7% | 1.9 | 42.2% | 27.4% | 2.2% | 2.63 | 2.90 | 2.81 | 2.46 | 2.67 | 2.60 | 2.56 |
| 10 | 5 | 179 | 67.3 | 54.7% | 49.7% | 1.0 | 34.6% | 15.6% | 1.7% | 2.30 | 2.88 | 2.35 | 2.96 | 2.47 | 2.71 | 2.64 |
| 7 | 6 | 117 | 61.1 | 49.6% | 81.2% | 1.9 | 33.3% | 12.0% | 0.0% | 2.45 | 2.92 | 2.75 | 1.92 | 2.46 | 2.31 | 2.13 |
| 5 | 7 | 121 | 69.8 | 59.5% | 25.6% | 0.4 | 20.7% | 8.3% | 2.5% | 2.00 | 2.72 | 2.10 | 2.78 | 2.01 | 2.36 | 2.04 |
| 6 | 8 | 96 | 64.6 | 50.0% | 60.4% | 1.2 | 24.0% | 8.3% | 1.0% | 2.15 | 2.69 | 2.30 | 2.16 | 2.13 | 2.22 | 2.10 |
| 9 | 9 | 39 | 71.7 | 53.8% | 20.5% | 0.3 | 20.5% | 5.1% | 0.0% | 1.56 | 2.90 | 1.41 | 2.86 | 1.75 | 2.29 | 1.92 |
| 4 | 10 | 41 | 65.4 | 51.2% | 46.3% | 1.1 | 14.6% | 2.4% | 0.0% | 1.75 | 2.87 | 1.89 | 1.74 | 1.75 | 1.92 | 1.60 |
| 1 | 11 | 38 | 75.2 | 52.6% | 0.0% | 0.0 | 15.8% | 5.3% | 0.0% | 1.07 | 2.99 | 1.13 | 2.79 | 1.09 | 1.79 | 1.18 |
| 11 | 12 | 21 | 69.6 | 47.6% | 14.3% | 0.1 | 9.5% | 0.0% | 0.0% | 1.16 | 2.48 | 1.29 | 1.50 | 1.23 | 1.44 | 1.25 |

Table 33 Health Literacy Questionnaire (HLQ) data by cluster

| 12 Cl # | Num people | HLQ1 Feeling supported by health care providers | HLQ3 Actively engaged with health | HLQ4 Social support | HLQ7 Navigating health services |
|---|---|---|---|---|---|
| 3 | 37 | 3.70 | 3.46 | 3.65 | 4.23 |
| 12 | 53 | 3.49 | 3.38 | 3.33 | 4.09 |
| 2 | 123 | 3.18 | 3.08 | 3.08 | 4.14 |
| **8** | **135** | **3.09** | **2.95** | **2.98** | **3.93** |
| 10 | 179 | 3.18 | 2.97 | 3.06 | 4.17 |
| **7** | **117** | **2.96** | **2.95** | **2.91** | **3.64** |
| 5 | 121 | 3.07 | 2.89 | 2.96 | 3.92 |
| 6 | 96 | 2.90 | 2.91 | 2.89 | 3.64 |
| 9 | 39 | 3.38 | 3.06 | 3.30 | 4.04 |
| 4 | 41 | 2.99 | 3.07 | 2.89 | 3.52 |
| 1 | 38 | 3.49 | 3.23 | 3.31 | 4.17 |
| 11 | 21 | 3.07 | 2.93 | 2.73 | 3.63 |

Table 34 Clusters and the proportion of people who use or plan to use MyHR

| 12 Cl Num | Ord Cl | Number of people | % use or plan to use MyHR |
|---|---|---|---|
| 3 | 1 | 37 | 48.6% |
| 12 | 2 | 53 | 30.2% |
| 2 | 3 | 123 | 24.4% |
| 8 | 4 | 135 | 27.4% |
| 10 | 5 | 179 | 15.6% |
| 7 | 6 | 117 | 12.0% |
| 5 | 7 | 121 | 8.3% |
| 6 | 8 | 96 | 8.3% |
| 9 | 9 | 39 | 5.1% |
| 4 | 10 | 41 | 2.4% |
| 1 | 11 | 38 | 5.3% |
| 11 | 12 | 21 | 0.0% |

Table 35 Clusters and health conditions

| 12 CI # | Number in CI | Av Age | # Fem | % Fem | Av # conds | # Cancer | # CVD | # diab | # ment hlth | # musc-skel | % Cancer | % CVD | % diab | % ment hlth | % musc-skel | Av Freq HP | Av SR Health | # use internet last year | % use internet last year | Av Freq int | # have MYHR | # use/ plan MYHR | % have MYHR | % use or plan to use MYHR | ATSI | ATSI% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 37 | 58.9 | 20 | 54.1 | 1.0 | 2 | 6 | 4 | 5 | 9 | 5.4 | 16.2 | 10.8 | 13.5 | 24.3 | 2.6 | 4.5 | 29 | 78.4 | 2.2 | 22 | 18 | 59.5 | 48.6 | 2 | 5.4 |
| 12 | 53 | 56.7 | 28 | 52.8 | 0.9 | 3 | 7 | 5 | 1 | 8 | 5.7 | 13.2 | 9.4 | 1.9 | 15.1 | 2.8 | 4.5 | 51 | 96.2 | 3.0 | 19 | 16 | 35.8 | 30.2 | 1 | 1.9 |
| 2 | 123 | 62.9 | 65 | 52.8 | 1.0 | 10 | 20 | 11 | 7 | 23 | 8.1 | 16.3 | 8.9 | 5.7 | 18.7 | 2.8 | 4.3 | 90 | 73.2 | 2.0 | 51 | 30 | 41.5 | 24.4 | 5 | 4.1 |
| 8 | 135 | 60.9 | 76 | 56.3 | 0.7 | 8 | 9 | 8 | 2 | 21 | 5.9 | 6.7 | 5.9 | 1.5 | 15.6 | 2.6 | 4.4 | 109 | 80.7 | 1.9 | 57 | 37 | 42.2 | 27.4 | 3 | 2.2 |
| 10 | 179 | 67.3 | 98 | 54.7 | 1.0 | 5 | 32 | 20 | 12 | 31 | 2.8 | 17.9 | 11.2 | 6.7 | 17.3 | 2.6 | 4.1 | 89 | 49.7 | 1.0 | 62 | 28 | 34.6 | 15.6 | 3 | 1.7 |
| 7 | 117 | 61.1 | 58 | 49.6 | 0.9 | 6 | 13 | 7 | 5 | 19 | 5.1 | 11.1 | 6.0 | 4.3 | 16.2 | 2.5 | 4.4 | 95 | 81.2 | 1.9 | 39 | 14 | 33.3 | 12.0 | 0 | 0.0 |
| 5 | 121 | 69.8 | 72 | 59.5 | 0.8 | 3 | 12 | 9 | 8 | 24 | 2.5 | 9.9 | 7.4 | 6.6 | 19.8 | 2.6 | 4.1 | 31 | 25.6 | 0.4 | 25 | 10 | 20.7 | 8.3 | 3 | 2.5 |
| 6 | 96 | 64.6 | 48 | 50.0 | 0.8 | 5 | 10 | 9 | 3 | 16 | 5.2 | 10.4 | 9.4 | 3.1 | 16.7 | 2.6 | 4.2 | 58 | 60.4 | 1.2 | 23 | 8 | 24.0 | 8.3 | 1 | 1.0 |
| 9 | 39 | 71.7 | 21 | 53.8 | 1.1 | 5 | 6 | 3 | 2 | 11 | 12.8 | 15.4 | 7.7 | 5.1 | 28.2 | 2.7 | 4.0 | 8 | 20.5 | 0.3 | 8 | 2 | 20.5 | 5.1 | 0 | 0.0 |
| 4 | 41 | 65.4 | 21 | 51.2 | 1.0 | 1 | 5 | 4 | 2 | 11 | 2.4 | 12.2 | 9.8 | 4.9 | 26.8 | 2.4 | 3.6 | 19 | 46.3 | 1.1 | 6 | 1 | 14.6 | 2.4 | 0 | 0.0 |
| 1 | 38 | 75.2 | 20 | 52.6 | 1.4 | 4 | 6 | 1 | 4 | 14 | 10.5 | 15.8 | 2.6 | 10.5 | 36.8 | 2.9 | 4.2 | 0 | 0.0 | 0.0 | 6 | 2 | 15.8 | 5.3 | 0 | 0.0 |
| 11 | 21 | 69.6 | 10 | 47.6 | 1.5 | 1 | 3 | 3 | 5 | 7 | 4.8 | 14.3 | 14.3 | 23.8 | 33.3 | 2.2 | 4.1 | 3 | 14.3 | 0.1 | 2 | 0 | 9.5 | 0.0 | 0 | 0.0 |

# Appendix I Table of Recommendations Template

Table 36 cross references the recommendations in the report with consumer education, consumer access, healthcare provider education, and systems/policy, which were categories requested by the Australian Digital Health Agency (ADHA) in feedback to the draft report. This table will be populated by WVPHN and the ADHA.

In the report, the recommendations are structured into two categories and are underpinned by four fundamental principles.

### Box 1 Two categories of recommendations that seek to ensure coverage of all Australians

**Category 1 recommendations** address the major issues requiring an integrated synergistic approach (in general these tend towards longer-term, structural solutions)

**Category 2 recommendations** for actions at specific levels including actions required at the individual, family/community, practitioner/professional and system levels (including design of digital health technologies) to increase uptake of eHealth technologies and MyHR.

### Box 2 The four principles underpinning the recommendations.

**Principle A:** Actions to promote the use of digital health technologies including MyHR need to be guided by a principle of equity and to recognise that the people who have the greatest need for a system like MyHR are often the people facing the greatest barriers to engagement. Therefore, in planning for improvement, strategies should aim to maximise the benefits for people with the greatest needs and health systems should be developed with the flexibility to allow for this.

**Principle B:** Achieving acceptable population-wide implementation and community engagement in digital health technologies and MyHR will require action at multiple levels of government and organisations and implementation in an integrated and synergistic manner across these levels. In considering the recommendations, it is necessary to always reflect on how the whole may be more than the sum of the parts. (See Recommendations 1 to 4 as examples of synergistic sets of interventions.)

**Principle C:** It is necessary to recognise that the introduction of digital health technologies, including MyHR, is perceived by many people as a change that poses a threat to systems of care that are comfortable and familiar to them. People's expectations are coloured by past experiences with new technologies that have promoted self-service and are associated with a reduction in services, especially services where contact with a person is preferred. Such a scenario is a source of anxiety to many people when it relates to their health and health care. All actions to promote digital health technologies, including MyHR, must recognise and take systematic and proactive action to manage people's expectations and anxieties.

**Principle D:** There is no one-size-fits-all approach to education and communication. In particular, approaches that depend solely on mass media and/or uniform printed materials will not engage all the different groups of people in a community. An extensive and diverse suite of approaches are needed to address the diverse needs of different groups, and these approaches will very often need to involve community members having opportunities to discuss potential benefits, concerns, and what is required of them with peers and/or health professionals. Promotional materials must reflect an understanding of the core concerns of community members, and what different groups of people are likely to consider a significant and practical benefit to engagement in digital technologies such as MyHR.

## Table 36 Recommendations Cross Reference (Template)

**How to read the table:**

1. Recommendations from the report are written in **black** text in the left column. The red text has been copied from ADHA draft report feedback.
2. The types of recommendations are grouped by Consumer Education (**CE**), Consumer Access (**CA**), Provider Education (**PE**), System and Policy (**S&P**), as requested by ADHA in the draft report feedback.
3. The table is intentionally left blank in order for ADHA to input their own text and ticks around each recommendation in terms of the type of recommendation and the current level of implementation.

## Recommendation 1

| Recommendation and actions | Type of recommendation | | | | Current level of implementation: technical and promotion | | |
|---|---|---|---|---|---|---|---|
| | CE | CA | PE | S&P | In place | In progress | Future |
| *Category 1 Recommendations: address the major issues requiring an integrated synergistic approach (in general these tend towards longer-term, structural solutions)* | | | | | | | |
| *1.1 Assist people to understand potential benefits, the relevance of possible benefits, and to weigh benefits against possible risks.* | | | | | | | |
| **Recommendation 1**<br>There is a need for an integrated and synergistic strategy to help people **understand the potential benefits** of MyHR and other digital technologies in a way that is relevant to their life circumstances, perceived health risks, and preferences for receiving healthcare services. This strategy should consider both the intellectual and experiential aspects of understanding (where experience can be personal or gained vicariously through the experiences of others). It needs to facilitate the ability of people to assess perceived benefits against perceived risks and should, ideally, allow for people to choose a level of engagement that maximises their perceived benefit while minimising their | | | | | | | |

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| perceived risks. Some components of an integrated and synergistic approach could include:<br><br><span style="color:red">Consumers need to understand the potential benefits and potential risks that are relevant to their situation, choosing their level of engagement based on their individual situation. The benefits should be both practical and relevant to consumers:</span> | | | | | | | | |
| g. [A comprehensive taxonomy of potential benefits of MyHR with an emphasis on the types of benefits experienced and desired by consumers].<br><br><span style="color:red">• Taxonomy of benefits and risks, dependent on engage, provided in a visual format</span> | | | | | | | | |
| h. Description and presentation of potential benefits in terms of the user not the health system (e.g., reduced need to tell the same information repeatedly, reduced waiting times, less chance of an accident, convenience in accessing services or purchasing health products, advantages for travel).<br><br><span style="color:red">• Description of benefits should be described in terms of the consumer, not the health system. Examples include:</span><br><span style="color:red">- Safety benefits for emergency situations</span><br><span style="color:red">- Convenience and reduced waiting times in emergency departments</span><br><span style="color:red">- Healthcare while traveling</span><br><span style="color:red">- Reduced paperwork when using new services</span><br><span style="color:red">- Reduced need to explain things to new doctors or services.</span> | | | | | | | | |
| i. Sharing simple, true and positive stories in the community (as well as negative stories, which are already widely shared). For this to occur, people need to know when their MyHR has been accessed and how it has streamlined and benefited the services that they have received. Providers who access and use a person's MyHR should be encouraged to, and given a process to, share this fact with their patient.<br><br><span style="color:red">• Need to share positive stories of My Health Record in the community, for this to occur, consumers need to know when their record has been</span> | | | | | | | | |

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| | accessed and how the services have benefits from this access. Providers could be encourage to share this with their patients | | | | | | | |
| j. | Simple, true stories of how people have benefited need to be made widely available in a range of formats.<br><br>• Simple, true stories could be made available in a range of formats | | | | | | | |
| k. | Simple tools and processes that assist people to assess potential benefits of MyHR against potential risks, and to choose a level of utilisation that suits them. For example, a GP says 'how about I just upload your medications and allergies in case you have to go to hospital sometime?'; or a chart displaying different levels of engagement with MyHR and potential uses and benefits of each level (similar to the charts presented for many software products).<br><br>• In addition several people requested a tool that would enable them to easily see the possible benefits and risks | | | | | | | |
| l. | Regular communication/promotion to people to increase awareness of the things that don't exist or don't happen in the current system but that they believe already happen (e.g., a belief that emergency departments somehow already know their history and medications).<br><br>• [Many participants in the workshops were unaware of what the benefits could be and emphasised that the benefits need to be explained in very concrete ways, illustrated by stories of real people and circumstances.] | | | | | | | |

CE, Consumer education; CA, Consumer Access; PE, Provider Education; S&P, System and Policy

## Recommendation 2

| Recommendation and actions | Type of recommendation | | | | Current level of implementation: technical and promotion | | |
|---|---|---|---|---|---|---|---|
| | CE | CA | PE | S&P | In place | In progress | Future |
| *Category 1 Recommendations: address the major issues requiring an integrated synergistic approach (in general these tend towards longer-term, structural solutions)* | | | | | | | |
| *1.2 Address concerns about the potential impact of developments in digital health on familiar and valued processes of care* (see next row down) | | | | | | | |
| **Recommendation 2**<br>General practices are the first point of care for most Australians and the primary source of health data about patients. There needs to be an integrated and systematic approach to enabling GPs and practices to support their patients in the most appropriate way to engage with MyHR. This approach requires action at multiple levels in a practice.<br>[Consumer Education] Address concerns about the potential impact of developments in digital health on familiar and valued processes of care. These concerns include:<br>[Consumer Access] There needs to be an integrated and systematic approach to enabling GPs and practices to support their patients in the most appropriate way | | | | | | | |
| f.  Fully engaging general practice in the design of the system [and ensuring that it integrates with all clinical software systems].<br>•  Fully engaging general practice in the design of the system, ensuring that it integrates with all clinical software systems | | | | | | | |
| g.  Providing training and resourcing to GPs and practice nurses for approaches to introduce MyHR in a gentle and minimally burdensome manner that builds on the patient's belief that the doctor is in control of | | | | | | | |

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| their care. This should include options that do not require the patient to use technology at all but that still support patients to understand what information a doctor uploads on their behalf.<br>• Providing training and resourcing to GPs and practice nurses in approaches to introduce MyHR in a gentle and minimally burdensome manner that *builds on the patient's belief that the doctor is in control of their care* | | | | | | | |
| h. Providing materials that make it easy for doctors or practice nurses to easily discuss what data can be uploaded and what the patient does and does not want uploaded, as well as potential benefits of use including both health and convenience benefits.<br>• Provide materials that make it easy for doctors or practice nurses to easily discuss what data can be uploaded and what the patient does and doesn't want uploaded | | | | | | | |
| i. Ensure that it is easy for the doctor to only upload data agreed with the patient.<br>• Same | | | | | | | |
| j. Supporting practices to provide computers that patients can access within the practice that include easy access to MyHR and high quality information sites.<br>• Same | | | | | | | |
| • **[from p.56 of report]** My Health Record may be forcing people to engage in a new process of 'self-service' care that may undermine the personal care that they are used to | | | | | | | |
| • **[from p.56 of report]** This was also expressed as a concern that in order to effectively interact with the healthcare system people will need to learn computer skills and organise computer access or else they will be at a disadvantage | | | | | | | |
| • **[from p.56 of report]** Many participants were unaware that the system could be used, and provide benefits to them, without them needing to | | | | | | | |

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| engage with the technology at all just by discussing with the doctor what would be uploaded | | | | | | |
| • **[from p.56 of report]** For these people the relatively passive components of MyHR were thought to be already occurring while their perception of the active features of MyHR was seen as frightening or burdensome and a possible intrusion into the face-to-face, personal care that they prefer. | | | | | | |

CE, Consumer education; CA, Consumer Access; PE, Provider Education; S&P, System and Policy

## Recommendation 3

| Recommendation and actions | Type of recommendation | | | | Current level of implementation: technical and promotion | | |
|---|---|---|---|---|---|---|---|
| | CE | CA | PE | S&P | In place | In progress | Future |
| *Category 1 Recommendations: address the major issues requiring an integrated synergistic approach (in general these tend towards longer-term, structural solutions)* | | | | | | | |
| *1.2 (continued) Address concerns about the potential impact of developments in digital health on familiar and valued processes of care* | | | | | | | |
| **Recommendation 3**<br>Where possible, utility should be built into the MyHR system to transparently enhance processes of care that people value.<br><span style="color:red">Utility should be built into the My Health Record, enhancing processes of care that consumers value, leading to an increase in the value and the trust in the My Health Record system</span> | | | | | | | |
| a. Integration with other systems such as systems at pharmacies, [community health centres], hospitals/emergency centres and the medical practices. Particular potential benefits/conveniences that were identified include streamlined prescription filling, better reminders and appointment making with the medical practice, reduced time waiting at emergency departments, and less need to spend time completing forms and repeating information when referred to other services.<br><span style="color:red">• Integration with other systems such as systems at pharmacies, community health centres, hospitals/emergency centres and the medical practices<br>• Benefits/conveniences that were identified included:<br>   - streamlined prescription filling<br>   - better reminder and appointment making with the medical practice</span> | | | | | | | |

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| - reduced time waiting at emergency departments and less need to spend time completing forms and repeating information when referred to other services | | | | | | | |
| b. As with Recommendation 2, there should be methods available for people who do not want to, or who are not able to, interact with MyHR to have it set up for them.<br><br>• There should be methods available for people who are not interested or able to interact with the system themselves to have these systems set up for them | | | | | | | |
| These conveniences will only help to increase the extent to which people value and trust MyHR if they are made aware of them, both as potential benefits and when they experience these benefits. Many consumers assume that integration of these supports, services and systems is already in place. | | | | | | | |

CE, Consumer education; CA, Consumer Access; PE, Provider Education; S&P, System and Policy

## Recommendation 4

| **Recommendation and actions** | Type of recommendation | | | | Current level of implementation: technical and promotion | | |
|---|---|---|---|---|---|---|---|
| | **CE** | **CA** | **PE** | **S&P** | **In place** | **In progress** | **Future** |
| *Category 1 Recommendations: address the major issues requiring an integrated synergistic approach (in general these tend towards longer-term, structural solutions)* | | | | | | | |
| *1.3 Providing opportunities to people who experience substantial barriers to engagement but who also have high capacity to benefit* (Note: Recommendation 2 is also particularly important for this issue) | | | | | | | |
| **Recommendation 4** A flexible and multi-level approach will help people facing barriers to access and engagement to participate at the level of their interest, and to achieve benefits equitably with those who face fewer barriers. This approach should consider the stages that people go through in engaging with digital health technologies, and the barriers that different groups of people might face. Figure 25 shows some of the issues and points of action that should be considered at each stage of a person's journey to engage with digital health technologies and MyHR. Some of the components of a flexible, integrated approach identified in the workshops were: <span style="color:red">There is a need for a flexible, multi-level approach to help people facing different barriers to access and engagement, considering the user journey when engaging in digital health technologies:</span> | | | | | | | |
|    f.   Implement Recommendation 2. | | | | | | | |
|    g.   To facilitate access to important health websites, including MyHR, provide computers in community settings such as libraries, neighbourhood houses, medical practices, pharmacies, centres providing University of the Third Age (U3A), and Men's Sheds. This is especially important in areas with poor Internet connections and for people without personal access to computers and good Internet services. There | | | | | | | |

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| will be additional benefits if there are people at these places who can provide some guidance about how to access and use these websites. | | | | | | | |
| • Provide access to computers that are set up to provide easy access to important health websites, including MyHR, in community settings such as libraries, neighbourhood houses, medical practices, pharmacies, centres providing U3A, men's sheds. This is especially important in areas with poor internet connections and for people without personal access to computers and good internet services…. | | | | | | | |
| h. Engage organisations like U3A, neighbourhood houses, libraries, and Men's Sheds in providing simple training to use computers for practical purposes.<br>• Same | | | | | | | |
| i. Make systems easily accessible through alternative technologies such as tablets and phones.<br> • Ensure that MyHR can be accessed through simple smartphone applications.<br> • Same<br> • Implement a system where people who don't have smartphones can interact through a mix of sms and phone calls [e.g. a summary of what information is uploaded, notifications of access, who to call to discuss concerns].<br> • Same<br> • Ensure that all promotional and informational materials contain a phone number to call, not just a web address.<br> • Same<br> • Ensure that complaints and problem-solving processes allow people to talk to an actual person.<br> • Same | | | | | | | |
| j. Provide all services and interfaces in multiple languages. | | | | | | | |

CE, Consumer education; CA, Consumer Access; PE, Provider Education; S&P, System and Policy

## Recommendation 5

| Recommendation and actions | Type of recommendation | | | | Current level of implementation: technical and promotion | | |
|---|---|---|---|---|---|---|---|
| | CE | CA | PE | S&P | In place | In progress | Future |
| *Category 2 Recommendations: actions at specific levels including actions required at the individual, family/community, practitioner/professional, and system levels (including design of digital health technologies) to increase uptake of eHealth technologies and MyHR*<br><br>This section contains additional recommendations based on the levels of action that have not already been included in Recommendations 1 to 4. | | | | | | | |
| *2.1 Health practitioner/professional roles* | | | | | | | |
| **Recommendation 5**<br>There should be clear guidelines [and training] for health professionals who access and use MyHR data for an individual in their care. These should include:<br><span style="color:red">There should be clear guidelines and training for health professionals who access and use My Health Record data for an individual in their care. These should include:</span> | | | | | | | |
| e. Circumstances in which access and use is or is not appropriate and permissible<br>• <span style="color:red">Same</span> | | | | | | | |
| f. Communicating with and engaging the patient whose record is being accessed, including:<br> • Informing the person that they have accessed the data<br> • Allowing the person to make any comments or clarifications that they wish | | | | | | | |

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| • Reassuring the person, where appropriate, that the practitioner will undertake their own assessment and provide an independent opinion<br>• If the MyHR data have proved useful in any way, explaining this to the person<br>• Discussing any data that will/could be uploaded as a result of the episode of care<br>• <span style="color:red">Procedures if data are found to be out of date or incorrect (see point c in next row)</span> | | | | | | | |
| g. Procedures if data are found to be out of date or incorrect <span style="color:red">(see point b in row above)</span> | | | | | | | |
| h. How to access problem solving support<br>• <span style="color:red">Same</span> | | | | | | | |

CE, Consumer education; CA, Consumer Access; PE, Provider Education; S&P, System and Policy

## Recommendation 6

| Recommendation and actions | Type of recommendation | | | | Current level of implementation: technical and promotion | | |
|---|---|---|---|---|---|---|---|
| | CE | CA | PE | S&P | In place | In progress | Future |
| *Category 2 Recommendations: actions at specific levels including actions required at the individual, family/community, practitioner/professional, and system levels (including design of digital health technologies) to increase uptake of eHealth technologies and MyHR*<br><br>This section contains additional recommendations based on the levels of action that have not already been included in Recommendations 1 to 4. | | | | | | | |
| *2.1 (continued) Health practitioner/professional roles* | | | | | | | |
| **Recommendation 6**<br>There is a need to ensure that all health professionals have an accurate and consistent understanding of MyHR and that they understand the potential benefits. This has been difficult to achieve due to ongoing changes during the MyHR roll out. Some health professionals feel that they have been bombarded with procedural information but still don't have an overall sense of what MyHR is really going to achieve: *'As health professionals we are bombarded but still don't know much about what it is'*. It was also noted frequently in the workshops that health professionals have high opt-out rates although the evidence for this was not cited. At the earliest possible time the following should be implemented.<br>Ensure that all health providers have an accurate and consistent understanding of My Health Record and that they understand the potential benefits. Some health providers feel that they have been provided with procedural information but don't have an overall sense of what My Health Record is going to achieve. An approach to fully inform health providers should be implemented that includes: | | | | | | | |

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| c. As a priority, Recommendation 1 should be fully implemented for health professionals. | | | | | | | | |
| d. Provision of simple up-to-date resources and training for health professionals with a focus on the following points as soon as the components of the MyHR system are sufficiently settled:<br><br>• Exactly what MyHR is and is not<br>• <span style="color:red">Same</span><br>• Specific benefits of MyHR<br>• <span style="color:red">Same</span><br>• Safeguards for security, quality, appropriate use<br>• <span style="color:red">Same</span><br>• How MyHR can synergise with and enhance normal care<br>• <span style="color:red">Same</span><br>• Options for engaging patients as per Recommendations 2 and 5<br>• <span style="color:red">Same</span><br>• Resources and financial support that are available<br>• <span style="color:red">Same</span> | | | | | | | | |

CE, Consumer education; CA, Consumer Access; PE, Provider Education; S&P, System and Policy

## Recommendation 7

| Recommendation and actions | Type of recommendation | | | | Current level of implementation: technical and promotion | | |
|---|---|---|---|---|---|---|---|
| | CE | CA | PE | S&P | In place | In progress | Future |
| *Category 2 Recommendations: actions at specific levels including actions required at the individual, family/community, practitioner/professional, and system levels (including design of digital health technologies) to increase uptake of eHealth technologies and MyHR*<br><br>This section contains additional recommendations based on the levels of action that have not already been included in Recommendations 1 to 4. | | | | | | | |
| *2.2 Community engagement/outreach strategies*<br><br>Recommendation 7 presents many of the ideas from the workshops about options for increasing access to and support for the use of computers and of digital health technologies, including MyHR, in community settings. | | | | | | | |
| **Recommendation 7**<br>The workshops produced many suggestions for opportunities and contexts where people may learn about MyHR other than from a health professional or the media. Some of these contexts may make it easier to highlight particular potential benefits and for people to develop their understanding in a shared and reflective manner: '*... social engagement is credible really because if you can find a small increase of people that do understand or can use that, that can easily permeate out into their social circles and get gradual exposure to the thing. It does not matter if they are homeless or otherwise if you can get a couple of people who are advocates that can permeate through their social circles. Often when you are presenting there will be two that really get it and the others will trickle in after talking to people and start to understand bits of it.*' | | | | | | | |

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| Strategies and resources should be developed to encourage and enable community facilities and organisations to discuss digital health resources, including MyHR, as part of activities that already engage people in learning about and discussing related issues. These could include: <br> <span style="color:red">Explore opportunities and contexts where people may learn about My Health Record other than from a health professional or the media. Some of these contexts may make it easier to highlight particular potential benefits and allow people to develop their understanding in a shared and reflective manner, these include:</span> | | | | | | | |
| • Health education and promotion events <br> • Computer training activities (see also Recommendation 4) <br> • U3A and other lifelong education activities <br> • [Retirement and financial planning activities] <br> • Activities that engage people in using computers for other important tasks in life such as MyGov <br> • Travel planning and sharing events <br> • Farming events and other business planning and management events <br> • <span style="color:red">Same for all of these</span> | | | | | | | |
| To take advantage of such opportunities, it would be highly desirable to have materials available that present potential benefits in practical, relevant ways as discussed in Recommendation 1. | | | | | | | |
| It would also be useful to ensure that there are links to MyHR or relevant information about MyHR on web pages and materials related to the activities listed above. | | | | | | | |

CE, Consumer education; CA, Consumer Access; PE, Provider Education; S&P, System and Policy

## Recommendation 8

| Recommendation and actions | Type of recommendation | | | | Current level of implementation: technical and promotion | | |
|---|---|---|---|---|---|---|---|
| | CE | CA | PE | S&P | In place | In progress | Future |
| *Category 2 Recommendations: actions at specific levels including actions required at the individual, family/community, practitioner/professional, and system levels (including design of digital health technologies) to increase uptake of eHealth technologies and MyHR*<br><br>This section contains additional recommendations based on the levels of action that have not already been included in Recommendations 1 to 4. | | | | | | | |
| *2.3 Strategies for engaging families and individuals*<br><br>The recommendations that have already been presented include many recommendations to support flexible implementation of MyHR to support a wide diversity of individual needs and preferences within the community. This section has a focus on suggestions that were made in workshops about engaging families and about families supporting each other. | | | | | | | |
| **Recommendation 8**<br>A significant finding of both the semi-structured interviews and workshops was that in many families one person was substantially more engaged in digital health technologies, and likely to be more interested in MyHR, than other family members. This can have both positive and negative aspects. It can be positive because the strengths of one person can help other family members. It can be negative if that person becomes unable to continue that role and other family members do not have the knowledge of what has been done for them or the ability to be engaged on their own behalf. Digital health technologies, including MyHR, should be implemented in such a way that engages participation of different family members where possible. Specific suggested actions include: | | | | | | | |

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| • Develop resources that assist families to discuss MyHR together or people to discuss with elderly parents, possible as part of other discussions about future health planning [e.g. Advanced care planning]<br>• Educate adolescents about MyHR (schools, online)<br>• Provide simple materials to guide parents through how they can control MyHR for their children<br>• Consider the role of parents making decisions for children in implementing all other recommendations.<br><span style="color:red">A significant finding of both the semi-structured interviews and workshops was that in many families one person was substantially more engaged in digital health technologies and likely to be more interested in MyHR than others.</span><br><span style="color:red">• Digital health technologies, including MyHR should be implemented in such a way that engages and reaches individuals as well as families.</span><br><span style="color:red">• Teaching about MyHR in schools</span> | | | | | | | |

CE, Consumer education; CA, Consumer Access; PE, Provider Education; S&P, System and Policy

# Recommendation 9

| Recommendation and actions | Type of recommendation | | | | Current level of implementation: technical and promotion | | |
|---|---|---|---|---|---|---|---|
| | CE | CA | PE | S&P | In place | In progress | Future |
| *Category 2 Recommendations: actions at specific levels including actions required at the individual, family/community, practitioner/professional, and system levels (including design of digital health technologies) to increase uptake of eHealth technologies and MyHR*<br><br>This section contains additional recommendations based on the levels of action that have not already been included in Recommendations 1 to 4. | | | | | | | |
| *2.4 Design and features of digital health technologies*<br><br>Recommendations 2 to 4 emphasised the need to provide options for people who do not wish to or who are unable to directly engage in the IT interfaces of MyHR. The recommendations in this section are about supporting individuals who do wish to interact with and control their MyHR but who, in order to engage, need the design and features of digital health technologies to be easy to access and navigate. | | | | | | | |
| **Recommendation 9**<br>Many participants in the workshop expressed desired characteristics of the system to do with the simplicity of the MyHR interface, the reliability of the system (even with poor Internet connections), and the ease of solving problems within the system. While many community members reported having experienced difficulties with these issues in the past, their negative experiences may not have related to MyHR but may reflect other negative past experiences including trying to interact with MyGov services. None-the-less both consumers and health professionals indicated that the following would be required for ease of use:<br>Same | | | | | | | |

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| f.  Extremely simple language used throughout. <br> • Same | | | | | | | |
| g.  Ensure short loading times for MyHR web pages and minimum need to load new pages. <br> • Same | | | | | | | |
| h.  Available on multiple platforms including phones and tablets. <br> • Same | | | | | | | |
| i.  Options for people who can't remember passwords (fingerprint, retina, [face]). <br> • Same | | | | | | | |
| j.  Ability to easily solve most problems online or with support that is quick and involves the option to talk to a real person. <br> • Same | | | | | | | |

CE, Consumer education; CA, Consumer Access; PE, Provider Education; S&P, System and Policy

## Recommendation 10

| Recommendation and actions | Type of recommendation | | | | Current level of implementation: technical and promotion | | |
|---|---|---|---|---|---|---|---|
| | CE | CA | PE | S&P | In place | In progress | Future |
| *Category 2 Recommendations: actions at specific levels including actions required at the individual, family/community, practitioner/professional, and system levels (including design of digital health technologies) to increase uptake of eHealth technologies and MyHR*<br><br>This section contains additional recommendations based on the levels of action that have not already been included in Recommendations 1 to 4. | | | | | | | |
| *2.4 Design and features of digital health technologies*<br><br>Recommendations 2 to 4 emphasised the need to provide options for people who do not wish to or who are unable to directly engage in the IT interfaces of MyHR. The recommendations in this section are about supporting individuals who do wish to interact with and control their MyHR but who, in order to engage, need the design and features of digital health technologies to be easy to access and navigate. | | | | | | | |
| **Recommendation 10**<br>For some people, it is important that the MyHR system enables them to check and correct the information that is uploaded, including making sure that the information has sufficient context to be correctly interpreted by future users. These people are also likely to want to exert control over what information is uploaded and to be able to add comments or information of their own. The MyHR system should make it as easy as possible for users to: | | | | | | | |

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| The My Health Record should make it as easy as possible for users to exert control over what information is uploaded and to be able to add comments or information of their own: | | | | | | | |
| g. Identify and read all information that is uploaded, and identify who uploaded it<br>• Same | | | | | | | |
| h. Have the ability to block particular information from being visible to other users<br>• Same | | | | | | | |
| i. Add notes of comment or explanation to provide context to any particular uploaded information<br>• Same | | | | | | | |
| j. Add general notes of their own<br>• Same | | | | | | | |
| k. Select a set of information that they want available for a particular purpose (e.g., travel)<br>• Same | | | | | | | |
| l. Print out an extract of selected information for overseas travel or for other purposes<br>• Same | | | | | | | |
| Many of these points would only be effective if health professionals who upload information are easily contactable and have the time, willingness, and technical capability to explain about information that has been uploaded, correct errors, and/or remove uploaded information.<br>Same | | | | | | | |

CE, Consumer education; CA, Consumer Access; PE, Provider Education; S&P, System and Policy