Global Centre for® Modern Ageing

Inspiring new models of care: Digital health in the home.

Where are we now? Where to from here?

AN EXPLORATION OF THE AUSTRALIAN CONTEXT

MAY 2021

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"For digital advancements to improve people's lives, we as an ecosystem need to have a deep understanding of the nuances, realities and aspirations of modern ageing. This research with the Global Centre for Modern Ageing helps to build a bridge between people's needs and current market realities, and offers insights and evidence to allow us all to improve the design and implementation of digital products and services with greater purpose. Google Chrome Enterprise is proud to partner with GCMA to deliver these important insights."

- Max, Google Chrome Enterprise, Australia, New Zealand and Indonesia

Foreword

Digital health is central to enabling people to age in place. Breaking down barriers through more considered technology design is crucial to improving quality of life and care of people as we age.

Including end users and health care workers in health technology design will improve usability and workflow integration. In addition, providing central and independent information and skills development for industry are some of the clearest steps forward.

In partnership with Google Chrome Enterprise, the GCMA undertook a study investigating the challenges and opportunities facing the Australian healthcare industry and to understand older Australian's thoughts and concerns in implementing and truly integrating health technology in their homes.

We spoke with clinicians, aged care staff and community members, and our findings demonstrate that a coordinated effort is required to reskill industry, validate and shed light upon the most suitable technology, and design models of care that will not compromise on quality care provision.

Julianne Parkinson
Chief Executive Officer
Global Centre for Modern Ageing

Key Insights

Identification of the priority areas for more digitally enabled healthcare provision

Reasons why quality of care must remain the top priority

The importance of communicating the benefits of technology for healthcare and ageing well

A definition of what digital health means

The barriers to adoption as determined by target audiences

Priority Areas

Individuals in each cohort of our primary research outlined the following goals as priority areas for more digitally enabled healthcare provision:

	Community members	Aged care providers	Clinicians
Increased accessibility of care	!		
Improved safety	!	!	
Better Health outcomes	!	!	!
Enabling independence	!	!	
Workflow efficiencies		!	!
More proactive, preventative, and predictive healthcare	!	!	!
Greater peace of mind for users and family	!		

Figure 1: Goals of digitally enabled healthcare provision (GCMA 2021)

Pathway to a digitally enabled model of care

The insights from this study highlight that addressing the following themes will encourage a more digitally-enabled model of care.

Top Priority - Care

Quality of care must remain the top priority.
Using technology to enhance, supplement and improve upon healthcare provision is essential for widespread uptake. This technology should never be designed or implemented to replace the face-to-face provision of health care.

Usability drives adoption

Usability is vital for adoption by both community members and professionals.
While there has been an increase in confidence and technology use in recent years, mainly since COVID-19, user experience for both the community member and the professional is paramount for the widespread adoption of digital technologies.

Funding is available

Reimbursement paths need to be clearer for clinicians.
Encouraging uptake of the federal government's 'Practice Incentive Program' (PIP) and encouraging utilisation of existing allied health networks may help GP uptake. Allied health is active in the area of health technology prescription and setup funded through homecare packages. For updating clinicians platforms there are funding programs available (PIP). For patients where a need or benefit is identified, creating and promoting these referral networks may lead to increased technology uptake in the home.

Trust will drive uptake

An independent, consistent, and comprehensive validation process for health technologies is needed.
The current process for 'vetting' technologies is largely absent for local clinicians and for aged care providers is an ad-hoc, time-consuming and imperfect process. Aspects such as market scanning, piloting, and assessing the technologies on criteria such as efficacy, integration with existing technologies, privacy and security are some of the primary considerations.

Value in upskilling

Skills shortage needs to be bridged through hiring, skills development, effective training, support and partnerships.
With pressure on the aged care industry to be digitally enabled and provide reports and information quickly and efficiently, there is a sense that the aged care industry is lagging in its implementation of technology. However, the prioritisation of technology and inclusion of digital strategies in recent years has meant the area is the subject of ongoing focus and scrutiny, and consequently, funding.

Communicate tech benefits

The perceived benefits of digital health technologies need to be leveraged. Emphasising the benefits to all stakeholders will improve the uptake of technologies. For instance, communicating the preventative and early detection benefits may shift community perceptions away from the more constrained (and common) mindset that technology is only used to manage poor health or illness. For professional cohorts, highlighting the improvements that can be made in the provision of care and workflow efficiencies are some of the potential benefits that could be emphasised to improve buy-in.

Efficiency through integration

Devices should be easily integrated into the existing technology ecosystems.
The ability to add a device without adding to the workload or number of platforms will mean professional efficiency and training is minimised while augmenting the capacity and capability of the digital health ecosystem.

Mitigate privacy concerns

Information should be easily accessible and colloquially written to overcome data privacy concerns.
Who has access to the data, what the data is being used for, how the data is stored (where, how long, security measures), and the personal and societal benefits of sharing the data were thought to be the most important aspects.

Digital Strategy is essential

Industry needs to look at the big picture by reviewing digital capabilities from a broad, holistic perspective, as opposed to incremental change.
Taking a step back to assess the ecosystem as a whole and revamping that ecosystem may have a greater benefit and improved workflows than incremental changes, which tend to be the norm.

What do we mean by digital health?

For a significant time, the Australian government's digital health focus has been on digitising medical records. In response to COVID-19, the emphasis shifted to telehealth.

Looking to the future, the digital health ecosystem unfolds to include evidence-based innovations, products, care pathways, collaborations, partnerships, and programs, which combine and share the following key objectives:

- Reduce inefficiencies.
- Improve access.
- Reduce costs.

- Increase quality.
- Make medicine more personalised, preventative, and predictive.

Management	Prevention	Consultation	Diagnosis	Treatment
Traditional suite				
Care plans	Sports and fitness	Pharmacy	Pathology	Clinical care treatment plan
Clinical care team	Population health campaigns	Paper records	Radiology	Medical devices
Pharmaceutical	Early childhood programs	Clinical point of care (physical location)	Govt. screening programs	Implantables
Community support service	Wellness		Clinical assessment	Surgery
Medical device	Community outreach			Pharmaceutical
	Vaccination			Physical therapy
	Nutrition			
Digital innovations and enhancements				
Outpatient Telehealth	Sensors	Telehealth	Genomics	Bioprinting
Virtual Health coach	Virtual Gym	Pre-consult triage	Surgical simulations	Virtual reality
Online peer support	Fitness tracking	Virtual health assistant/chatbot	Wearable sensors	Remote monitoring
Health portals	Alerts and notifications	Electronic health records (HER)	Telehcare / telehealth	Virtual clinical trials
Polypharmacy Support services	Wearables	Electronic medical records (EMR)	Ingestible sensors	Adherence technologies
Virtual mental health solutions	Virtual health coaches	Electronic prescriptions	Connected remote diagnostic kits	In-home treatment solutions
Cognitive behaviour Therapy medication adherence	Genetic screening		Wearable digital diagnostics	Online rehab programs
Chronic Disease medication & adherence	Remote Monitoring			Hospital in the home
	Personalised nutrition			Digital Therapeutics

Figure 2: Digital health technologies and their relevance

Adapted from: Digital Health: Creating A New Growth Industry For Australia: Strengths, Opportunities, Constraints and Barriers to the Commercialisation of Evidence Based Digital Health Technologies in Australia. ANDHealth (Australia's National Digital Health Initiative). 2018.

Health technology by context

Overall, medical technology is perceived to be more valid and trustworthy; and Consumer-focused technology is perceived as more user friendly and better integrated with other technology.
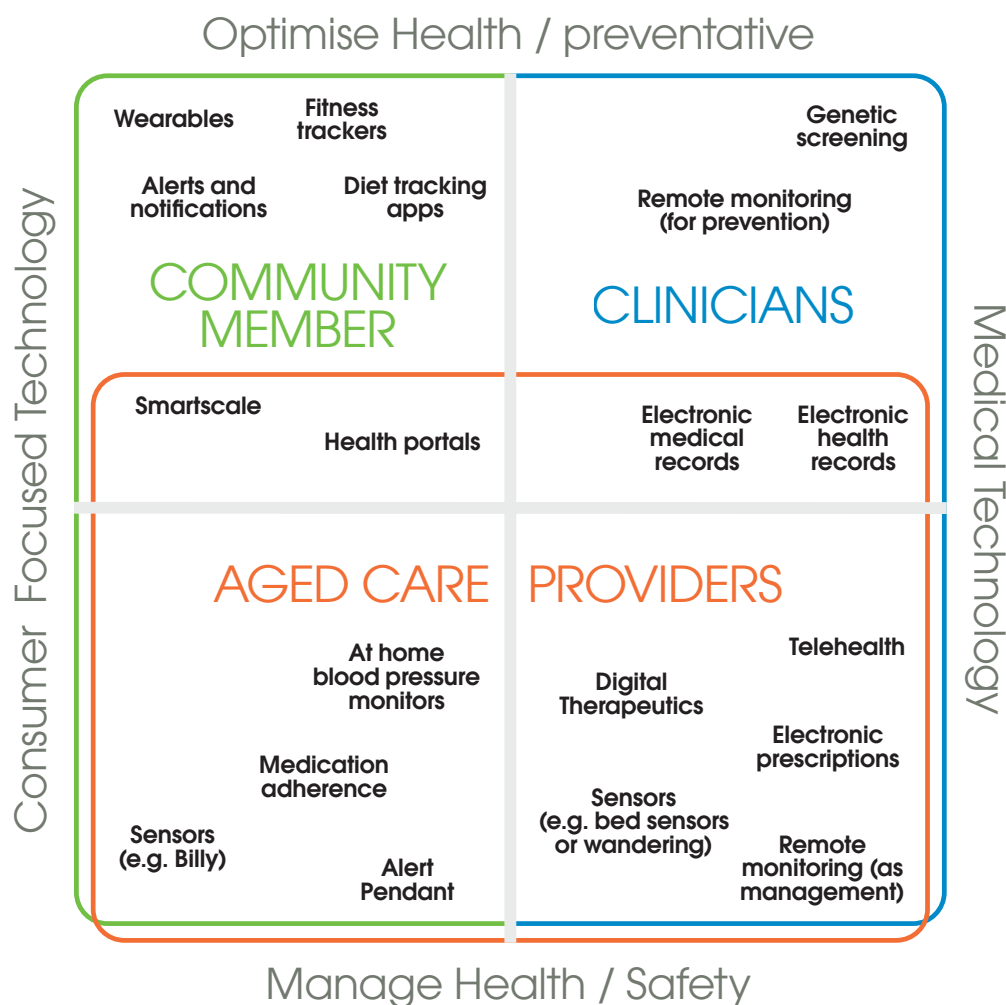

Figure 3: Health technology by context (GCMA 2021)

*Please Note: This chart is for illustrative purposes only and is based on qualitative data.

- Aged care providers, tend to utilise both consumer-focused technology and medical technology in the home. Often consumer-focused technology is chosen for its usability and simple integration.
- Aged care providers, primarily utilise technology to manage poor health and safety and are beginning to use technology to optimise health, prevent, and predict declines.
- Clinicians, tend only to utilise medical technology. This limitation is due to the validity and trust that is associated.
- Community members, primarily utilise consumer-focused technology unless prescribed or directed to use medical technology.

Aspirations in health technology

"I would try to automate it (health technology) so that would give me an alert for issues or give me a readout once a month. I'd use a series of devices that I can use to monitor my blood pressure, weight, heart rate, activity. So I guess giving you control of your own health. There is nothing worse than going to the doctor and they say what's your cholesterol? or ask about your history and you say, I don't know; if it were a digital device or app that keeps track, that would be ideal."
- Community Member

"Technology has the opportunity to assist people earlier than we might expect. we often wait until someone has a fall before we act. We need to understand what quality of life means to people and then ask what can we do to maintain that. Finding ways that are noninvasive and not putting pressure on them and finding what we can implement while they're healthy to keep them living in their home."
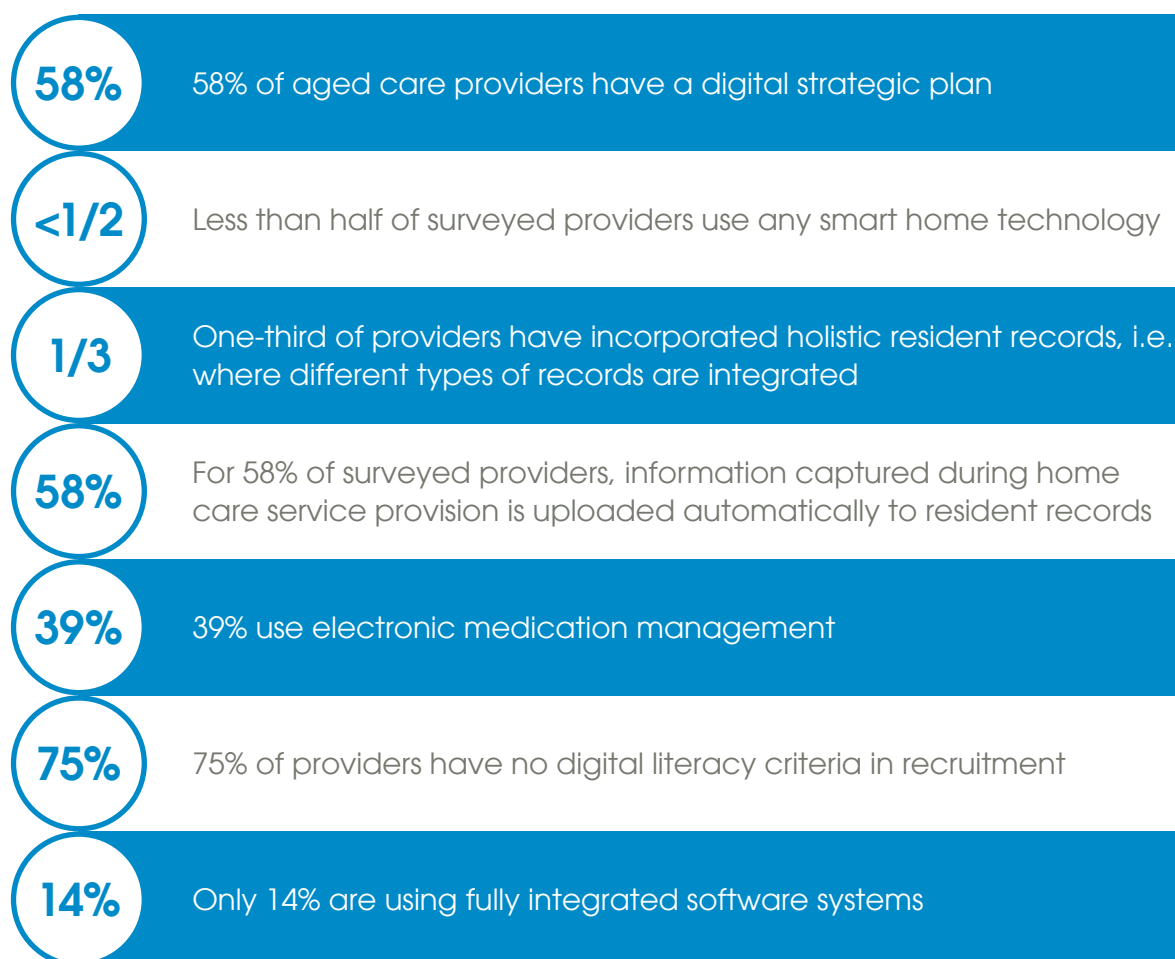**- Senior-level Aged Care Staff Member**

"We have people in the home, families involved, call centres, clinicians and hospitals and they all need to communicate with one another and have access to similar information. Not siloed and in a safe and secure way, we need to be able to provide that care."
- Senior-level Aged Care Staff Member

Current adoption of digital health in the home

The Aged Care Industry Information Technology Council's (ACIITC) October 2020 report, Innovation Driving Care Systems Capability, measured variability of telehealth and telecare uptake among aged care providers.

The findings included:

58%   58% of aged care providers have a digital strategic plan

<1/2   Less than half of surveyed providers use any smart home technology

1/3   One-third of providers have incorporated holistic resident records, i.e. where different types of records are integrated

58%   For 58% of surveyed providers, information captured during home care service provision is uploaded automatically to resident records

39%   39% use electronic medication management

75%   75% of providers have no digital literacy criteria in recruitment

14%   Only 14% are using fully integrated software systems

Source: Barnett K, Livingstone A, Margelis G, Tomlins G, Gould G, Capamagian L, Alexander G, Mason C, Young R (2020) Innovation driving care systems capability: Final Report, Aged Care Industry IT Company.

Our primary research reflected these findings, with many aged care providers detailing their digital strategic plans and describing the recent shift in prioritisation of digital health.

Compared to aged care providers, uptake of digital health technology by participating general practice clinicians is relatively low. From the interviews conducted, digital health technology was thought to sit outside of a clinicians consultative role, with no clear reimbursement paths.

Opportunities for Industry

Combined insights from the primary research, secondary research[1] and the Royal Commission show that industry needs to focus on:

Capacity building

- Grant funding for assistive technology and home modifications that promote independence in daily living.
- The establishment of an Aged Care Research and Innovation Fund focused on workforce-related research and technology, the socioeconomics of ageing, and the prevention and treatment of ageing-related health conditions.
- Procurement procedures that can assess ROI.
- Inclusive design principles to improve workflow integration, decrease resistance to technological uptake and improve the adoption and establishment of digital health technology innovations.

"I didn't get into this industry because I'm interested in tech, and very quickly, I had to become an expert. We have to work out how to build that (digital) capability and partner with those with the knowledge. You have existing tech and need to figure out how to integrate the new. You can make mistakes that cost millions of dollars. It's a whole new world, and I have to build the framework"
- Senior-level Aged Care Staff Member

Infrastructure development

- Universal adoption of digital care management systems (including medication management) that are interoperable with My Health Record.
- Investment in technology and information and communications systems.

Workforce training and development

- To increase adoption, communication of benefits internally to staff, end-users' families, and end-users themselves.
- Utilising technol ogy champions to aid in the adoption and provide a go-to source for information.
- Provide clear evidence of a relationship between the technology and an improvement of care.
- Support to improve training and the avenues through which training is provided.

"We've made the mistake with one rollout that we didn't initially run training for because it was so user friendly and we discovered the training is as much about the why as it is about the how."
- Senior-level Aged Care Staff Member

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1   Source: Barnett K, Livingstone A, Margelis G, Tomlins G, Gould G, Capamagian L, Alexander G, Mason C, Young R (2020) Innovation driving care systems capability: Final Report, Aged Care Industry IT Company.

Strategic planning and evaluation

- Improve digital maturity by reviewing and improving digital capabilities from a broader, more holistic perspective rather than incremental improvements.
- Benchmarking the sector to track progress.
- Reviewing standards to incorporate the integration of technology.
- Independent assessment of technology products and projects this could be validation of technology across the sector which considers the needs and competing requirements of all stakeholders.

"The biggest challenge is trying to take a step back. If you can solve a problem that is burning right now, that seems to be the focus, but I'm not sure that's the best approach. There is this attitude that if it not broken, don't fix it."
- Senior-level Aged Care Staff Member

Barriers to adoption

Exploring barriers to adoption uncovered a wide range of factors hampering the utilisation of digital health, which tended to vary by setting. While the following is not exhaustive, it provides a summary of the key and recurring barriers.

	Aged care	Local Clinicians	Hospital Clinicians
Poor digital Literacy among staff	✕	✕	✕
A lack of data Interoperability	✕	✕	✕
A lack of trust in the technology (a lack of validation)	✕	✕	✕
Knowledge of available technology	✕	✕	✕
Legacy IT Systems	✕	✕	✕
Funding, ROI, and reimbursement	✕	✕	
Lack of, or unclear governance standards	✕	✕	
Poor workflow integration	✕	✕	
Insufficient or lack of training	✕	✕	
Data management & response (e.g., security, liability and procedures)	✕	✕	
Funding: Access to hardware	✕		✕
Workplace culture	✕		✕
Technical limitations (e.g. wifi capabilities)	✕		
Misconceptions of older people & tech use	✕	✕	

Figure 4: Barriers to digital health technology uptake by sector (GCMA 2021)

Conclusion

With limited uptake and utilisation of digital technology in the home, exploring the barriers and opportunities highlights the need for concerted and coordinated efforts to be made by various stakeholders in the industry.

> **Broad and holistic changes at organisational levels as opposed to incremental change will ensure that the appropriate framework is in place for future innovations.**

Breaking down barriers through more considered technology design to improve usability, workflow integration, industry standards of interoperability, central and independent information on technology efficacy and safety, and skills development are some of the most apparent steps forward. While the digital health industry develops, promoting the benefits for all stakeholders remains a major tool to gain buy-in from professionals, end-users, and family members.

The GCMA is committed to supporting the ongoing assessment and adoption of digital technology by developing an assessment and validation framework that will allow aged organisations and potential vendors to embrace an inclusive approach for the implementation of health technologies.

About the research

Aim: to identify the challenges and opportunities facing industry and understand community members' thoughts and concerns in implementing health technology.

Approach: multi-methods approach including:
- Desktop research providing an overview of existing research.
- In-depth interviews with 32 participants.

Timing: The study was undertaken between February and March 2021.

Questions about the research?

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