Australia’s health reimagined
The journey to a connected and confident consumer

March 2022
Acknowledgement of Country

The authors acknowledge the Aboriginal and Torres Strait Islander peoples as the traditional custodians of the lands on which we work and live. We recognise that connection to Country is central to the life of First Nations peoples and that through caring for the land peoples are enriched in their mental, physical and spiritual wellbeing.

We pay our respects to their cultures, Elders past and present and honour their continuing connection to land, waters and community.

Contents

Foreword 03
Executive summary 04
Background 09
Section 1 – The case for change 10
Section 2 – Australia’s health reimagined 14
Section 3 – Three horizons to a reimagined health system 16
Section 4 – Seizing the opportunity 20
Authors 23
Endnotes 24
“We need a far more linked or integrated health system, especially between public and private health systems. The more information my clinicians have about me, the better my health outcomes will be.”

Consumer quote from a CHF Kitchen Table discussion, October 2021
Executive summary

Following the emergence of COVID-19 and significant foundational investment in digital health infrastructure, Australia’s health system, like all health systems globally, is rapidly building momentum towards a digital future. Based on the Reimagining Healthcare Consumer Survey1 and a rapid review of recent literature2, this whitepaper presents the purpose, path and principles to deliver a digitally enabled future health system – one that benefits all Australians and removes barriers to accessing healthcare.

The consumer survey, one of the largest on virtual health since the start of the pandemic†, found that around 70% of Australians are willing and ready to use virtual health and over 80% are ready to share their health data in a digitally enabled future health system. But the survey also highlights risks of digital exclusion that empowers Australians and integrates virtual and traditional healthcare, better connecting individuals to the broader set of factors influencing their health.

Increasingly, consumers are demanding and driving this change. The health system’s acceleration of telehealth is playing catch-up to the growing number of people actively choosing to take health into their own hands with consumer-facing wearables, apps, devices and other digital tools.

As our consumer survey found that 71% of people are already aware of digital technologies that support health monitoring and 56% are willing to use mobile applications, wearable technologies and other personal medical devices to manage their health, our challenge lies in ensuring that we use technology to improve the equity of access to health – not create a new digital barrier.

It’s inevitable the health system will undergo a digital transformation as seen in travel, media and other sectors. This transformation will change how people contact the health system, and our survey shows that’s what they increasingly expect. However, transformation is not without risk. It requires attention to and investment in change management, infrastructure and new ways of delivering care. This whitepaper charts a course for reimagining the health system so it can digitise with purpose, serve the needs of individuals and deliver improved outcomes and value for all Australians.

Here, we set out the challenges that must be addressed across the quadruple aim1 to improve population health and sustainably deliver a better experience for consumers and health workers. The quadruple aim provides a useful framework for understanding how well the system delivers outcomes across a range of perspectives. The system must evolve to meet these challenges and take advantage of the momentum for change created by the pandemic.

This whitepaper, Australia’s Health Reimagined, is the culmination of work from a Digital Health CRC project delivered by Deloitte, Curtin University and the Consumers Health Forum of Australia. It builds on and is directly informed and supported by our comprehensive consumer survey and rapid review of recent literature.

Australia’s Health Reimagined is driven by four key objectives:

1. Demonstrate why now is the time for the health system to transform
2. Set a bold ambition for the health system of the future
3. Present a three-horizon model to deliver Australia’s future health system
4. Provide recommended actions for policy, research and practice to deliver change

Definitions
Virtual health, or digital health, is defined as non-face-to-face clinical care, professionally enabled through digital mechanisms such as telemedicine and telehealth, remote monitoring, integration of consumer data and digital tools, and use of apps and devices. These mechanisms connect clinicians, patients, care teams and other health professionals to provide health services, support patient self-management, share health information and coordinate patient care across the health continuum.

Telehealth, as a subset of virtual health more generally, is a method of healthcare delivery that uses information and communications technology (ICT) to transmit audio, images and/or data between a patient and a healthcare provider. Telehealth can be used to provide diagnosis, treatment and preventive and curative aspects of healthcare services.

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1 The quadruple aim, introduced by Bodenheimer and Sinsky (2014), describes the four aims of an optimally performing health system:
1. Enhancing the consumer experience
2. Improving population health and health equity
3. Reducing costs and providing better value care
4. Improving the work life of healthcare providers.

† The Reimagining Healthcare Consumer Survey comprised responses from 1,826 consumers from across Australia in 2021.
Key survey insights
The Reimagining Healthcare Consumer Survey* made a number of key findings:

<table>
<thead>
<tr>
<th>Finding</th>
<th>Survey</th>
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<tbody>
<tr>
<td>Experiences with telehealth are positive.</td>
<td>69% of people surveyed experienced telehealth in the past 12 months. Of those people: 72% agreed or strongly agreed the outcome was the same as it would have been face-to-face. 68% agreed or strongly agreed the wait was shorter than for a face-to-face consultation. 83% agreed or strongly agreed the doctor or other health provider was equally as knowledgeable as other doctors or health providers they have seen in person.</td>
</tr>
<tr>
<td>Willingness to use technology to improve access to care is high.</td>
<td>74% were at least somewhat willing to access a health coach. 74% were at least somewhat willing to access a digital navigator. 65% said they would consider using more advanced home-based technologies to help identify and diagnose health conditions.</td>
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<tr>
<td>Consumers want to be in control of their health data.</td>
<td>83% were at least somewhat interested in being able to access their own health records, share their health information, send messages to their healthcare team and, if appropriate, edit their care plans using a personal device.</td>
</tr>
<tr>
<td>Consumers want providers to share information to improve their care.</td>
<td>By giving healthcare providers shared access to their health information: 71% agreed or strongly agreed it would improve communication between them and their healthcare providers. 70% agreed or strongly agreed it would improve communication between their different healthcare providers. 51% of participants were not at all willing to share de-identified health information tracked in apps and devices with private/not-for-profit health businesses.</td>
</tr>
<tr>
<td>Risks of a digital divide.</td>
<td>Compared to those with university education or higher, those with high school education or lower were: 3x less likely to be aware of digital health technologies 5x less likely to have access to digital health technologies 5x less willing to use digital health technologies 2x as likely to be comfortable to share health information 3x less likely to be interested to access and contribute to their healthcare plans.</td>
</tr>
<tr>
<td>17% of consumers experienced some technical difficulties when accessing telehealth.</td>
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<td>17% of consumers reported the technical quality of the telehealth consultation affected their meeting.</td>
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A vision for a reimagined health system
Vision - a health system that supports all Australians to live their best, healthiest lives.

This future is driven by the confident and connected consumer and enabled by the quadruple aim:

- Enhancing the consumer experience
  People receive care at a time, in a format and location of their choice, that is responsive to their complex, holistic needs. Technology is used to support individuals with their health and wellbeing.

- Improving the work life of healthcare providers
  Digital technology, automation and AI are leveraged to improve the health workforce’s experience, reduce administrative burden and lift their capacity. Health workers have diverse capabilities, such as data literacy and the ability to draw predictive insights from integrated data sets to improve decision making.

- Reducing costs and providing better value care
  The ecosystem is founded on preventative and personalised healthcare measures, new service delivery models catering for both virtual and face-to-face care, improved safety and quality, and funding models that incentivise integrated healthcare journeys. These enabling factors create greater efficiencies and reduce costs.

- Improving population health and health equity
  Vast data sets are combined across the social determinants of health to deliver a range of personalised care services focused on prevention and wellbeing. The full health ecosystem is integrated and connected to the consumer.

Design principles of a people-centred health system
The Reimagining Healthcare Consumer Survey provides valuable insights into the principles that must guide the health system’s transition into a digitally integrated ecosystem:

- Digitise with purpose
- Empower and engage consumers
- Meet individual needs
- Not digital only, enhance not replace
- Invest in equitable connectivity
- Uplift digital maturity
- Transparent, agile and accountable
- Workforce experience

*Educational attainment and willingness to use technology for health and to share health information – The Reimagining Healthcare Survey*
Background

Australia’s health system is world class and serves the community incredibly well. However, crucial areas for improvement are revealed by assessing the health system’s ability to meet the quadruple aim: enhance consumer experience, improve population health and health equity, reduce costs and provide better value care, and improve the work life of healthcare providers.

The global pandemic forced the health system to rapidly adopt digital technology, showing the sector can establish virtual healthcare without significant impediments to effective service delivery. While this shift is widely supported and well overdue, the continuation of this transformation should not simply digitise old ways of working. The true opportunity is to reimagine our health system and digitise with purpose.

The Reimagining Healthcare Consumer Survey found around 70% of Australians are willing and ready to use virtual care and 80% are ready to share their health data in a digitally enabled health system. It also highlights the risks of a digital future which, unless properly managed, could create a digital divide—particularly for those who have the most to gain.

Although the survey’s findings show there is strong support for a digital future, they also reinforce the need for a considered approach to this transformation. Simply digitising the current health system will create barriers and add to the system’s fragmentation, especially for those most in need. The survey found a stark difference in reported access to and willingness to use digital health technology and interact with their healthcare plans based on educational attainment. Given lower educational attainment is also a factor in poorer health outcomes, there is a risk of a digital divide without careful planning and management. Specific and targeted strategies are needed to address these and other issues to avoid a digital divide and achieve the quadruple aim.
Section 1

The case for change

Globally, Australia’s health system compares favourably on a range of measures including care outcomes and administrative efficiency. But like all health systems, it’s facing significant challenges that will worsen over time. Compared to countries with similar healthcare systems like Germany and Norway, and even low-performing countries like the United States, Australia is considerably poorer in patient engagement and delivering preventative, safe and coordinated care. We describe these challenges below within the context of the quadruple aim and highlight the need for change to ensure Australia’s world-class health system maintains its level of service.

Identifying the health system’s pressures and challenges provides a clear basis for what must be addressed and why the current system isn’t structured to be sustainable nor meet individual needs. We present these facts to illustrate the opportunity to reimagine Australia’s health system and ensure these significant challenges are addressed through the impending digital revolution.

The health system is complex. Most people rely on multiple providers and different parts of the system for their care. This complexity is anticipated to grow as we move towards more personalised care and address individual health needs, with an increasing requirement for coordination between providers across the care continuum. Because of this inherent complexity, consumers commonly report challenges with accessing and navigating health services and receiving coordinated care. The 2021 ABS patient satisfaction survey found 13% of people experienced issues caused by a lack of communication between health professionals, and this rate increased for those with long term health conditions. Additionally, just under 20% felt they waited too long to see a specialist and didn’t receive enough time with them.

The Australian Digital Inclusion Index suggests rural and remote communities face technological barriers to further adoption of virtual health, reporting 17% of Australians remain highly excluded with 8% variation between regional and metropolitan communities. Further, 14% of Australians would need to pay more than 10% of their household income to gain quality, reliable connectivity. These issues are impeding a digitally enabled health system and must be addressed as a foundational requirement of digital connectivity to support improved care coordination.

Australia’s health system does not serve everyone equally and will be increasingly unaffordable in its current form.

Enhancing the consumer experience

Consumers are experiencing gaps in access to health services*

13% of consumers experienced issues due to a lack of communication between health professionals
17% of people waited longer than they felt acceptable for a medical specialist
18% of consumers felt medical specialists did not always spend enough time with them
22% of people waited longer than they felt acceptable for a GP

*ABS Patient Experience Survey 4

Section 1

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*ABS Patient Experience Survey 4
The health workforce would need to grow from 11% to 45% of the total Australian workforce to meet rising demand.

Our health workforce will be overwhelmed

Health workers have played an extraordinary role in managing the pressures of COVID-19 and keeping the health system operational. However, it hasn’t been without increasing fatigue, burnout and mental health issues driven by the greater workload and social isolation. International studies reported 43% of medical physicians felt burnt out prior to the pandemic6, rising to 49% during the pandemic7.

Looking ahead, the health workforce is expected to experience significant shifts in its age profile, resulting in declining workforce participation rates and a real challenge to meet the health needs of an ageing population. Australia’s population is estimated to reach 35.9 million by 20508, compared to 24 million in 2021 – a quarter (22%) of the population9. Over the same period, the overall workforce participation rate is expected to decline from 66% to 49%10. This decline, together with the expected growth in healthcare demand driven by an ageing population, will have a catalytic effect on the health system and its workers. Deloitte modelling based on figures from the ABS11,12 and National Health Funding Body13 estimates that if the system does not evolve, our health workforce must become four times more productive by 2050 to meet forecast demand.

Put another way, if current levels of productivity were held constant, the health workforce would need to grow from 11% to 45% of the total Australian workforce to meet rising demand.

Given current concerns about the added pressure and fatigue affecting health workers, the system cannot meet Australia’s future health needs in its current form. We must rethink service models, shape the demand for healthcare and look to reduce the administrative burden on healthcare workers through digital workflow.

The system is unsustainable

Australia will be unable to afford the health system in its current form as our growing and ageing population continues to drive demand to unsustainable levels. Based on Deloitte modelling of public and private hospital bed requirements from 2016 to 2036, Australia must build a 375 acute hospital bed every month for the next 15 years to keep pace with demand and replace ageing stock.

Australia’s health system is heavily geared towards an acute, reactive system of treating illness. The capital requirements are substantial and even if the cost of infrastructure could be afforded, the operating costs and workforce requirements are unsustainable.

The system does not serve all Australians equally

Australia’s health system does not serve everyone equally. Patient outcomes and illness severity differ significantly across demographics such as cultural and ethnic background, geography and socio-economic status. For example, Indigenous Australians, residents of rural and remote communities and people of low socio-economic status have a shorter life expectancy, higher burden of disease and higher rates of potentially preventable hospitalisations than the average Australian14,15,16,17,18.

While services are designed to offer consistent access and delivery for everyone, the system’s design doesn’t acknowledge the various financial, regional and cultural barriers that hinder equitable access to care. This inconsistency is illustrated by the significant disparities in health outcomes and overall health of different groups of the population14,15,16,17,18.

Reducing costs and providing better value care

To meet projected demand and replace ageing hospital bed stock, Australia needs to build 375 hospital beds per month for 15 years.

Projected hospital bed requirement for Australia

<table>
<thead>
<tr>
<th>Year</th>
<th>Existing beds</th>
<th>Bed replacement</th>
<th>New beds (growth)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>95,990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2026</td>
<td>17,198</td>
<td></td>
<td></td>
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<tr>
<td>2036</td>
<td>148,317</td>
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</table>
Australia’s health reimagined

Value-based care and incentives
New value-based funding models will be created to incentivise integrated care and achieve cost-effective healthcare outcomes. Further, regulatory approaches will encompass data sharing and security to build trust and encourage people to share information that enables more personalised and accessible care.

As highlighted in our consumer survey, the future of health and Australians’ willingness and ability to adopt digital health has been accelerated by the COVID-19 pandemic. The healthcare system needs to capitalise on this momentum and the significant investments that have already been made. But these ambitions will not be realised if healthcare providers and workers are unable to adopt and engage with integrated virtual solutions.

Leaders must invest in change management initiatives that cater for cultural nuances and prepare consumers and workers for a virtually enabled health system by supporting and incentivising desired behaviours. Involving consumers in the design of new services and technologies will prevent deepening the digital divide and ensure the future of health is fit for purpose.

Government and regulators have a crucial role to play in setting virtual care standards alongside data security and sharing agreements that are trusted and understood by consumers and providers. They also play a role in procuring technological infrastructure and ensuring value-based funding streams incentivise integrated virtual care models. These factors, and the roadmap to achieving this future state of health, are imperative to achieving these ambitions.

Design principles of a people-centred health system
Achieving this vision of a reimagined health system hinges on understanding the roles we play as individuals and as a collective. This understanding informs the key design principles that will guide the health system’s transition to a digitally integrated ecosystem:

- **Digitise with purpose**: Set a clear vision and objectives of what the health system must deliver across the quadruple aim dimensions of population, consumer, sustainability and workforce. The objectives must be specific, measurable and meaningful. The health system’s transformation and the role of digital must be oriented to deliver the vision and objectives.

- **Meet individual needs**: Health is personal: everyone has individual needs and preferences. A successful transformation journey starts with a holistic understanding of the consumer, from their preferences to their health status, lifestyle and history. This means moving away from a one-size-fits-all approach, tailoring healthcare to every individual and catching up to industries that have adopted this personalised approach. Ensure there are the right incentives at all levels to support the delivery of system outcomes and meet individual needs.

- **Invest in equitable connectivity**: All Australians should have equitable access to digital connectivity regardless of where they live and how much money they earn.

- **Empower and engage consumers**: Allow and support people to take greater control of their health journey, including how they interact with a broad range of health influences and navigate access to services. Consumer experience, satisfaction and input should be key considerations in designing the system, models of health workflows and solutions across the ecosystem.

- **Not digital only, enhance not replace**: Developing singular digital channels will create a digital divide for some consumers. The design needs to balance human and digital channels, giving people the option for digital where relevant. Whenever technology is involved, the experience should provide a ‘human touch’ that’s engaging, responsive and approachable. Digital healthcare should enhance the therapeutic relationship and encourage individuals to participate in their health – not replace face-to-face care.

- **Uplift digital maturity**: Consumers and their loved ones should feel in control and empowered to have a connected healthcare experience. A person’s background and education is an important factor in their willingness to engage in digital health.

- **Transparent, agile and accountable**: Establish strong governance to ensure all aspects of system performance and accountabilities are met transparently, protect health information and ensure accountability and performance are aligned with system goals. Whenever data sharing is involved, consent should always be requested from consumers or relevant stakeholders to address privacy and security concerns.

- **Workforce experience**: Understand the needs of the health workforce and support input with consumers to design new healthcare models with an enhanced workforce experience. To enable connected, empowered and confident consumers, we need connected, empowered and confident health professionals who are able to use technology to support shared decision making.
Three horizons to a reimagined health system

In the next decade, there will be a shift from the Connected Consumer (Horizon 1), who has improved access to health, to the Confident Consumer (Horizon 3), who is focused on wellbeing, prevention and receiving personalised healthcare. This transition occurs over three horizons as summarised in the following diagram.

The presented horizon approach illustrates how the healthcare system operates within a broader health, social and economic ecosystem that affects the health of individuals. The interconnected nature of the broader ecosystem needs to be first acknowledged and then explicitly connected to the individual.

The diagram describes a number of important transitions that will reorientate the health system to focus on the needs of individuals across the following domains:

- **Consumers** – the degree of connectedness between the consumer and four focus areas for health: social determinants, risk factors, population health and the healthcare system. It presents the perspective of the health system and the degree of personalisation, accessibility and digital inclusion.

- **System** – the orientation of the health system across the wellbeing-to-illness continuum, level of integration and model of funding and incentives.

- **Enablers** – the nature of workflow, data interoperability and workforce considerations.

- **Fiscal** – the level of value the health system delivers for the investment.

- **Population Health** – the changes in health literacy, rates of risky behaviour and connectedness of the broader health ecosystem.

Digital evolution is complicated and unlikely to be linear. Some aspects of digital transformation will happen quickly, while others will take more time. We envisage some overlap between the horizons with activities and advances occurring in parallel over the next ten years.
Importantly, Horizon 1 also aims to lay the groundwork for quick wins that can be executed in the next one to two years: supporting people with better access to health and improving system efficiency and quality. Acknowledging that connectivity is variable, Importantly, Horizon 1 also aims to lay the foundations for improved connections between consumers, providers and the broader ecosystem to influence lifestyle and risk factors, social determinants and population health.

This horizon will deliver improved system efficiency, connectivity and quality of existing service provision models, achieved primarily by technology-driven upgrades to existing work practices. Horizon 1 includes familiar, traditional technologies:

• Telehealth – delivering services where consumers and providers are separated by distance, such as by phone, text, email or video
• Digital information systems – technologies that support sharing and transmission of personal health and other information, such as eHealth records, eDischarge, ePrescribing and electronic health records (EHR)

In Horizon 1, these technologies are controlled by and focused largely on providers, acting as digital substitues for existing work practices to assist in providing contemporary care. Given providers remain the primary focus in Horizon 1, it’s a one-size-fits-all care model. The variation in digital inclusion means caution is needed to ensure virtual and technology-based care does not create a digital divide owing to barriers in accessibility and digital ability. Additionally, since the health system is focused on treating illness as opposed to wellbeing, there’s still a substantial administrative burden on the workforce as consumers struggle to navigate between various care providers.

Horizon 2 – Empowered consumer

We see focus shifting towards the consumer as we move toward Horizon 2, where people are empowered with greater control over how they access care, manage their health data and access information. The Reimagining Healthcare Consumer Survey found 72% of Australians are already aware of digital technologies that support health monitoring and 56% would be willing to use mobile apps, personal medical devices, fitness monitors and other technologies to monitor health issues (e.g., by tracking indicators like blood sugar, blood pressure, breathing, function or mood). Integration of population level health data will strengthen clinical decision making by enabling earlier and more accurate risk predictions and more individualised management of ongoing health conditions like diabetes.

As well as empowering people to better manage their own health, improved disease prevention and management will also continue to be enabled by remote monitoring – which in turn will be enhanced by 5G network infrastructure. Data collected through remote monitoring can inform prevention and interventions across the continuum of care. Aggregated data can be used not only at a population level but also to predict and manage risk for individuals. Further, this will facilitate new work practices and improve early intervention for better health outcomes. Data interoperability remains a challenge with current technologies through Horizon 1, and these challenges will need to be addressed in Horizon 2 to enable augmented models of care. Digital diagnostics and therapeutic technologies, as well as care navigation technologies, rely on the ability of health providers to share information with consumers and other providers.

Better interoperability and connectivity, as well as more empowered consumers, will allow the health system to consider a more targeted approach to health and wellbeing, not just illness treatment. Improving service integration across government, through parallel integration of human services and better digital linkages with the health sector, will improve access to housing, employment and education - all key determinants of future health status. Simplifying service navigation with digital technologies and improving digital access across age groups, socio-economic groups and geographies will benefit people who need complex social support alongside healthcare, thus enhancing digital inclusion and reducing the workforce’s administrative burden.

Horizon 2 describes augmented or expanded models of care that lead to new work practices and approaches. These models rely on technologies that can remotely collect and analyse consumer data:

• Digital diagnostics and therapeutic technologies used to identify, prevent, manage or treat a condition, or improve adherence to interventions. This includes remote monitoring and the use of health data to inform prevention and interventions across the continuum of care, from self-care to acute healthcare

• Care navigation technologies that give consumers access to health information, booking systems, triage systems and assessment and selection of providers. Horizon 2 technologies give people more control over their healthcare data and better access to information. But the focus remains on healthcare service delivery, rather than a broader goal of optimising health and wellbeing.

Horizon 3 – Confident consumer

Horizon 3 depicts a future where the maturing of technologies such as AI, robotics and cloud-based services creates possibilities for new virtual health models and a consumer who is far more connected to influencers outside the healthcare system. The rapid evolution of digital technologies means this future cannot be fully described. However, this horizon is likely to be characterised by virtual health models supported by non-traditional or cross-sector interoperable technological developments. These will enable the analysis of a comprehensive range of health and other data to expand knowledge and provide services across the care continuum, with a particular focus on addressing the social determinants of health.

Horizon 3 will allow confident consumers to access preventive, personalised care and services or in near their home. The focus will shift to people choosing who can access and analyse their data to provide information and services promoting health and wellbeing. Horizon 3 is people-centric with great emphasis on consumer needs, preferences and choices, reflecting a policy shift away from provider-controlled care. This phase focuses on the complete disruption of the health ecosystem in the next ten years through value-based healthcare, digital navigation, augmented and virtual reality, personalised medicine and precision robotics. Consumers are activated through a complete shift toward home service delivery and preventative health and wellbeing.

Australians will be even more empowered to actively control and manage their wellbeing, as well as a significantly reduced administrative burden for our health workforce. Self-care will involve a range of prevention activities with a combination of technologies facilitating remote monitoring and communication, thus strengthening the partnership between consumers and their healthcare providers. In fact, the Reimagining Healthcare Consumer Survey revealed consumers are already accepting and demanding this at an increasing rate.

69% of people surveyed experienced telehealth in the past 12 months.

69% were willing to share and link their health information with providers involved in care for conditions requiring ongoing monitoring for risk of deterioration.

63% were interested in being able to access their own health records, share their health information, send messages to their healthcare team and, if appropriate, edit their care plans using a personal device.

64% agreed (or strongly agreed) that if they gave healthcare providers shared access to their health information, it would make them feel more able to manage their own health.

Personalised care and digital integration can be achieved by maturing and developing technologies such as AI, Internet of Things (IoT) platforms, robotics, 5G and cloud-based services, allowing people to receive care in or near their home with fewer visits to hospitals for routine and emergency care. This will also encourage the promotion of independent self-care in older people and people with disabilities, thus improving digital inclusion and achieving true equity in the health ecosystem.

Currently, accessing the right care can be complex. A fragmented system with many health providers makes it difficult for people to know where they should access certain services. With better technology and digital inclusion in Horizon 3, care navigation can be simplified to help people access the right care, in the right place and at the right time.

For further integration between providers across the care continuum, and between providers and consumers, care coordination and navigation tasks can be automated and digitised. This will lead to simple improvements to the consumer experience; for example, people with multiple medical issues could schedule all their outpatient appointments on the same day, while digital queues could slash wait times for pathology collections.

Reaching Horizon 3 will only be possible if the existing digital health technologies in Horizon 1 are improved and made more efficient, effectively forming the building blocks for new and augmented models of care in Horizons 2 and 3.
Seizing the opportunity

Why has the health system resisted change?
With so many exciting possibilities within grasp, why hasn’t the health sector experienced the same disruption as banking and investment, tourism or transportation sectors?
We believe there are four major factors impeding transformation in healthcare: 1. Clinical governance and accountability frameworks are biased towards inaction, and the sector’s broader culture remains conservative 2. Reform to enable the system of tomorrow requires investment today 3. To make lasting changes at the policy or service level, it’s important to invest in implementation science 4. Health leaders are accountable for business-as-usual service delivery, not widespread innovation and change.

Clinical governance and accountability frameworks are biased towards inaction
In Australia, current systems of clinical governance and medicolegal responsibility mean an individual clinician is ultimately responsible for the treatment of a single consumer. This means clinicians bear substantial reputational, legal and financial risks when changing the care they provide, even when the new model of care has improved considerably (56% of households had internet access in 2004-05 compared to 86% in 2016-17). Connectivity remains a challenge. This is especially true for people of old age, low educational attainment, low income or regional or remote residency. Continued public and private investment will be required to create the networks that support equitable access to digital healthcare across Australia.

To transform the health system and deliver the care consumers expect, we need to invest in the capability to build momentum through success. Effective, well-resourced implementation is required to ensure lasting change. Consumers and health workers need to be involved in the design, implementation and evaluation of new services to ensure they are fit for purpose, improve patient safety and prevent deepening the digital divide. Consumer advisers should be part of change teams and the system needs to actively equip and mentor them to serve in this role. Quality improvement and human factors implementation science should be adopted to ensure new technologies and services are co-designed with the end user in mind and consider human behaviour and limitations.

Implementation of change at scale is hindered by short-term funding for programs (rather than long-term funding commitments), procurement processes, limited application of implementation science and poorly planned and managed implementation programs. To transform the health system and deliver the care consumers expect, we need to invest in the capability to get the change right before continuing to build momentum through success.

Keeping our leaders accountable for delivering change
Leaders in the health system need to be accountable for transformation. Currently, hospital chief executives and primary healthcare providers view innovation – particularly technological innovation and adoption of virtual care – as outside their core business. For the hospital sector, performance metrics relate to service delivery, quality and safety measures and financial performance. In the primary care and community sector, the landscape is dominated by small and medium enterprises with limited resources for implementing widespread change. Creating performance indicators with funding incentives would help shift this view.
How can we seize the opportunity to create lasting change?
Across each of the horizons, key actions are needed in the following areas to plan and deliver a reimagined health system that leverages data and digital as enablers:

**Digitise with purpose**

**Vision**
Develop a clear vision and purposeful set of objectives for the health system based on the quadruple aim, including addressing health inequity.

**One purpose**
Integrate primary, secondary and tertiary healthcare and governments with a common purpose: providing people-centred, digitally enabled care.

**Not digital only, enhance not replace**

**Infrastructure**
Establish minimum standards for integrated digital and physical health infrastructure.

**Data control**
Give people the control to provide, share and use their health data.

**Elevate data**
Build governance frameworks to support consumer data sharing and privacy across the ecosystem.

**Interoperability**
Require health data to be available for consumers to engage with and share with whom they choose.

**Transparent, agile and accountable**

**Accountability**
Build clear accountability frameworks aligned with delivery of the quadruple aim.

**Leadership and change**
Invest in developing the current and future leaders of the health system and invest in change and implementation science to support the system transition to horizon 3.

**Empower and engage consumers**

**Go together**
To maintain healthcare’s social license, health practitioners and the community need to participate in the journey together.

**Health literacy**
Develop tools to support greater health literacy and engagement in one’s own health.

**Invest in equitable technology**

**Connectivity**
Improve digital connectivity (internet, device and data) for consumers and providers where they live, work and play.

**Strategic investment**
Government and other funders need to rethink investment in digital health and make more coordinated, strategic decisions to move the system toward Horizon 2.

**Workforce experience**

**Digital workflow**
Invest in clinical and non-clinical workflow platforms to improve efficiency and reduce the administrative burden.

**Workforce**
Define role-based workforce models, empower clinicians to operate at the top of their scope of practice and ensure adequate digital training for new and existing health workers.

**Meet individual needs**

**Service models**
Develop service models based on end-to-end health pathways for earlier and more precise intervention.

**Incentives**
Establish the right funding models and incentives to enable health improvement and drive greater value across the public and private sectors.

**Ecosystem**
Encourage better connections in the ecosystem of stakeholders and providers to deliver better health outcomes.

**Uplift digital maturity**

**Digital skills and maturity**
Develop programs to improve the digital skills of consumers, clinicians and health professionals.

**Digital support**
Provide at-hand digital health navigation support.

**Education**
Education providers integrate digital health into their programmes and offer microcredentials to support upskilling the health workforce.

**Establish minimum standards for integrated digital and physical health infrastructure.**

**Infrastructure**
Provide at-hand digital health navigation support.

**Digital support**
Provide at-hand digital health navigation support.

**Workforce**
Defined role-based workforce models, empower clinicians to operate at the top of their scope of practice and ensure adequate digital training for new and existing health workers.


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