Future Health Index **2019**

Australia

Country report

The Future Health Index is commissioned by Philips

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Australia and New Zealand

Foreword

Welcome to Philips Future Health Index 2019

We are all faced with the opportunities and challenges presented by new technologies every day. Perhaps nowhere is this impact more important, or have the potential to help more people, than in healthcare.

Philips continues to invest significant resources towards innovating meaningful healthcare. 2019 marks the fourth instalment of our **Future Health Index**, which focuses on the role digital health technology plays in improving both the individual's and the healthcare professional's experience – two elements of the 'Quadruple Aim' in healthcare.

This year's report is entitled 'Transforming healthcare experiences: Exploring the impact of digital health technology on healthcare professionals and patients'. And while undoubtedly huge strides have been made here in Australia, we also still have a lot to do.

Some healthcare professionals in Australia are adapting to new ways of working and beginning to recognise the benefits of digital healthcare for both themselves and their patients.

However, Australia lags in some critical areas, such as adoption of artificial intelligence (AI), which is currently limited in its adoption beyond administrative applications. Additionally, significant barriers still remain in terms of attitudes towards digital security and privacy.

The Future Health Index 2019 also revealed that telehealth remains an often untapped tool for healthcare professionals and, as a result, a significant proportion of Australians do not feel their access to medical care is sufficient. This is something that, together, we must address.

Technology continues to evolve, and this will, in turn, be a driver of continuous transformation in healthcare systems around the world, and in Australia. Accelerating the shift from volume-based to value-based care is key to driving a future of sustainable healthcare systems.

We look forward to playing our role in this ongoing, critically important transformation.

Future Health Index 2019: **An introduction**

The Future Health Index is a platform that helps to determine the readiness of countries to address **global health challenges** and **build sustainable, fit for purpose, national health** systems.

Healthcare systems vary from country to country, but they share a **common goal**:

Providing quality care with **improved experiences** for both patients and healthcare professionals

The challenge, of course, is to provide that care in ways that are as efficient and economical as they are effective.

Central to ensuring improved healthcare experiences will be the deployment of digital technologies to support cost-effective, value-based, data-driven care. And yet, despite increasing adoption rates in some instances, use of these digital tools remains all too intermittent around the world. The impediments include inadequate access to technology, difficulty with integrating technology into healthcare professionals' ways of working, and concerns about data privacy and security. These barriers are falling, though not as quickly as many of us would like.

Philips' fourth annual Future Health Index is based on a survey of over **15,000 individuals*** that represent the adult general population and **over 3,100 healthcare professionals** across **15 countries.** It explores digital health technology's impact on the patient and healthcare professional experience – two elements of the quadruple aim.

By exploring experiences and attitudes, the Future Health Index suggests paths toward even broader acceptance and adoption of data-driven healthcare, while offering insights into factors that may be impeding more widespread use of new ways of working.

After analysing the data, **three clear themes** have emerged:

Engaged and digitally enhanced healthcare professionals
The increasing number of healthcare professionals who use technologies like digital health records (DHRs) and telehealth see better results and higher job satisfaction.

Empowered patients – access to data, more control
Individuals with access to their own health data are far more likely to engage with that information in ways that improve the quality of care and their overall experience.

Learning from forerunners
The experiences of digital health technology forerunners like China, Saudi Arabia, India and Russia provide lessons that all countries can apply.

Conclusions: how can health systems best prepare themselves for continuous transformation?
Incorporating new technologies into healthcare is a journey, not a one-time event, enabling healthcare professionals and patients to adapt as needs evolve and new challenges arise.

*Individuals: the general population of the 15 countries studied. They represent the population which healthcare systems ultimately serve, including current patients, previous patients, those with chronic conditions and those with limited prior interactions with the healthcare system.

Engaged and **digitally enhanced** healthcare professionals

Some healthcare professionals in Australia are adapting to **new ways of working** and beginning to recognise the **benefits of digital healthcare** for both themselves and their patients. However, more must be done to reach the point where healthcare professionals are able to harness the full potential and support of digital technology in all aspects of their work, and can act as true advocates of these methods to both their patients and their peers.

Removing the remaining barriers to digital health technology use could help enhance the work lives of more healthcare professionals.

The **state of play**

More healthcare professionals are using digital health technology in Australia

In 2019, we see that Australian healthcare professionals not only have access to health technologies, but are actively using them in their day-to-day work.

In fact, for most of the key technologies we examined, Australia significantly outperforms the 15-country average. The exception to this is Artificial Intelligence (AI), where Australian healthcare professionals are lagging significantly behind the 15-country average.

In 2019, we see that some healthcare professionals have not only adopted but are also **using this technology.**

84% of healthcare professionals share patient information electronically with other professionals **inside their health facility**

80% 15-country average

Base: Total healthcare professionals

50% share patient information electronically with healthcare professionals **outside their health facility**

32% 15-country average

Base: Total healthcare professionals

81% of healthcare professionals are **using digital health records** (DHRs) in their hospital/ practice

76% 15-country average

Base: Total healthcare professionals

24% use **AI technologies** within their healthcare practice

46% 15-country average

Base: Total healthcare professionals

2019

Improved experiences through **digital technology support**

When Australian healthcare professionals are supported by **digital technology,** their experience improves

Despite the various challenges faced with the implementation of digital health records (DHRs) in Australia, and a common assumption that healthcare professionals feel these records can simply add administrative tasks to their workload, the Future Health Index research indicates that Australian healthcare professionals recognise how DHRs deliver on three of the four pillars of the Quadruple Aim.

A majority of Australian healthcare professionals who use DHRs in their practice report that DHRs have **a positive impact on quality of care, healthcare professional satisfaction and patient experience**

Base: Total healthcare professionals who currently use DHRs in their practice (n=166)

Quadruple Aim:

Improved patient experience
Improving the patient experience of care (including quality and satisfaction)

Better health outcomes
Improving the health of individuals and populations

Improved staff experience
Improving the work life of health professionals

Lower cost of care
Reducing the per capita cost of healthcare

Telehealth: an untapped tool for healthcare professionals

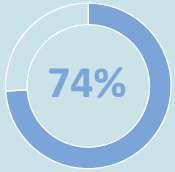
Broader healthcare professional use of telehealth is needed to **unlock its benefits**

About a third of Australians believe the healthcare system in their country does not provide them access to medical care and availability of doctors, and many have experienced not visiting healthcare professionals even when they had a medical reason to go.

of Australians say healthcare in Australia provides them with access to medical care when needed

61% 15 country average

Base: Total individuals



of Australians say they are provided with availability to doctors when they need care

55% 15 country average

Base: Total individuals

*Telehealth: either healthcare professional-to-patient or between healthcare professionals

^Open: those who prefer remote consultations via digital channels or have no preference

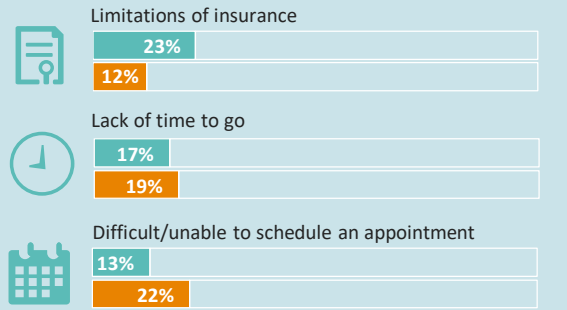
Telehealth* can help address some of the reasons individuals give for why they have been discouraged from visiting healthcare professionals when they need to. This demonstrates the potential for telehealth to positively impact the patient experience by making accessing healthcare professionals more convenient.

Telehealth can be leveraged to address two of the **top-cited issues** that discourage Australians from visiting healthcare professionals:

56% of Australians are discouraged to visit a healthcare professional when they have a medical reason to go

71% 15-country average

Base: Total individuals



While Australian healthcare professionals are more likely to say that their patients' experience has been positively impacted by telehealth in recent years, individuals in Australia are less open to using this technology to bridge gaps in healthcare access, even for non-urgent care.

Nearly half of Australian healthcare professionals have seen telehealth positively impacting patients' experience in the last 5 years

48%

Healthcare professional-to-patient

33% 15 country average

Base: Total healthcare professionals

34%

Healthcare professional-to-healthcare professional

31% 15 country average

Base: Total healthcare professionals

36% of Australians are open to remote consultations^ for non-urgent care.

45% 15 country average

Base: Total individuals

Healthcare professionals are not yet fully comfortable **using AI**

There are opportunities for the full benefits of **AI technology** to be realised

Healthcare professionals in Australia are most comfortable* using AI for more operational tasks such as staffing and patient scheduling.

To help provide the highest quality care to patients, healthcare professionals' use of AI must move beyond these functional tasks into spaces where there is room for growth and a more profound impact on both the healthcare professional and patient experience, including diagnosis and treatment.

Healthcare professionals in Australia are most comfortable leveraging AI for staffing and patient scheduling:

57%
Staffing and patient scheduling
64% 15-country average
Base: Total healthcare professionals

However, they need to increase the usage of AI in other areas in order to improve healthcare outcomes for Australians:

33%
Actioning treatment plans
45% 15-country average
Base: Total healthcare professionals

31%
Recommending treatment plans
47% 15-country average
Base: Total healthcare professionals

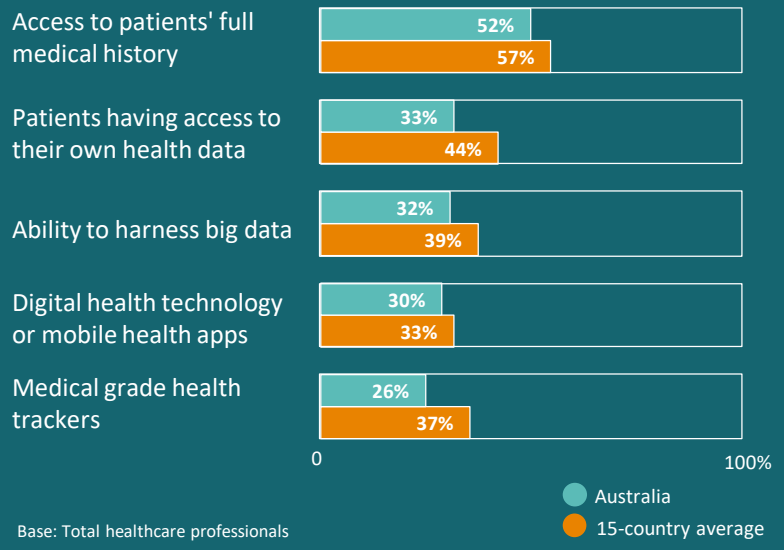
27%
Diagnosis
47% 15-country average
Base: Total healthcare professionals

*Comfortable: extremely/somewhat comfortable

Digital health technologies **benefit healthcare professionals and individuals'** experiences

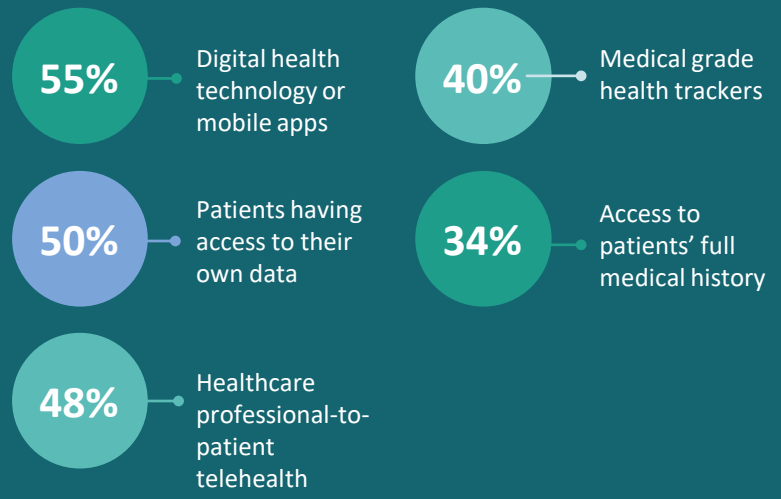
Healthcare professionals in Australia say digital health technology and the use of health data positively impact both their experience as well as the experience of their patients. Australian individuals however lag behind the 15-country average in some instances when it comes to the usage of digital health technology or mobile apps.

Australian healthcare professionals report that **their own experience** has been positively impacted over the past 5 years from data-related updates, such as:



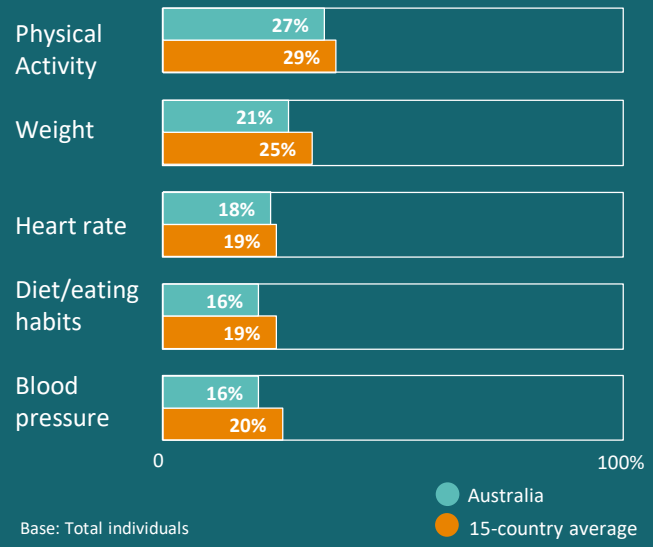
Base: Total healthcare professionals

Healthcare professionals also acknowledge the importance of patient data as **positively impacting patients' experience**



Base: Total healthcare professionals

Yet, **less than a third of individuals** are often or always using digital health technology or mobile apps to track key health indicators

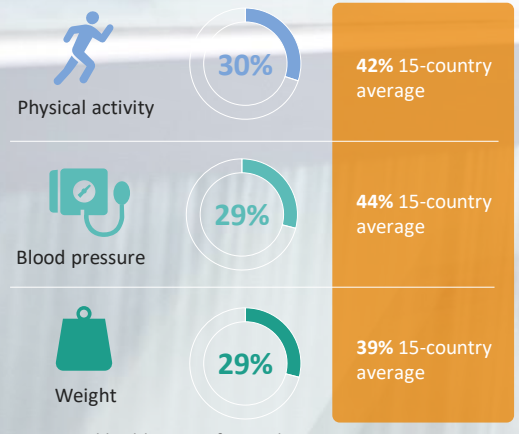


Base: Total individuals

Reciprocal data sharing is **not yet the norm** in Australia

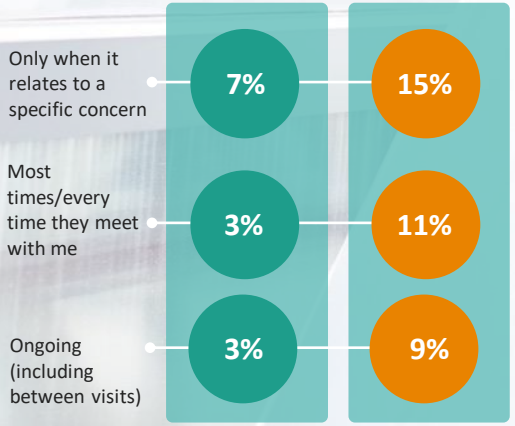
Our research shows that almost a third of Australian healthcare professionals are recommending patients use digital health technology to track their data, but that data is **rarely shared back digitally** to the healthcare professionals.

Almost a third of healthcare professionals often/always advise their patients to track key indicators of health such as...



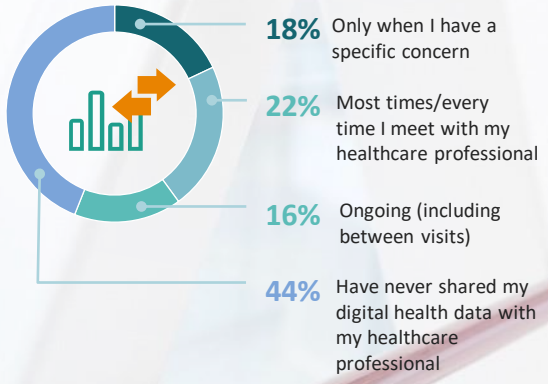
Base: Total healthcare professionals

Yet, **less than one tenth** of healthcare professionals say most or all of their patients share health data from digital health technology or mobile health apps with them



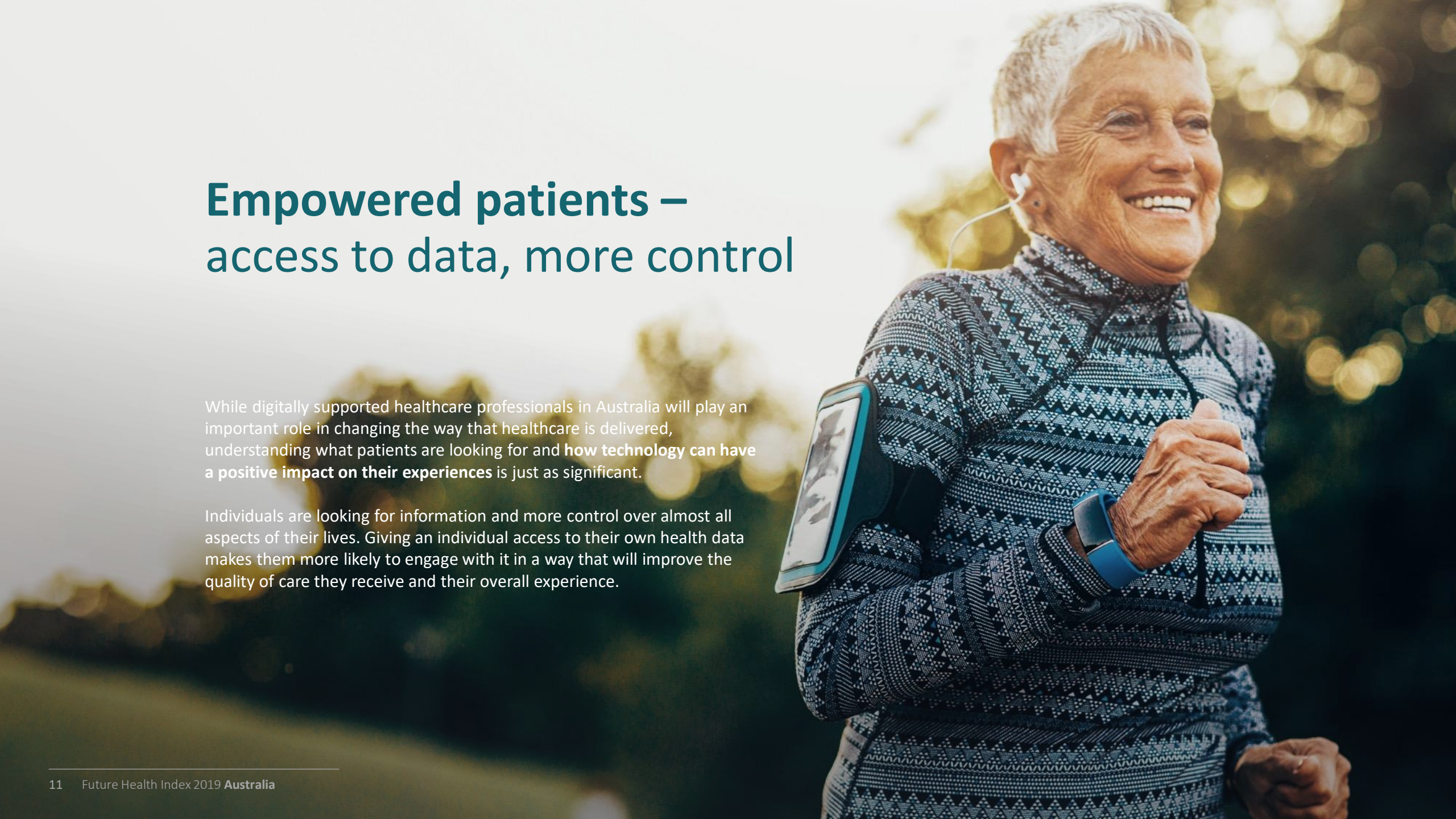
Base: Total healthcare professionals

Additionally, **nearly half** of the individuals who use digital health technology or mobile apps to track indicators have never shared data with their healthcare professionals



Base: Total individuals who use digital health technology (n=624)

Empowered patients – access to data, more control



While digitally supported healthcare professionals in Australia will play an important role in changing the way that healthcare is delivered, understanding what patients are looking for and **how technology can have a positive impact on their experiences** is just as significant.

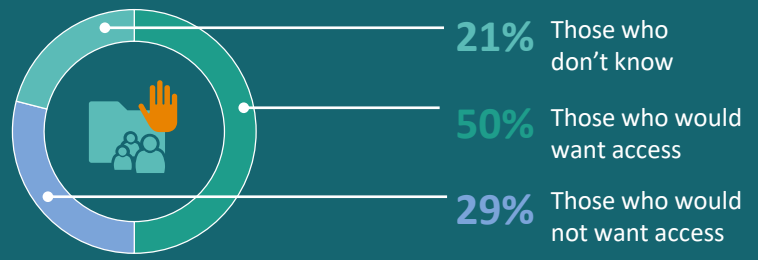
Individuals are looking for information and more control over almost all aspects of their lives. Giving an individual access to their own health data makes them more likely to engage with it in a way that will improve the quality of care they receive and their overall experience.

The demand for **data ownership**

Australian patients want **ownership** of their health data

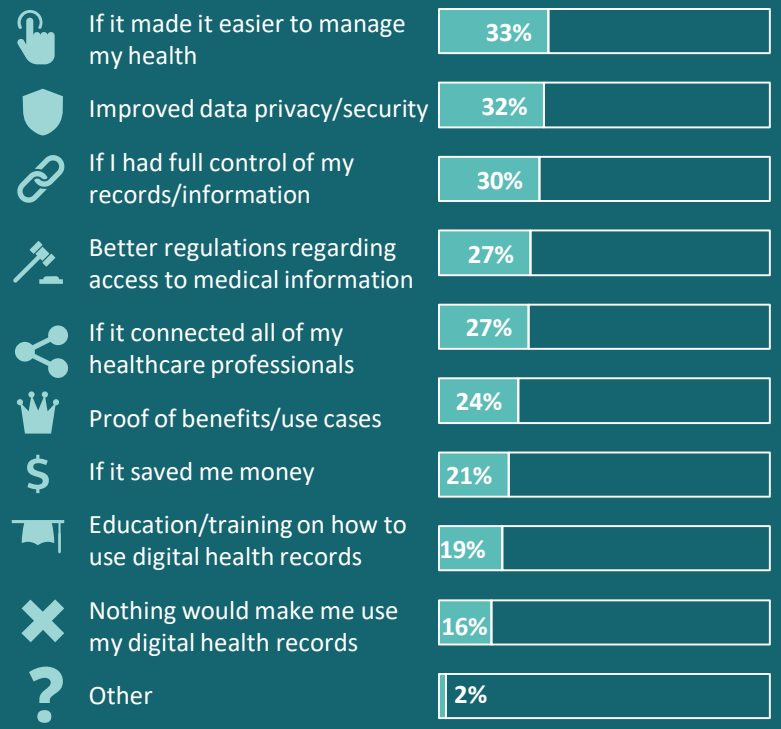
In Australia, while some individuals are hesitant, many want to be empowered and have access to their digital health records. Australians with access to their digital health record could also be incentivised to increase usage by a range of things, such as ease of use and improved privacy and security.

Half (50%) of Australians who do not currently have access to their digital health record or don't know if they have access **say they want it:**



Base: Total individuals who don't have / don't know if they have access to their DHRs (n= 725)

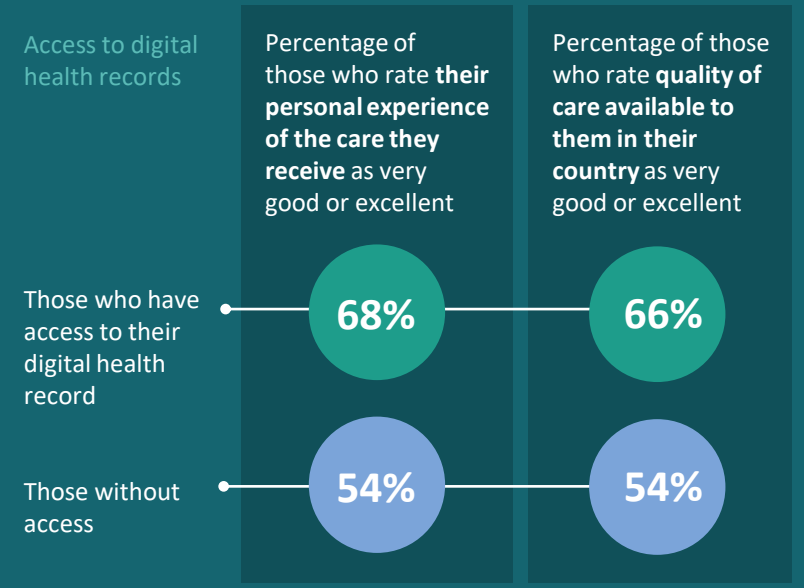
Of people who have access to their digital health record, **33% would be more likely to use it** if they were clear about how it could make managing their health easier:



Base: Total individuals who have access to their DHRs (n= 278)

Those with access to their digital health records report better personal experiences in healthcare and better quality of care available to them than those who do not have access or aren't sure.

For patients to truly leverage the benefits of digital health records, many need clarity about how they can make health management easier is key here.



Base: Total individuals who have access to their DHRs (n= 278)
Base: Total individuals who do not have access to their DHRs (n= 458)

Empowered patients are more proactive patients

The Future Health Index 2019 indicates that empowering patients through technology by enabling them to better manage their own health ultimately improves the experience for both patients and healthcare professionals. Pulling back the curtain and giving Australian patients access to their healthcare data is the place to start, as people are more likely to be proactive when it comes to their health if they have access to their Digital Health Records (DHRs).

Of Australians that have access to their DHR, **over half rate themselves as proactive** when it comes to their health. Those who don't have access to are less likely to rate themselves as such

Have access to their DHR

59% Proactive

10% Reactive

Base: Total individuals who have access to DHRs (n= 278)

Don't have access to their DHR

46% **Proactive**

18% **Reactive**

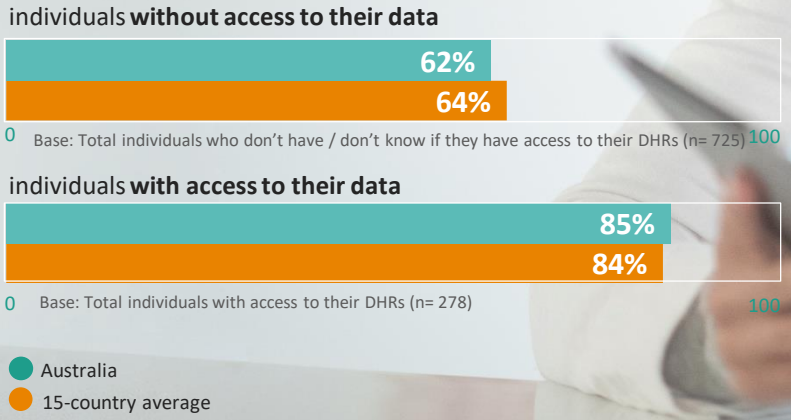
Base: Total individuals who don't have access to DHRs (n= 458)

With access comes openness to **data sharing**

Patients are more collaborative with healthcare professionals when they have **ownership of their health data**

The research shows that individuals in Australia are more open to granting **healthcare professionals access to their data** when they have access to that data themselves. Healthcare professionals agree that patients having access to their health data improves their patients' experience.

Individuals who want their healthcare professionals involved in their care to have access to their data



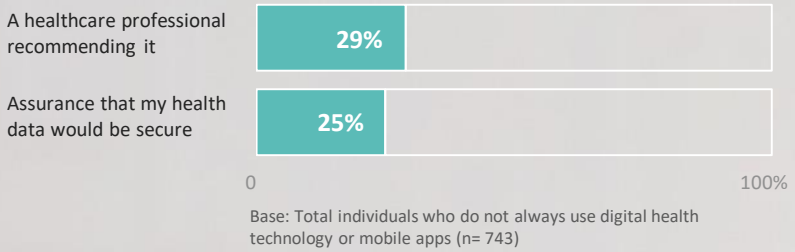
Encouragement from healthcare professionals drives use, but **privacy concerns remain a barrier**

Healthcare professionals can have a role to play in increasing the adoption and use of digital health technology among Australians, as they would be more likely to track health indicators upon a recommendation from their healthcare professional.

However, concerns around the security of healthcare data are barriers to the adoption of new healthcare technologies.

About a quarter of those who do not use digital health technology or mobile health apps say they would start using them **if a healthcare professional recommended it or if they were assured that their health data would be secure**

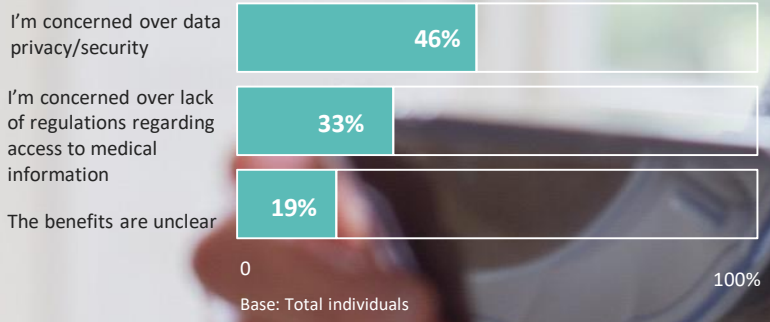
What would encourage you to start using digital health technology or mobile health apps



Base: Total individuals who do not always use digital health technology or mobile apps (n= 743)

Additionally, when it comes to the use of digital health records, patients in Australia have **concerns over the privacy and security of their healthcare data**

How would you describe your attitude to digital health records



Base: Total individuals

Security concerns also discourage healthcare professionals from sharing patient data widely

Healthcare professionals in Australia are ahead of the curve when it comes to sharing patient data electronically. However, concerns around data privacy and security, combined with interoperability issues, are discouraging Australian healthcare professionals from sharing health data universally – particularly when sharing outside their health facilities.

Only half of Australian healthcare professionals share patient information electronically with other healthcare professionals **outside their health facility**

84%
Share electronically inside their health facility
80% 15-country average
Base: Total healthcare professionals

50%
Shared electronically outside their health facility
32% 15-country average
Base: Total healthcare professionals

Healthcare professionals in Australia are not sharing data electronically outside their health facilities due to **concerns around data security and lack of interoperability.**

- **63%** Concerns related to data security
- **63%** Lack of interoperability of records systems
- **58%** Concerns related to data privacy
- **58%** Lack of access to data sharing system(s)

Base: Total healthcare professionals who do not share data electronically outside their health facility

Learning from **forerunners**

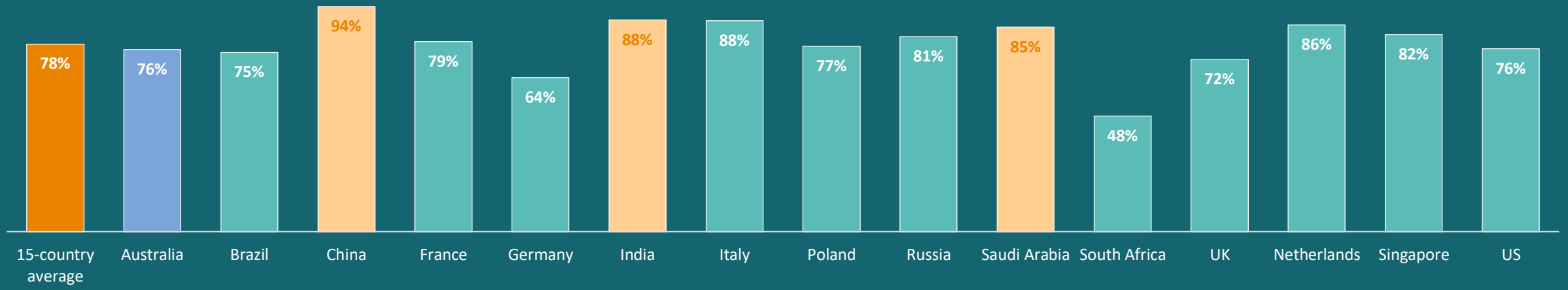
In earlier years of the Future Health Index, we saw that some emerging countries had the potential to **leapfrog others in their adoption of digital health technology**. In 2019, we see that some countries (mainly China, India and Saudi Arabia) have already leapfrogged and that these technologies are increasingly part of the everyday healthcare experience for both healthcare professionals and patients.

Although specific challenges and circumstances differ from country to country, the experiences of digital health technology forerunners provide lessons that Australia can learn from and apply to its own healthcare systems.

Some countries are making the most of digital health technology, moving steadily from **gaining access** to the technology, to **using it**

China and **Saudi Arabia** are consistent forerunners when it comes to adoption and use of all new technologies. Some other emerging countries, **including India**, are also excelling in specific areas.

Percentage of healthcare professionals who currently use any **digital health technology** or **mobile health apps**:



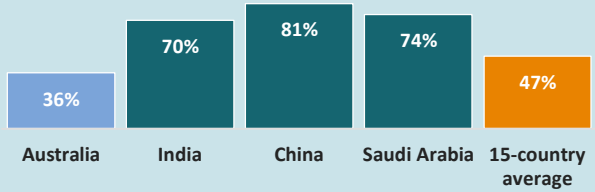
Base: Total healthcare professionals

Exposure to digital health technology increases how **proactive people are in managing their health**

Some emerging countries are particularly likely to have individuals that track healthcare indicators, and use that data as a prompt to take action regarding their health and contact their healthcare professionals.

Increasing the adoption of digital health technology in Australia could be beneficial for empowering patients and driving a proactive attitude to health management, ultimately improving healthcare outcomes.

Individuals in **India, China,** and **Saudi Arabia** frequently report that the information they receive from digital health technology or mobile apps led them to contact a healthcare professional.



Base: Total individuals who use digital health technology or mobile app (n=624)

Among those who have seen a healthcare professional in the last 12 months, Australians are surpassed by individuals in **China, Saudi Arabia** and **India**, who more frequently say they take action relating to their health by tracking their health indicators.

47% of Australians who have seen a healthcare professional in the past year **take action** relating to their health by **tracking their health indicators.**

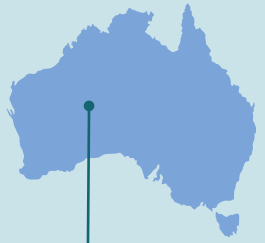
46% 15-country average

Base: Total individuals who have seen a healthcare professional in the past year (n=9,334)

In **India** specifically, revenue for wearables is expected to show annual growth of **5.8%**. User penetration is expected to hit **4.6%** by 2023, which is steady growth from the current level of **4.5%.**

China generates the most revenue for wearables across the 15 countries included in the 2019 Future Health Index at **$4,553 million** in 2019, and is expected to see annual growth rate of **3.6%.**

In Saudi Arabia, revenue for wearables is **$49 million** in 2019 and is expected to show annual growth of **4.6%.** User penetration is currently at **3.9%.**



$173 million
Revenue in the wearables segment in 2019

Annual growth rate
2.9%

User penetration
8.2%

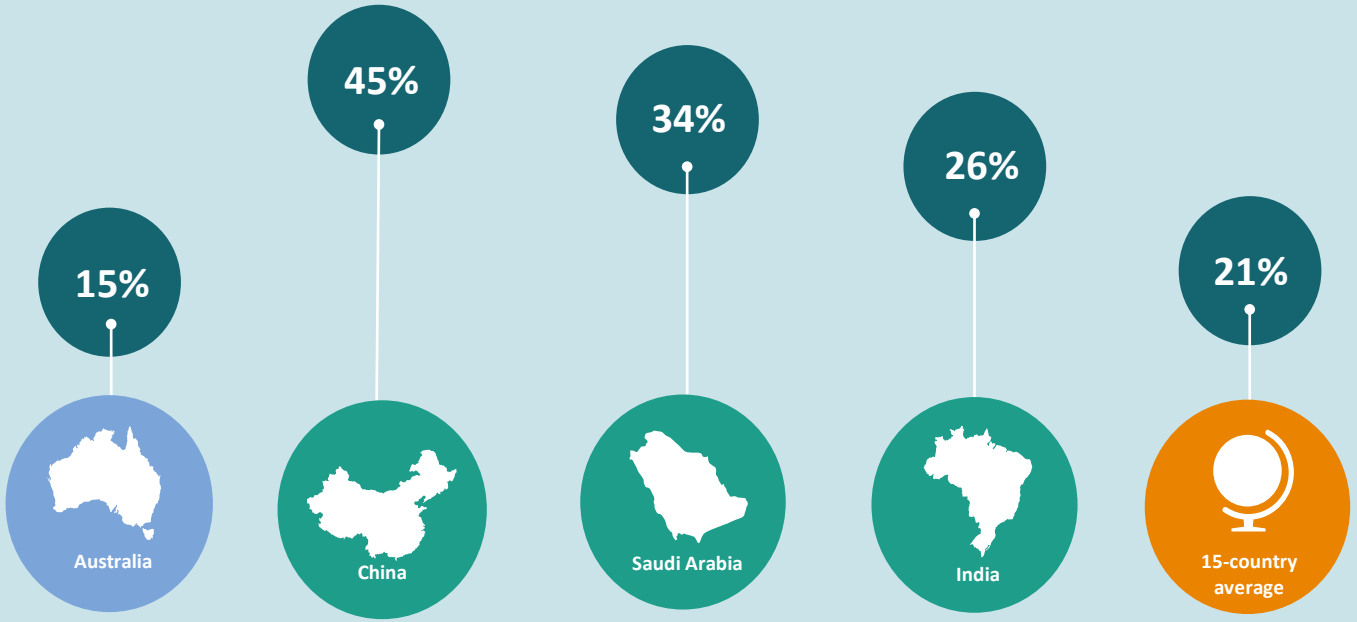
With the exception of user penetration, **Australia is lagging behind when it comes to digital health tech adoption/usage.**

Countries such as China are **leading the way for AI in healthcare**

China has led the share of global investment and financing in the field of AI between 2013 and Q1 2018 with 60% of the 15-country average, followed by the US (29%) and India (5%). This could be allowing them to experience more of AI's benefits, and other emerging countries perform strongly in the Future Health Index data when it comes to AI.

Australia lags well behind these other emerging countries, as well as the 15-country average, when it comes to the usage of AI within healthcare. Australians are likely worried that AI will substitute the human aspects of their healthcare experience, as over a third (38%) associate AI with less human interaction.

Healthcare professionals in China, India and Saudi Arabia are among the most **likely to use AI technologies to improve the accuracy of diagnosis:**



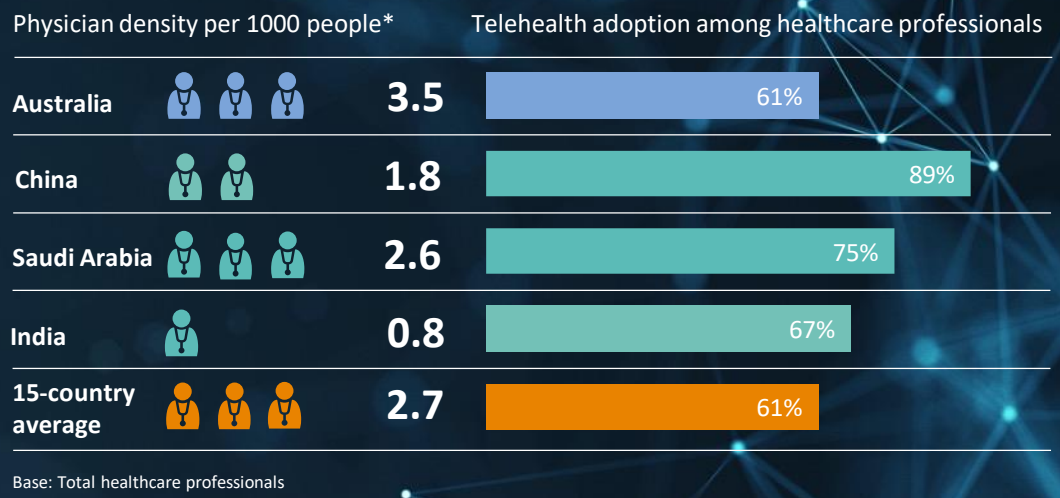
Base: Total healthcare professionals

Forerunner countries have used technology to overcome **availability challenges**

The Future Health Index 2019 shows that, in many cases, telehealth adoption is higher among healthcare professionals in countries with low physician density, perhaps due to demand for alternative solutions.

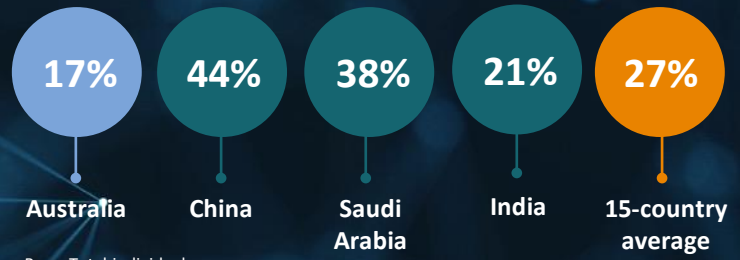
Despite the relatively high density of healthcare professionals in Australia, telehealth is still needed to address gaps within the healthcare system, as about a quarter of Australians (26%) believe they are not provided with availability to visit doctors when care is needed.

Though falling below the 15-country average, many Australians are willing to leverage telehealth technologies to address these gaps and use remote consultations for non-urgent care.



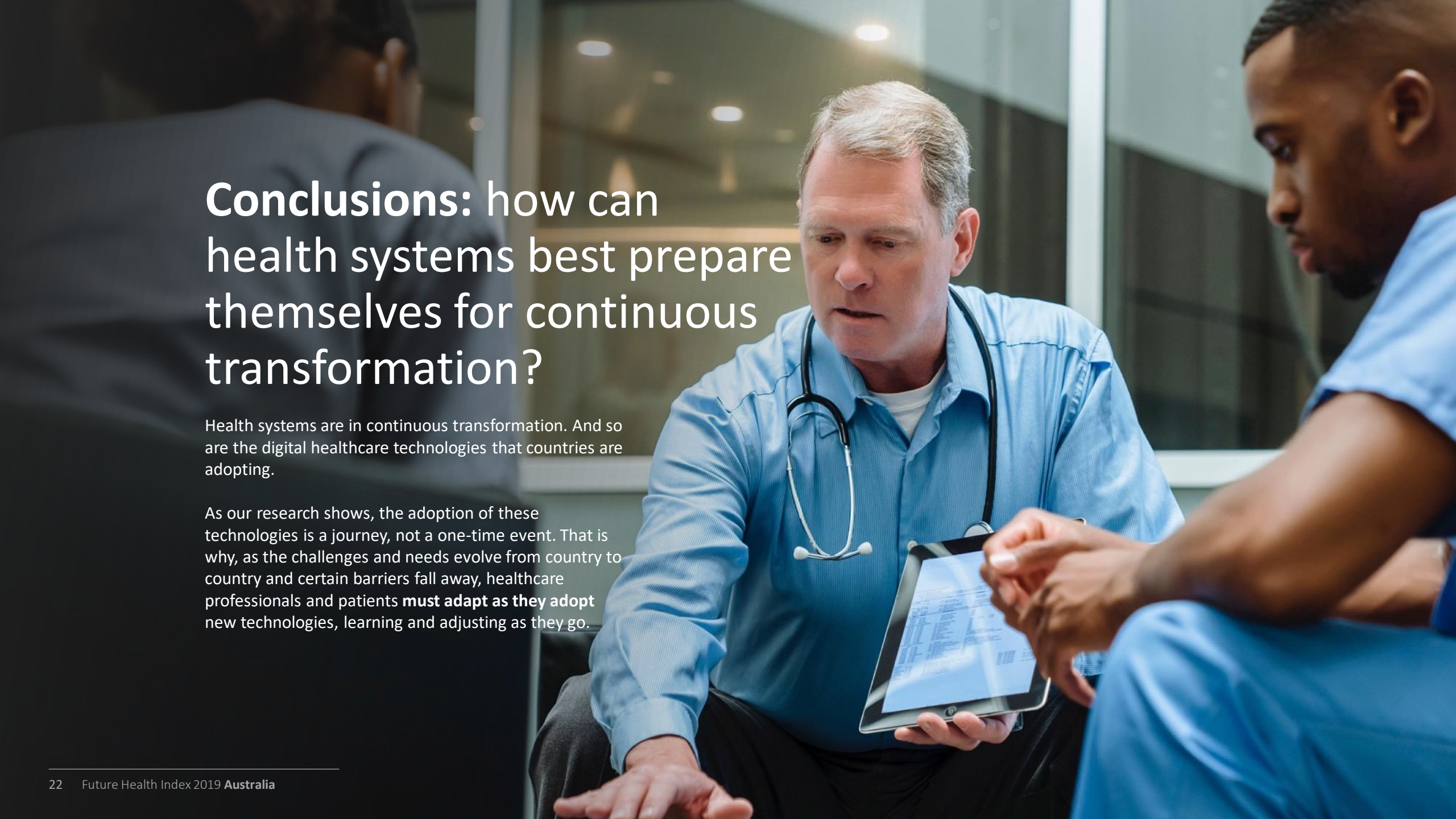
Base: Total healthcare professionals

Individuals in China and Saudi Arabia are among the most likely to say, if given the choice, they **would prefer a consultation with their doctor remotely via a digital channel for non-urgent care.**



Base: Total individuals

*Based on 2016 and 2015 data, depending on which is available per country



Conclusions: how can health systems best prepare themselves for continuous transformation?

Health systems are in continuous transformation. And so are the digital healthcare technologies that countries are adopting.

As our research shows, the adoption of these technologies is a journey, not a one-time event. That is why, as the challenges and needs evolve from country to country and certain barriers fall away, healthcare professionals and patients **must adapt as they adopt** new technologies, learning and adjusting as they go.

Improved patient outcomes are the way to demonstrate **preventative healthcare**

Australian healthcare professionals believe, when it comes to how best to demonstrate preventative healthcare's return on investment, improved patient outcomes is key.

Many say that preventative healthcare will lead to more efficient healthcare systems that deliver greater value to patients. However, that value will not be clearly recognised unless disease and mortality rates are reduced, hospital admissions go down and patient satisfaction improves throughout the country.

Cost effectiveness studies

Improved patient health

Reduced incidence of disease

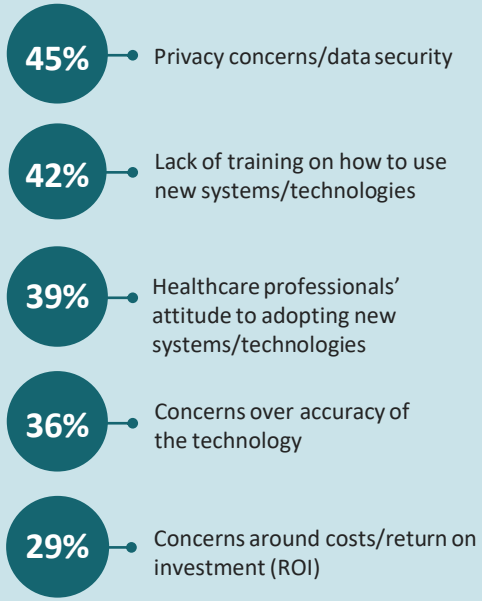
Reduction in incidence of illness or mortality

Fewer mistakes, better accuracy of diagnosis, better patient satisfaction

While the forerunners are solving challenges and using digital health technologies, barriers to **broader adoption** remain

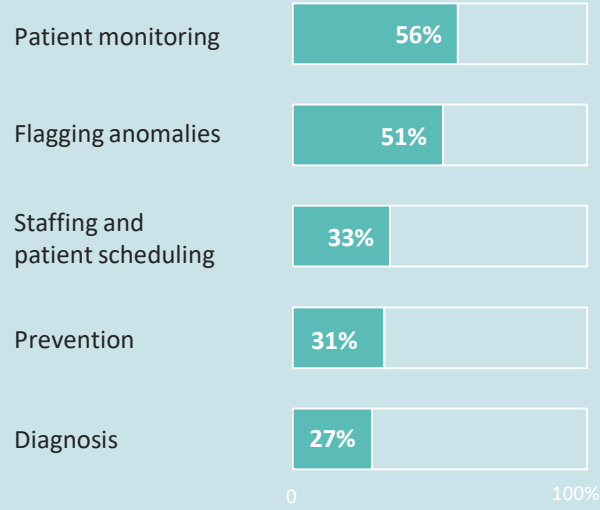
Singapore and China are among the most advanced in terms of using digital health technologies. However, with increased use comes future challenges with healthcare professionals' attitudes towards security and privacy. Interoperability and data security still remain top concerns for Australian healthcare professionals.

New barriers are constantly emerging, though, as new technologies continue to impact the healthcare industry. For example, **when it comes to telehealth adoption, barriers include:**



Base: Total healthcare professionals

Despite these roadblocks, Australian healthcare professionals recognise the benefits of advancements in healthcare technology, especially in patient care. They acknowledge the following as aspects of healthcare that could improve in the next 5 years due to advancements in technology.



Base: Total healthcare professionals

Conclusions

Central to ensuring improved healthcare experiences is the deployment of digital technologies to support cost-effective, value-based, data-driven care. Yet incorporating new technologies into healthcare is a journey.

Global healthcare systems are under increasing pressure. Australia is no different. With the population ageing and people living longer, the number of people with chronic conditions is on the rise.

Putting the patient front and centre of healthcare strategies is essential, and the healthcare community across Australia must collaborate to ensure this can be delivered efficiently and cost effectively.

Technology and collaboration are enablers to achieving this. Australia is at a digital health tipping point. Healthcare professionals say that digital health technology has positively impacted their experience and the experience of their patients. While there is growing understanding that the adoption of digital health technology is beneficial for improving patient outcomes, Australia can do more to collaborate and maximise technologies to improve health outcomes.

Telehealth has clear benefits for Australia with a geographically dispersed population, yet this year's report highlights that there is more potential to unlock the benefits. Telehealth can help overcome availability challenges, yet is only offered by 61% of healthcare professionals. The research shows that adopting telehealth technology is as much about improving the patient experience, as it is increasing the accessibility of non-urgent care.

Telehealth and virtual care have massive potential to transform the industry, giving more people access to the healthcare they need, and relieving pressure on the overstretched system.

The most profound area of opportunity to move Australia into the era of continuous transformation and improve patient and healthcare experience is AI in healthcare.

AI can be applied for much more than staffing and patient scheduling, without taking away from the human interaction. Application of AI to diagnosis, treatment plans and actioning treatment plans should be viewed as augmenting physicians' capabilities, not replacing them, creating a better experience for all.

As Australia stands at the digital health tipping point, the deployment of these technologies to support cost-effective care with more accurate treatment decisions is central to delivering better value for the Australian health system.

With these technologies, healthcare providers can focus on patient values, not volumes, which in turn ensures true value-based care with better patient outcomes, improved patient experiences, improved staff satisfaction, and a lower cost of care.

With strong collaboration across the industry, value-based care will deliver enhanced healthcare experiences for whole populations.

Methodology

Research overview and objectives

The Future Health Index (FHI) is a research-based platform designed to help determine the readiness of countries to address global health challenges and build efficient and effective health systems. In the context of ever-growing pressure on resources and costs, the FHI focuses on the crucial role digital tools and connected care technology can play in delivering more affordable, integrated and sustainable healthcare.

In 2019, the FHI explores the role of digital health technology on two aspects of the Quadruple Aim: the healthcare experience for both patients and healthcare professionals[1] and how it is moving us to a new era of continuous transformation.

The 2019 Future Health Index comprises a survey of the general population and healthcare professionals in 15 countries (Australia, Brazil, China[2] , France, Germany, India, Italy, Netherlands, Russia, Saudi Arabia, Singapore, South Africa, Poland, the United Kingdom and the United States of America).

The survey was conducted in partnership with independent global market research firms. The data collection method was online and offline (as relevant to the needs of each country) with a sample size of 1,000 per country for the general population and 200 per country for healthcare professionals. The exceptions were the US and Germany, who each had slightly larger samples of healthcare professionals. For the individuals (general population) audience, the survey is representative of key demographics e.g. age, gender, region, location type (i.e. rural/urban), income/SEL/education and ethnicity (where appropriate to ask). This was achieved through a mix of balancing and weighting. In Saudi Arabia and Brazil, the survey is nationally representative of the online population. The survey length was approximately 15 minutes for the US, Germany, and the Netherlands, and approximately 10 minutes for the remaining countries.

[1]For the purposes of this survey, healthcare professionals are defined as those who work in healthcare as a doctor, surgeon, nurse practitioner, registered nurse, licensed practical nurse or nurse across a variety of specialisations.

[2]Each data source approaches data collection for China differently. Some include Taiwan and/or Hong Kong, others treat them separately. For the purposes of this research, when third-party data has been used, we have not adjusted the data from the way it was collected. As such the data is reflective of each source's approach to measuring China. Survey data is representative of Mainland China.

Methodology

2019 survey data

At the 95% confidence level, the 15-country total for the general population has a margin of error at +/- 0.8 percentage points and the 15-country total for the healthcare professional population has an estimated margin of error[3] of +/- 1.7 percentage points.

Below is the specific sample size, margin of error at the 95% confidence level, and interviewing methodology used for each country.

	Individuals (General Population)			Healthcare Professionals		
	Unweighted Sample Size (N=)	Margin of Error (at 95% confidence level)	Interview Methodology	Unweighted Sample Size (N=)	Estimated Margin of Error	Interview Methodology
15-Country Total	15,114	+/- 0.8%	Online and offline	3,194	+/-1.7%	Online
Australia	1,003	+/- 3.1%	Online	204	+/- 6.9%	Online

Local Country General Population Weighting
For the general population sample, all countries were weighted to be representative of the national population based on census statistics (where available) for key demographics. The weighting was applied to ensure the sample is representative of individuals age 18+ in each country. In Australia, this included age, gender, rural/urban, region, income, race/ethnicity and education.

Total Country Weighting (Healthcare professionals and Individuals)
The 15-country average is an average calculation with each country's sample size weighted to have the same value to ensure each country has an equal weight in this total. The same was done for all regional totals.

[3]Estimated Margin of Error is the margin of error that would be associated with a sample of this size for the full healthcare professional population in each country. However, this is estimated since robust data is not available on the number of healthcare professionals and specialty mixes in each country surveyed.

Methodology

Third party data

Reports

	Source	Link
Wearables: China	Statista.	https://www.statista.com/outlook/319/117/wearables/china
Wearables: India	Statista.	https://www.statista.com/outlook/319/119/wearables/india
Wearables: Russia	Statista.	https://www.statista.com/outlook/319/149/wearables/russia
Wearables: Saudi Arabia	Statista.	https://www.statista.com/outlook/319/110/wearables/saudi-arabia
Wearables: Australia	Statista.	https://www.statista.com/outlook/319/107/wearables/australia
Share of global artificial intelligence (AI) investment and financing by country from 2013 to 1Q'18	Statista (2018)	https://www.statista.com/statistics/941446/ai-investment-and-funding-share-by-country/
Physician density (per 1,000 population)	World Health Organization (2014-2016)	http://apps.who.int/gho/data/view.main.GDO1801v

Country profiles

	Source	Link
GDP per capita	World Bank (2017)	https://data.worldbank.org/indicator/ny.gdp.pcap.cd
Healthcare expenditure per capita	World Bank (2015)	https://data.worldbank.org/indicator/SH.XPD.CHEX.PC.CD
Healthcare expenditure as a percentage of GDP	World Bank (2015)	https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS
Type of health system	Commonwealth Fund (or other source – varies by country)	https://international.commonwealthfund.org/countries/
Median age	United Nations (2015)	hatttps://population.un.org/wpp/DataQuery/
Life expectancy at birth	World Health Organization (2016)	http://apps.who.int/gho/data/node.main.688?lang=en
Healthy life expectancy at birth	World Health Organization (2016)	http://apps.who.int/gho/data/node.main.HALE?lang=en
Infant mortality rate (per 1,000)	World Bank (2017)	https://data.worldbank.org/indicator/sp.dyn.imrt.in?view=chart
Top Cause of death	Institute for Health Metrics and Evaluation (2017)	http://www.healthdata.org/results/country-profiles

Glossary of **terms**

Access [to care]: The ability to access medical care when needed.

Artificial intelligence (AI): The ability of a device/technology to copy intelligent human behaviors to assist with different tasks.

Availability [of care]: The doctor a patient needs to see is available when care is required.

Data privacy: Ensuring personal or private information about individuals or organisations is only collected and/or stored by those who have authorised access.

Data security: Protecting data against unauthorised access.

Digital health communication capabilities/tools: Technologies that allow a patient to communicate with its healthcare professional (e.g. through a patient portal, remote appointments, etc.)

Digital health records: Digital health records can store a variety of health information, including medical history, test results, health indicators, etc. They can be used within a certain healthcare facility, across different healthcare facilities, by only the patient themselves, by one healthcare professional or across all healthcare professionals involved in a patient's care.

Digital health technology: Technology that enables sharing of information throughout all parts of healthcare (doctors, nurses, community nurses, patients, hospitals, specialists, insurers, and government). This technology can take a variety of forms, including, but not limited to: devices that track various health indicators such as heart rate or steps (e.g., wearables such as a smart watch/fitness trackers or home health monitoring devices); computer software that allows secure communication between doctors and hospitals (e.g., digital health records) or allows communication between doctors and patients (e.g., patient platforms); health devices that are internet enabled and transmit data.

Future Health Index: The Future Health Index (FHI) is a research based platform designed to help determine the readiness of countries to address global health challenges and build sustainable, fit for purpose, national health systems. In the context of ever growing pressure on resources and costs, the Future Health Index focuses on the crucial role digital tools and connected care technology can play in delivering more affordable, integrated and sustainable healthcare. Since its inception in 2016, the Future Health Index program has used credible research to derive actionable insights that have initiated dialogue across the industry, with the aim to drive change.

Healthcare: All areas of the health system a person might interact with, from visiting a general practitioner to emergency services and specialists.

Healthcare professional: All medical staff - including doctors, nurses, surgeons, radiologists, etc.

Interoperability: The ability of health information systems to work together within and across organisational boundaries regardless of brand, operating system, hardware, etc.

Telehealth: The use of electronic information, digital health technology or mobile health applications and telecommunications technologies to support long-distance exchange between healthcare professionals, patient and healthcare professional as well as health-related education, public health and health administration.

Value-based care: Value-based care describes a healthcare system that aims to increase access to care and improve patient outcomes at lower cost. It is a people-centric approach that spans the entire health continuum. In short, it is about providing the right care in the right place, at the right time and the right level of cost. At Philips, we also focus on improving the experiences of both the patient and the healthcare providers in line with the 'quadruple aim':

- Improved patient experience
- Better health outcomes
- Improved staff experience
- Lower cost of care

www.philips.com/futurehealthindex-2019