Future Health Index **2019**

United States

Country report

The Future Health Index is commissioned by Philips

Future Health Index 2019: **An introduction**

The Future Health Index is a research-based platform which focuses on how digital health technology can accelerate the shift from volume-based to value-based care in the global drive for sustainable healthcare 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

This is also true in the United States – the challenge, of course, is to provide that care in ways that are as efficient and economical as they are effective.

Philips' fourth annual Future Health Index, based on a survey of over **15,000 individuals** and more than **3,100 healthcare professionals** in **15 countries**, explores health technology's impact on the patient and healthcare professional experience.

Central to ensuring improved healthcare experiences will be the deployment of digital technologies to support cost-effective, value-based, connected healthcare. While progress is being made, the wide-scale adoption of these digital technologies still face considerable barriers in the United States.

The impediments include inadequate access to technology, difficulty with integrating into healthcare professionals' ways of working and interoperability challenges. Steps are being taken to overcome these barriers, though not as quickly as many expect.

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

Engaged and digitally enhanced healthcare professionals
The increasing number of healthcare professionals in the United States who use technologies like digital health records (i.e. electronic health records) and telehealth see higher job satisfaction.

Empowered patients – does access to data mean 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 healthcare experience.

US: learning from others
The experiences of digital health technology forerunners like China, and peers such as Germany and the UK, provide lessons the US can learn from.

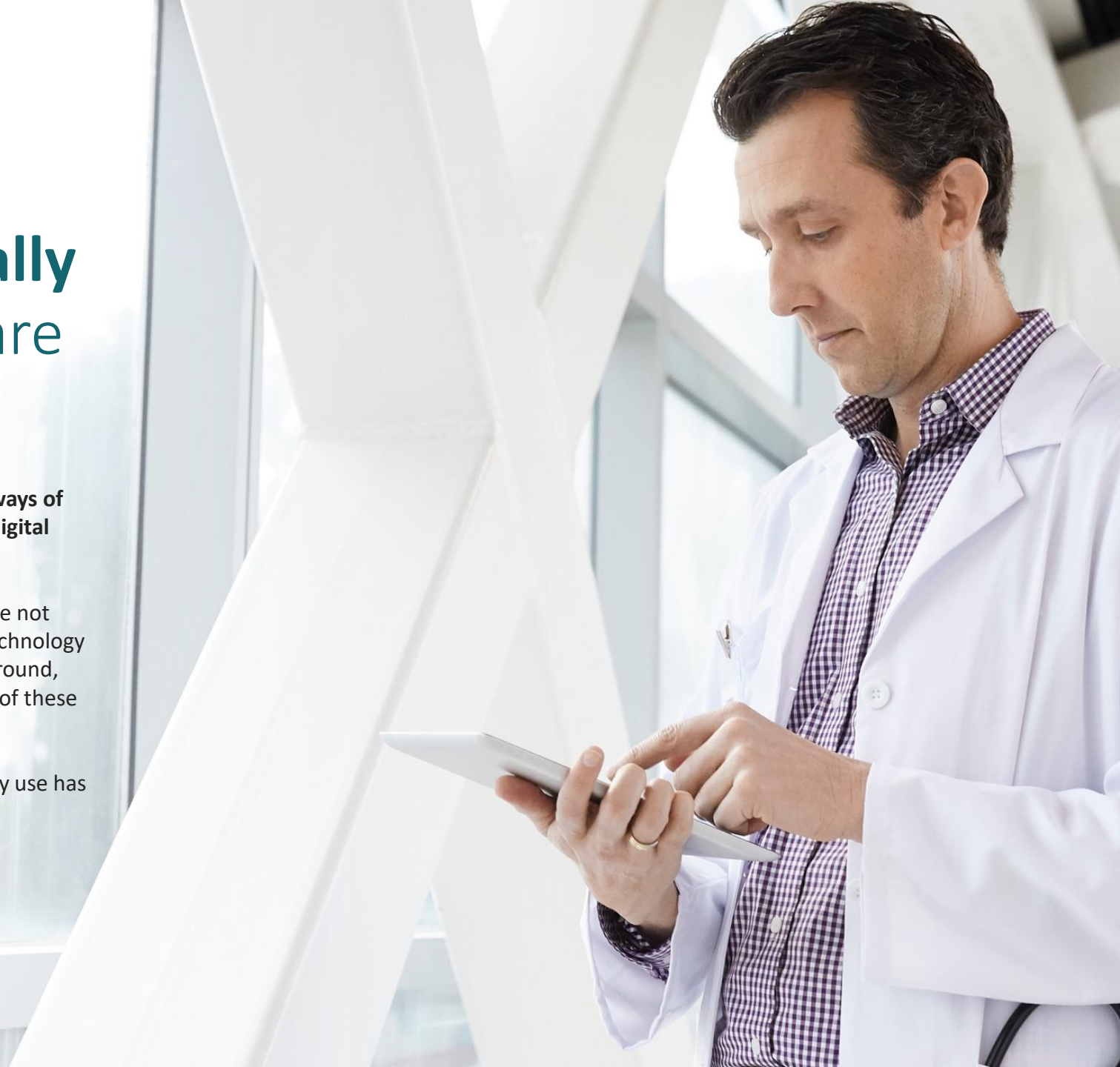
*Individuals: the general population of the 15 countries studied. They represent the population which healthcare systems ultimately serve, including current patients, previous patients, those with chronic conditions and those with limited prior interactions with the healthcare system.

Engaged and **digitally enhanced** healthcare professionals

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

However, many American healthcare professionals are not harnessing the full potential and support of health technology in all aspects of their work. If we turn this situation around, healthcare professionals can become true advocates of these methods to both their patients and their peers.

Removing the remaining barriers to health technology use has the potential to reduce workload, curb healthcare professional burnout and enhance their work lives.



The **state of play**

Most healthcare professionals are using some type of health technology in the United States, but there are still untapped opportunities

Healthcare professionals in the United States have access to health technologies, but use is lagging in some areas.

While American healthcare professionals are leading in leveraging digital health records (e.g. EHRs, EMRs, etc.), for most of the key technologies we examined, the United States falls behind the 15-country average. The largest areas for improvement are in the use of telehealth and artificial intelligence (AI).

2019

In 2019, we see that some healthcare professionals have not only adopted but are also using digital health technologies:

87% 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

84% of healthcare professionals (HCPs) are **using digital health records (e.g. EHRs, EMRs, etc.)** in their healthcare practice

76% 15-country average

Base: Total healthcare professionals

46% currently use **telehealth** within their healthcare practice

61% 15-country average

Base: Total healthcare professionals

33% use **AI technologies** within their healthcare practice

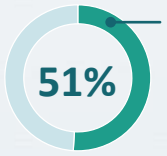
46% 15-country average

Base: Total healthcare professionals

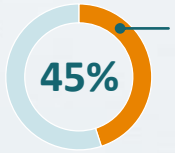
Improved experiences through **digital technology support**

When American healthcare professionals are supported by digital technology, their experience improves. There are various challenges faced in implementing digital health records (e.g. EHRs, EMRs, etc.), and a common assumption among healthcare professionals is that these records simply add administrative tasks to their workload. The Future Health Index 2019 further indicates that American healthcare professionals see the potential benefits of digital health records (e.g. EHRs, EMRs, etc.), especially benefits that tie back to the Quadruple Aim, but fall behind the 15-country average.

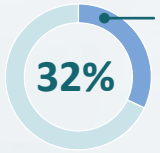
American healthcare professionals who use digital health records (e.g. EHRs, EMRs, etc.) in their practice report that they have a **positive impact on quality of care, healthcare professional satisfaction and patient outcomes – elements of the Quadruple Aim - but still fall behind the 15-country average:**



Quality of care provided
69% 15-country average



Patient outcomes
59% 15-country average



HCP satisfaction
64% 15-country average

Base: Total healthcare professionals who currently use digital health records (e.g. EHRs, EMRs, etc.) in their practice
(United States n=171; 15-country average n=2,268)

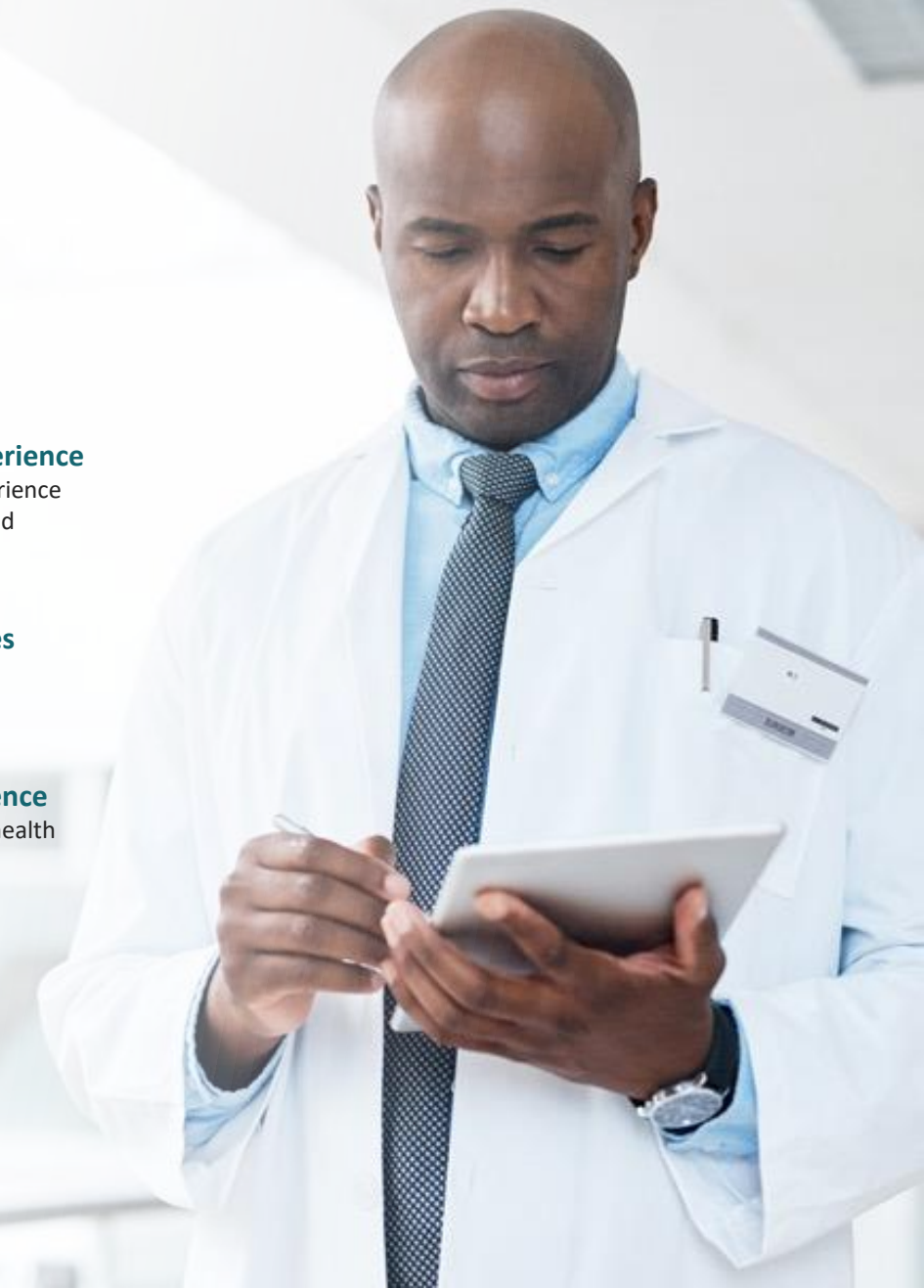
Quadruple Aim:

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

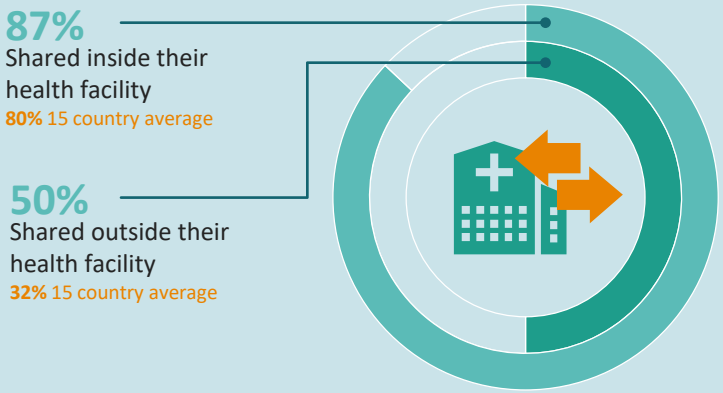


High rates of data sharing are inhibited by **interoperability challenges**

Most American healthcare professionals already share patient information electronically with other healthcare professionals, especially with peers within their own facility.

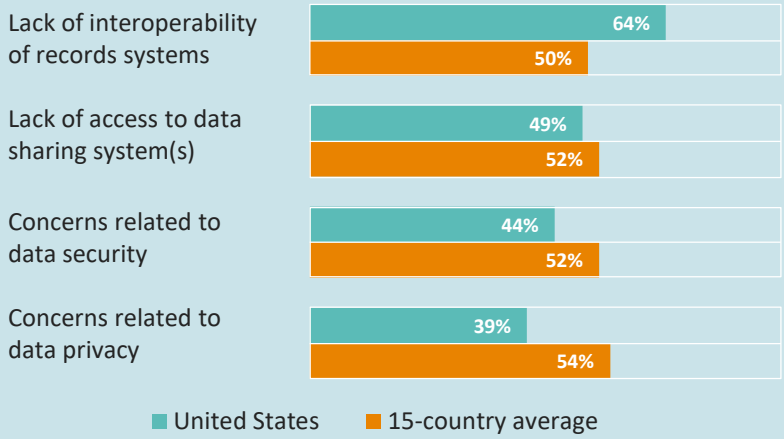
However, unlike many other countries where security and data privacy concerns keep healthcare professionals from sharing the data, lack of interoperability and access to data sharing systems are the top barriers to sharing outside their health facility. Thus, providing healthcare professionals with the right tools can help unlock the power of data.

American healthcare professionals are more likely than peers across other countries surveyed to share patient data, suggesting high adoption in the United States that could be further leveraged.



Base: Total healthcare professionals

The top reasons healthcare professionals in the US say they do not share patient information with healthcare professionals outside their health facility are:



Base: Total healthcare professionals who do not share patient information with other healthcare professionals outside their facility (n=90)

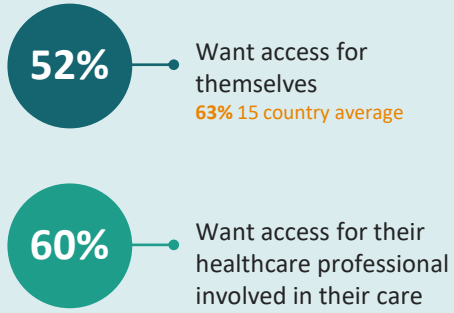
Missed potential: Many healthcare professionals perceive digital health records (e.g. EHRs, EMRs, etc.) as a burden

Many Americans want to play a more active role in their own healthcare – and want access to their own digital health records. Besides themselves, they also want the healthcare professional involved in their care to have access to their health data – suggesting high interest and adoption levels among individual citizens.

Healthcare professionals, however, paint a slightly different picture. Although digital health records are designed to support healthcare professionals - to facilitate work streams, data sharing and administrative tasks – healthcare professionals have mixed opinions on their impact. While some healthcare professionals already recognize the potential of digital health records (e.g. EHRs, EMRs, etc.), many also have somewhat less positive reactions to them.

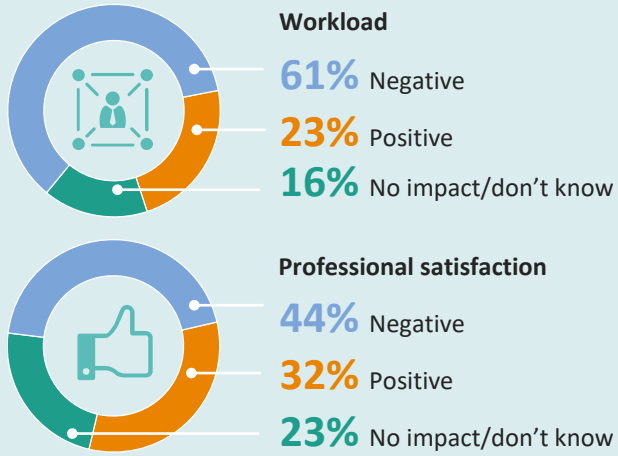
Better aligning patients' and healthcare professionals' experiences will be key to leveraging digital health records fully.

Many Americans who do not have access to their digital health record or don't know if they do, want to have access to their digital health record for themselves and the healthcare professional(s) involved in their care:



Base: Individuals who don't have access to their digital health record or don't know if they do) (n=575)

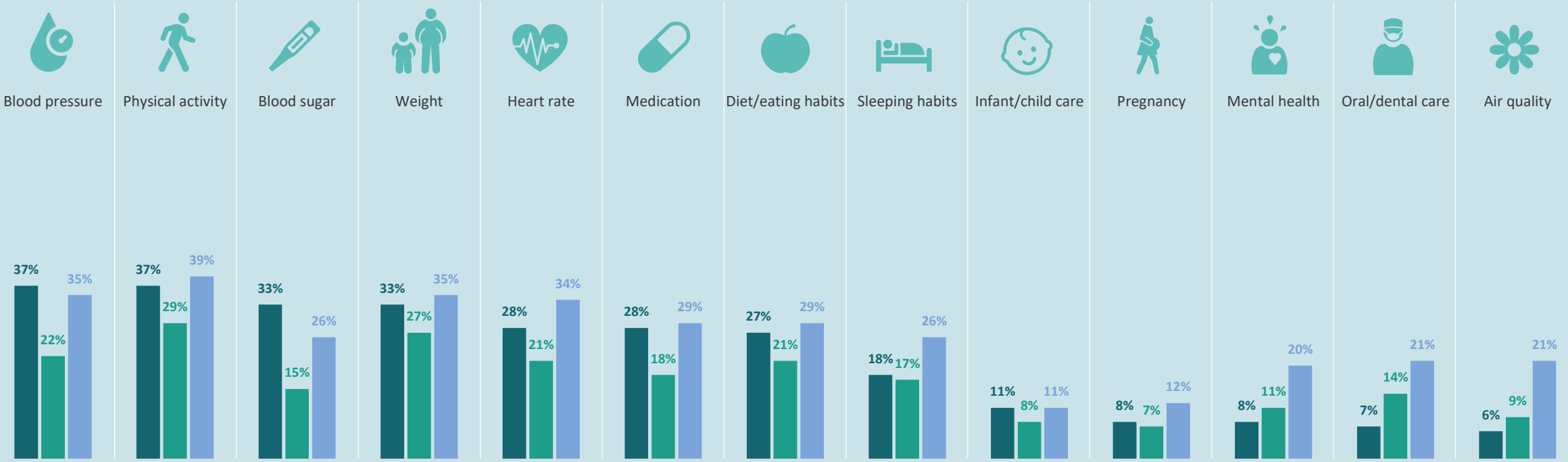
Among healthcare professionals who use digital health records (e.g. EHRs, EMRs, etc.) in their hospital/practice, the perceived impact varies:



Base: Total healthcare professionals who currently use digital health records within their hospital/practice. (n=171)

Health indicator tracking set to rise

Healthcare professionals are advising their patients to **track** key health indicators, and some patients already are, while many more believe they will in the future.

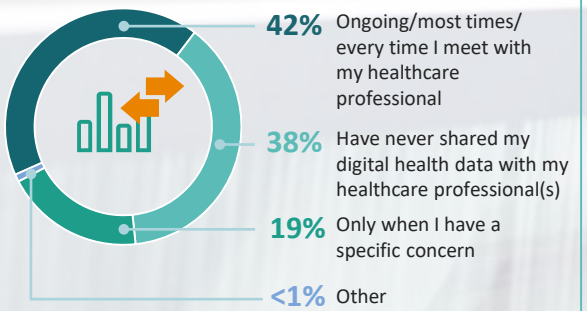


- Healthcare professionals that advise patients to track (often/always)
  Base: Total healthcare professionals
- Individuals that currently track (often/always)
  Base: Total individuals
- Individuals that think they will track in 10 years (often/always)
  Base: Total individuals

Reciprocal data-sharing is not the norm in the United States, but can **improve experiences**

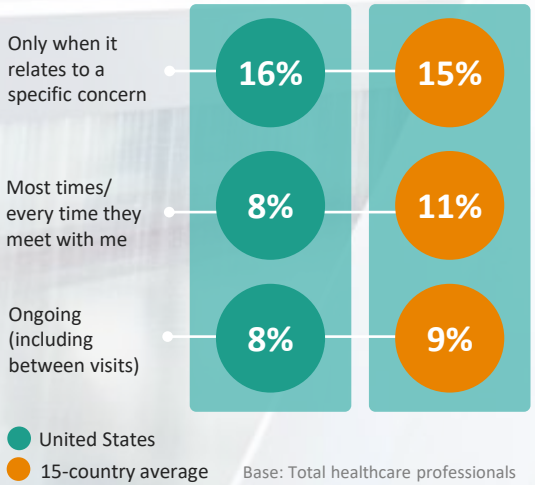
While individuals are beginning to track various health indicators, few healthcare professionals say this health data comes back to them. However, individuals are reporting higher levels of sharing than healthcare professionals are seeing.

Slightly **less than half** of the individuals who use digital health technology or mobile apps to track indicators regularly share data with their healthcare professional(s):



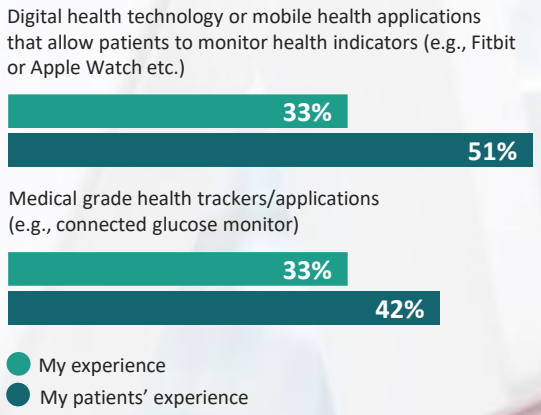
Base: Total individuals who use digital health technology or mobile health apps (United States n=668)

Yet, **very few healthcare professionals** say most or all of their patients have shared health data from digital health technology or mobile health apps with them:



Base: Total healthcare professionals

Regardless of current levels of data sharing, healthcare professionals see **benefits** of digital health technology and medical grade health trackers for both themselves and patients:



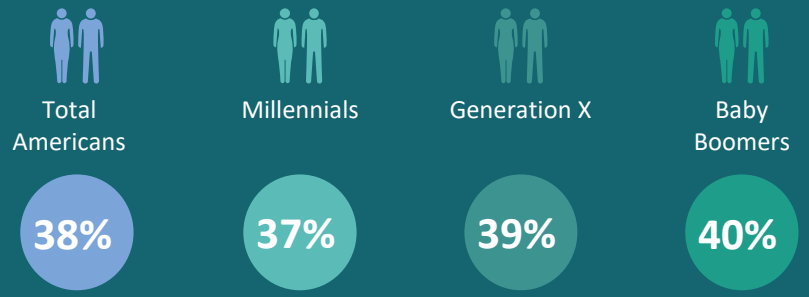
Base: Total healthcare professionals

Americans do not share data with their healthcare professionals – **especially Millennials**

In the United States, behaviors related to digital health technology and the rate of adoption vary from one generation to the next.

While American Millennials are on par with the rest of the population in tracking, they are not sharing that health data with their healthcare professionals.

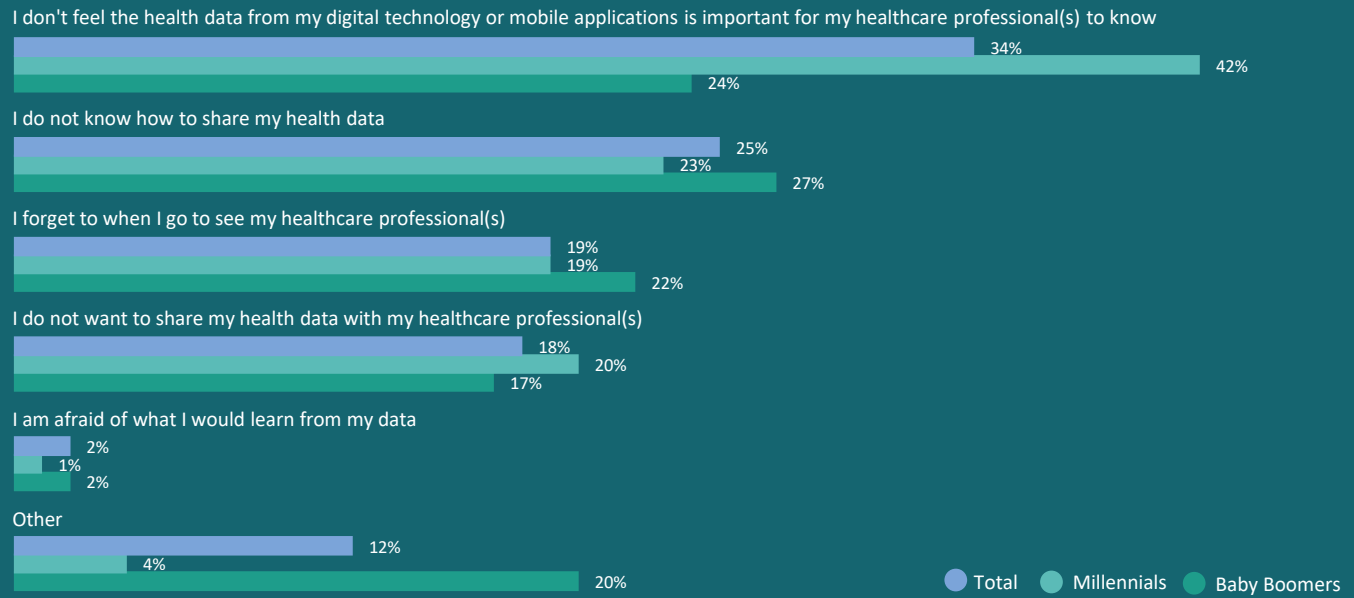
Percentage of Americans who use digital health technologies or mobile health apps to track health indicators but have never shared it:



Base: Total Individuals who use digital health technology (n=668; Millennials n=225, Generation X n=185, Baby Boomers n=189)

There are a multitude of reasons why Americans are hesitant to share data on key indicators that they collected themselves. Millennials are directionally more likely than the general American population to say they don't feel their health data is important for their healthcare professional. This suggests a need for education on the benefits of sharing data, especially among this generation.

Percentage of Americans who have never shared health data from digital health technology or mobile health apps with their healthcare professionals for the following reasons:



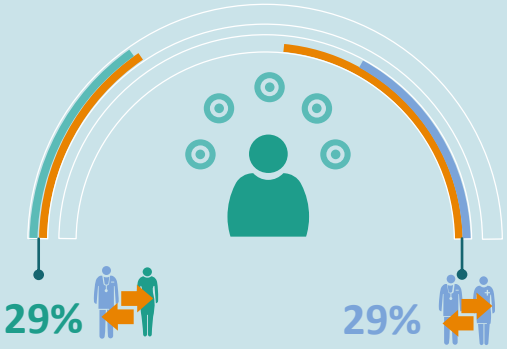
Base: Total Individuals who track health indicators but have never shared it with their healthcare professional (n=254; Millennials n=82; Baby Boomers n=75)

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

Barriers must be overcome for telehealth to deliver on its potential to improve healthcare access and availability

In the United States, telehealth has yet to become a common part of healthcare professionals' day-to-day work, with **54%** saying that they do not currently use any form of telehealth in their practice or hospital, compared to the 15-country average of 39%.

Only about a third of American healthcare professionals currently use telehealth in their practice or hospital for each of the following:



29% Healthcare professional-to-patient

30% 15 country average

Base: Total healthcare professionals

29% Healthcare professional-to-healthcare professional

47% 15 country average

Base: Total healthcare professionals

A majority of individuals (69%) say healthcare in the United States provides them with access to medical care when needed, and 71% say that healthcare professionals are available when they need care. Hence, about a third don't feel like they have access or availability to see a healthcare professional when needed. However, many are open to using telehealth to help close this gap:

45% of individuals are open to **remote consultations** for non-urgent care

45% 15-country average

Base: Total individuals

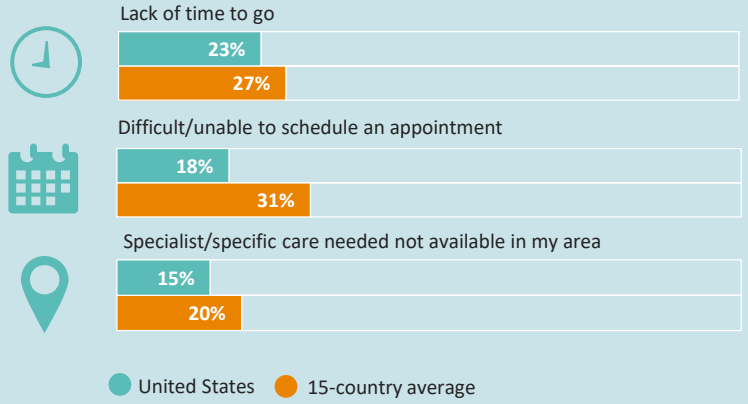
United States 15-country average

Furthermore, many American individuals have been discouraged from seeing a healthcare professional when they had a medical reason to do so – often for reasons that could be mitigated through use of telehealth.

58% of Americans are discouraged to visit a healthcare professional when they have a medical reason to go

71% 15-country average Base: Total individuals

Telehealth can be leveraged to address some of the top issues that discourage Americans from visiting healthcare professionals:



Base: Total individuals who have not visited a healthcare professional when they had a medical reason to go (United States n=577, 15-country average n=10,711)

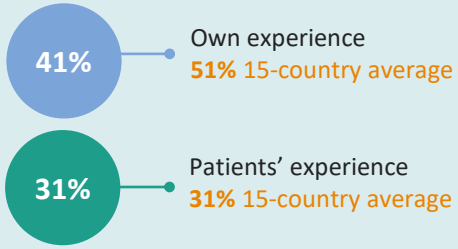
*Telehealth: either healthcare professional-to-patient or between healthcare professionals
^Open: those who prefer remote consultations via digital channels or have no preference

Healthcare professionals are starting to recognize telehealth benefits, but **barriers must still be overcome**

Healthcare professionals using telehealth to consult virtually with other healthcare professionals, share images or recommend treatment plans (peer-to-peer telehealth) is not yet the norm in the United States, and neither is remote patient monitoring or consultation via video calls or emails (healthcare professional-to-patient).

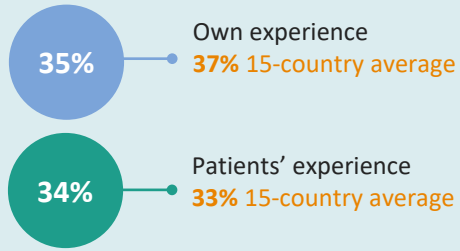
However, many healthcare professionals have seen healthcare professional-to-healthcare professional telehealth positively impact their own and their patients' experience. Similarly, many healthcare professionals have seen healthcare professional-to-patient telehealth positively impact their own and their patients' experience.

Healthcare professionals who say healthcare professional-to-healthcare professional telehealth has had a positive impact in the last 5 years on their:



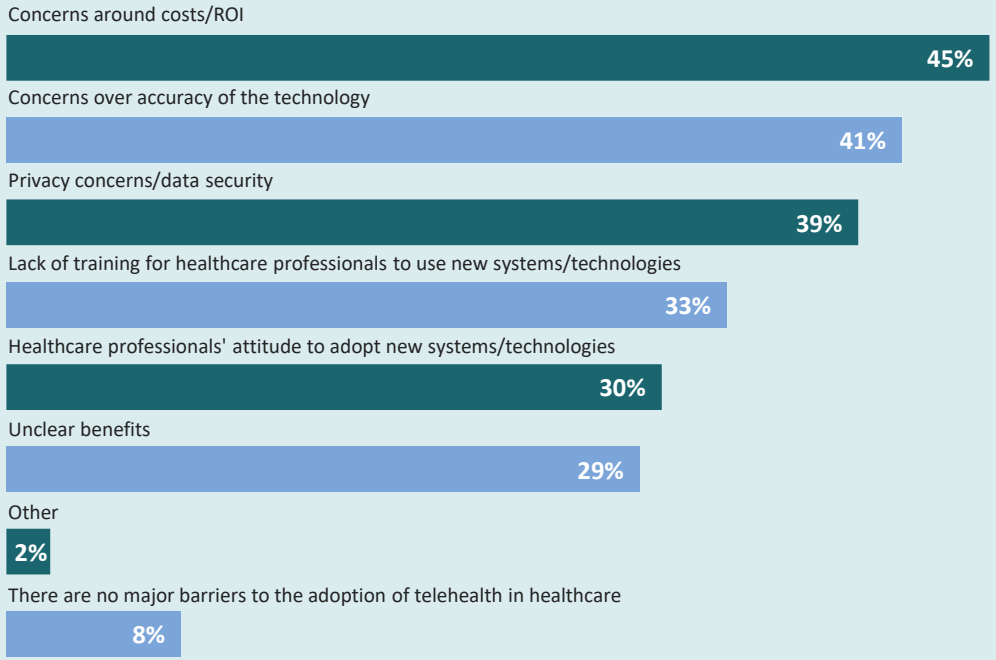
Base: Total healthcare professionals

Healthcare professionals who say healthcare professional-to-patient telehealth has had a positive impact in the last 5 years on their:



Base: Total healthcare professionals

The top barriers to telehealth adoption in the US are cost and concerns over accuracy of the technology. Barriers must be overcome for telehealth to deliver on its potential to improve healthcare access and availability.



Base: Total healthcare professionals

Artificial Intelligence: improving healthcare professionals' experience - and saving costs in the process

American healthcare professionals have yet to unlock the full potential of AI, as few are currently using AI in areas with near-term value, such as virtual nursing assistance, administrative workflow assistance, preliminary diagnosis and automated image diagnosis.

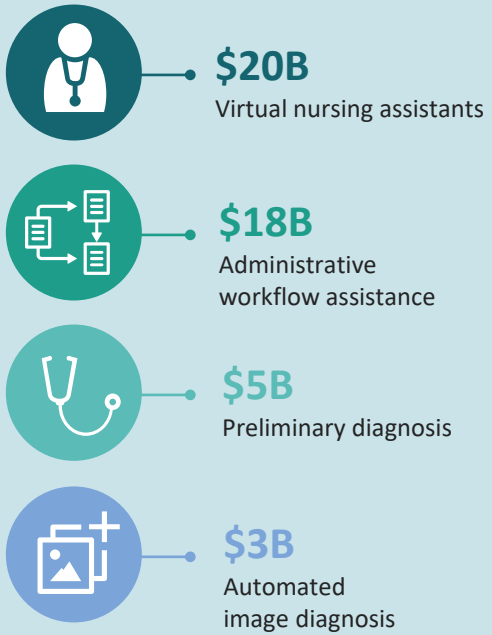
If healthcare professionals were open to leveraging AI's full capabilities, a recent study by Accenture (2017), notes that "key clinical health AI applications can potentially create $150 billion in annual savings for the US healthcare economy by 2026."

American healthcare professionals currently use AI for:

- **19%** Flagging anomalies such as interpreting medical images
  21% 15-country average
- **14%** Improving efficiency of patient/ staff scheduling
  24% 15-country average
- **12%** Facilitating remote patient monitoring
  19% 15-country average
- **10%** Improving accuracy of diagnosis
  21% 15-country average

Base: Total healthcare professionals

Potential savings due to AI applications:



Accenture: https://www.accenture.com/us-en/insight-artificial-intelligence-healthcare

Beyond economics: leveraging AI to **help reduce and prevent burnout**

While many American healthcare professionals are not currently using AI, many healthcare professionals would feel comfortable using it for a range of areas, suggesting a general openness to unlocking the full potential of AI in the future. However, comfort levels in the US are significantly lower than the average when looking across the 15 countries surveyed.

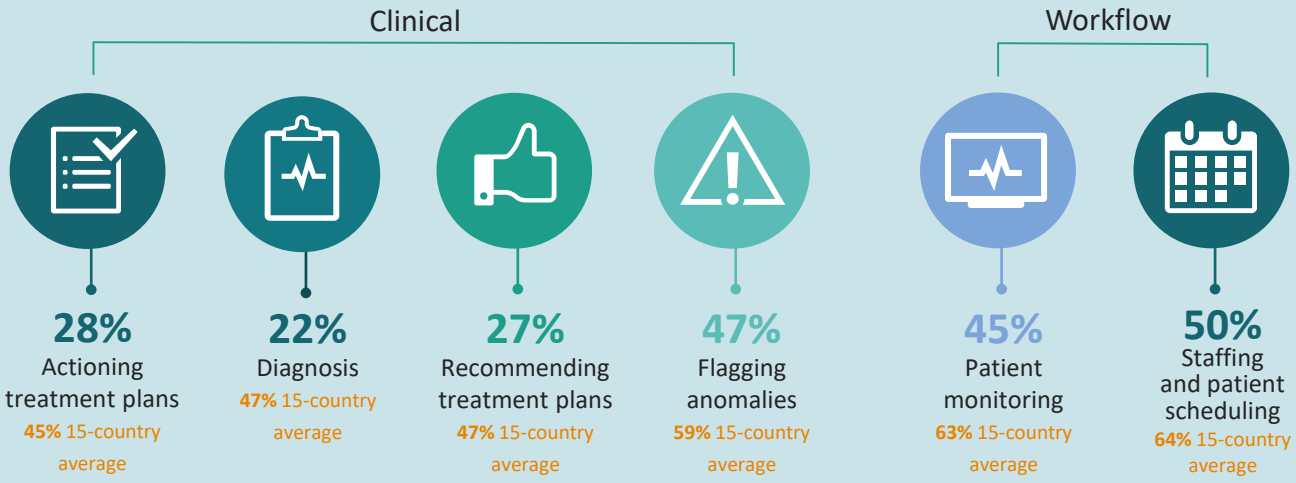
Once healthcare professionals start recognizing AI as a tool meant to support their day-to-day tasks, reduce their workload and enable them to better care for their patients, Artificial Intelligence, and its benefits, can be realized.

According to a study published in the Annals of Internal Medicine in 2019, physician burnout, physician turnover and reduced clinical hours lead to costs of an estimated $4.6 billion in the United States – per year.

A 2018 Ipsos study looked at AI adoption across a range of business sectors. In workplaces that use AI-powered tools, more than two-thirds of the employees surveyed say the tools have already had a positive impact on their efficiency (75% cite improvements in their effectiveness, 75% in their results, and 74% in how their work is structured).

American healthcare professionals feel significantly less comfortable than peers across the 15-country average about using AI in any area.

Percentage of healthcare professionals who are comfortable with using AI for the following:



Empowered patients: does access to data mean more control?

While digitally-supported healthcare professionals in the United States will play an important role in changing the way that healthcare is delivered, understanding **how technology can have a positive impact on the patient experience is just as significant.**

Across the 15 countries surveyed, 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, in theory, more likely to engage with it in a way that will improve the quality of care they receive and their overall healthcare experience. However, findings from the Future Health Index 2019 show that this is not always true for individuals living in the US.

Empowered patients are more satisfied patients

Future Health Index research indicates that empowering Americans through technology – enabling them to better manage their own health – has the potential to **improve the experience** for both patients and healthcare professionals

When asked what has improved their experience in the past five years, American individuals primarily cited benefits related to convenience and access:

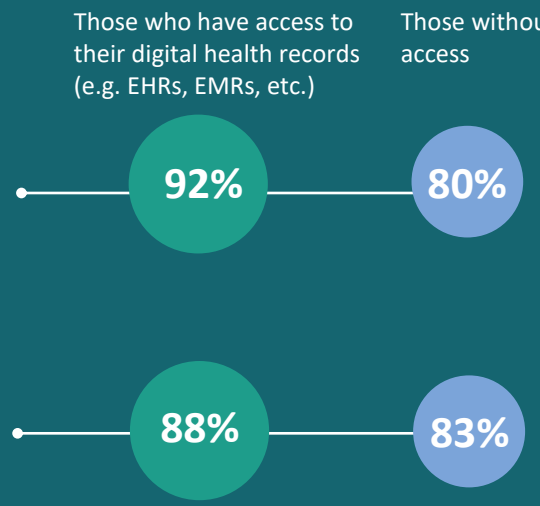
- **61%** I receive appointment/treatment **reminders**
- **54%** It's easier to **get test results**
- **53%** It's easier to **schedule appointments**
- **33%** I am able to **monitor health indicators** on my own
- **31%** I am able to **consult with my doctor remotely**

Base Total individuals who say their healthcare experience has improved in the past five years (n=751)

Americans **with access** to their digital health records (e.g. EHRs, EMRs, etc.) reported slightly better personal experiences in healthcare and better quality of care available to them than those who do not have access:

Percentage who rate their **personal experience of the care they receive** as good, very good or excellent

Percentage who rate the **quality of the care available to them in their country** as good, very good or excellent



Base Total individuals who have access to their digital health records (e.g. EHRs, EMRs, etc.) n=428
Base Total individuals who do not have access to their digital health records (e.g. EHRs, EMRs, etc.) n=371

The demand for **data ownership**

Americans want **ownership** of their health data

There is an appetite among American individuals to have access to their health data. This access can be facilitated via tracking various health metrics through digital health technologies or access to adigital health records (e.g. EHRs, EMRs, etc.). This reflects a desire for convenience, to have more control of their health, and learn more about themselves.

Americans are hesitant to access their own data – with a nearly identical split between individuals wanting access to their data and those who don't want access or don't know if they do.

Of American individuals who do not currently have access, or do not know if they have access, to their digital health records (e.g. EHRs, EMRs, etc.):

52% Want access

24% Don't want access

24% Don't know

Base Total individuals who do not or do not know they have access to their digital health records (e.g. EHRs, EMRs, etc.) n=575

Americans who are tracking their health via digital health technology do so because:

45% It's convenient

39% They feel more in control of their health

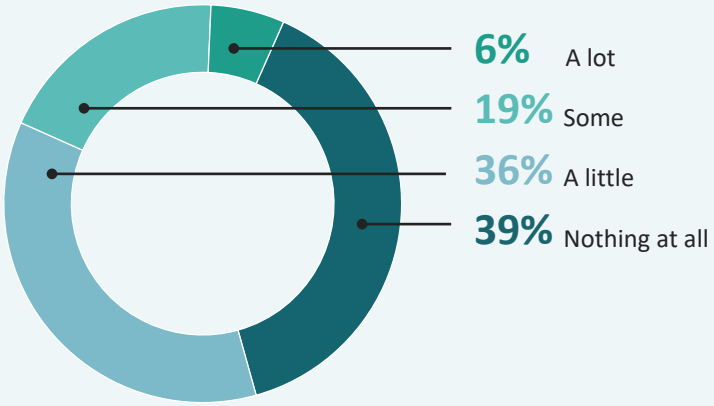
31% They learn more about themselves

Base Total individuals who use digital health technology or mobile health apps N=668

Most Americans have at least a **basic understanding of telehealth**

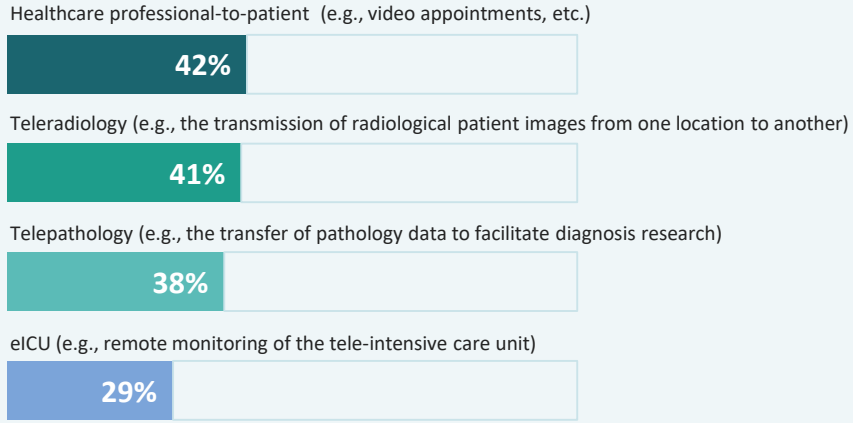
About six-in-ten (61%) Americans consider themselves knowledgeable (a little, some, a lot) about healthcare professional-to-patient telehealth, and many feel comfortable with a range of different types of telehealth.

Percent of Americans rating their knowledge of healthcare professional-to-patient telehealth as:



Base: Total individuals

Percent of Americans who are very or somewhat comfortable with various types of telehealth:

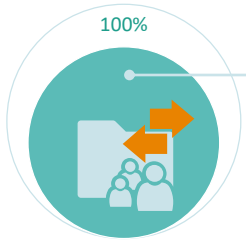


Base: Total individuals

Access and **ownership** of data promote Americans openness to data sharing

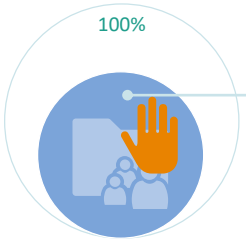
American individuals are more **collaborative** with healthcare professionals when they have ownership of their health data, improving experiences for both.

The research shows that individuals are more open to granting **healthcare professionals access to their data** when they have access to that data themselves. Healthcare professionals, particularly the younger generation aged 18-34 years, agree that patients having access to their health data improves the patient experience.



84% of the individuals **with access to their digital health records (e.g. EHRs, EMRs, etc.)** say they want their healthcare professional to have access too

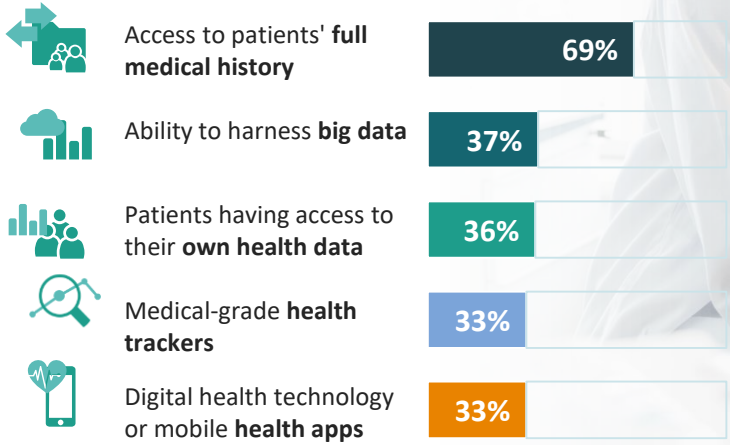
Base: Total individuals who have access to their digital health records (e.g. EHRs, EMRs, etc.) (n=428)



60% of individuals who **do not have access to their digital health records (e.g. EHRs, EMRs, etc.),** or **don't know if they have access,** want their healthcare professional to have this access

Base: Total individuals who do not or do not know if they have access to their digital health records (e.g. EHRs, EMRs, etc.) (n=575)

Healthcare professionals also report that their own experience has been **positively impacted** over the past five years by data-related updates, such as having access to their patients' full medical history.

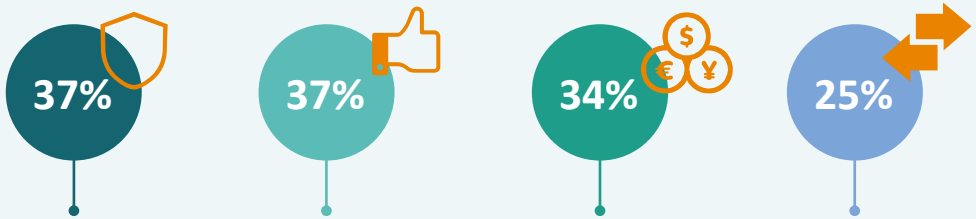


Base: Total healthcare professionals

To use digital technology and share data, American patients crave **convenience** and **guidance**

The data suggests that there could be greater potential for individuals' uptake of digital health technology and mobile health apps if usage of these technologies was more **frequently recommended** by healthcare professionals. There is also evidence to suggest that individuals will be more likely to use digital health technology if it's easier to share data with their healthcare professional.

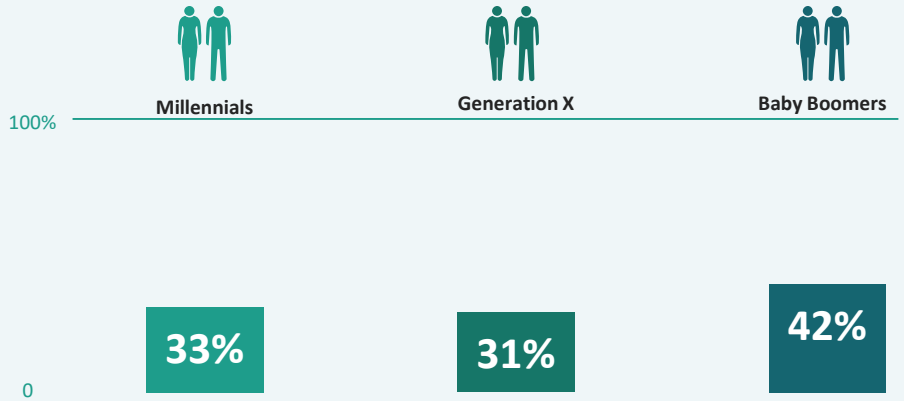
Some of the **top reasons** individuals would be more likely to use digital health technology are:



Base: Total individuals who do not always use digital health technology to track all health indicators and would be more likely to use it in some capacity (n=678)

Older generations are more likely to use digital health technologies if recommended to do so by their healthcare professional. This indicates that healthcare professionals can play an important role in establishing data-centric habits among older healthcare system users.

Those who would be more likely to use **digital health technology** or **mobile health apps** if a healthcare professional recommended it to them:



Base: Total individuals who do not always use digital health technology or mobile health apps to track all health indicators and would be more likely to use it in some capacity Millennials n=207, Generation X n=194, Baby Boomers n=211

Health vs wealth: some Americans prioritize money over their health

The Future Health Index 2017 showed that nine-in-ten US individuals would rather be healthy than rich, if given the choice.

Two years later, a sizeable number of Americans report they would actually rather be wealthy than healthy.

While still a majority would choose good health over money, it seems that the latter is becoming more important, especially for Millennials (aged 23-38).

Despite all the structural shifts the US healthcare industry has undergone in the last two years, there is still room to improve and grow into a patient-centric, value-based system.

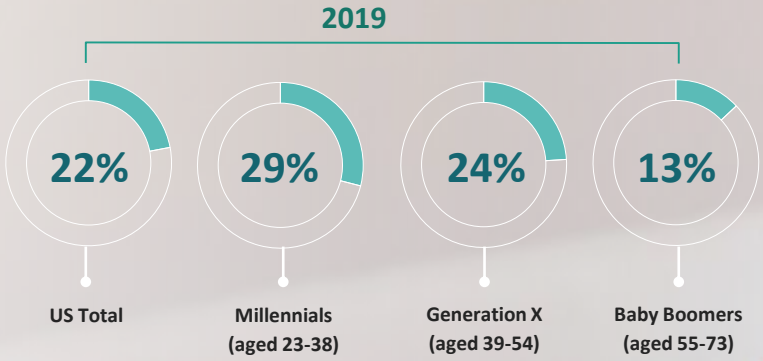
Compared to 2017, fewer people have chosen **their health over money.**

2017 — **91%** of individuals living in the US would rather be healthy than rich

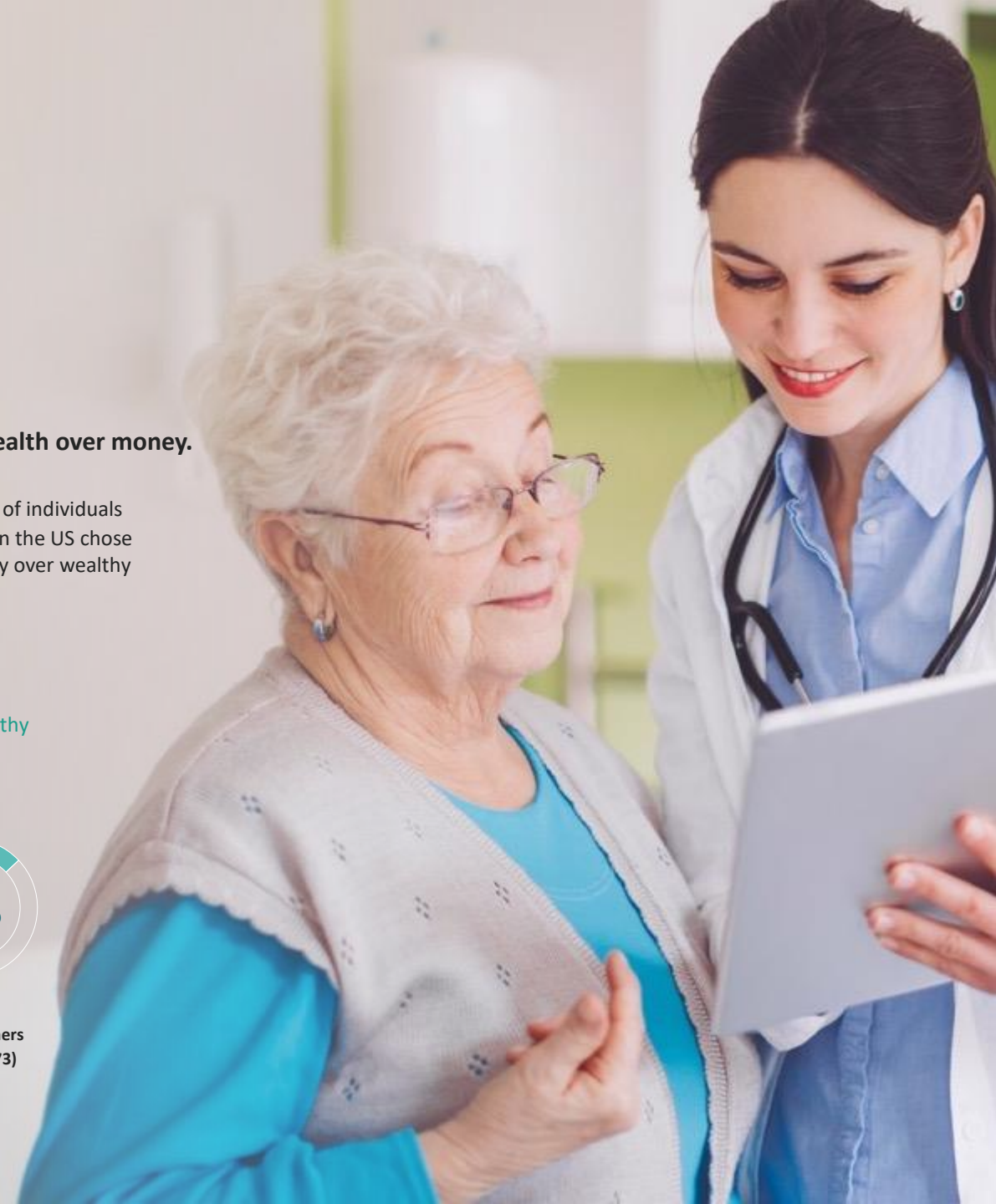
2019 — **78%** of individuals living in the US chose healthy over wealthy

Millennial and Gen X Americans are the most likely to **choose wealth over their health**

Percentage of Americans who would rather be wealthy than healthy or don't know if they would rather be healthy or wealthy:



Base: Total individuals, Millennials (n=306), Gen X (n=292), Boomers (n=302)



US: **learning from others**

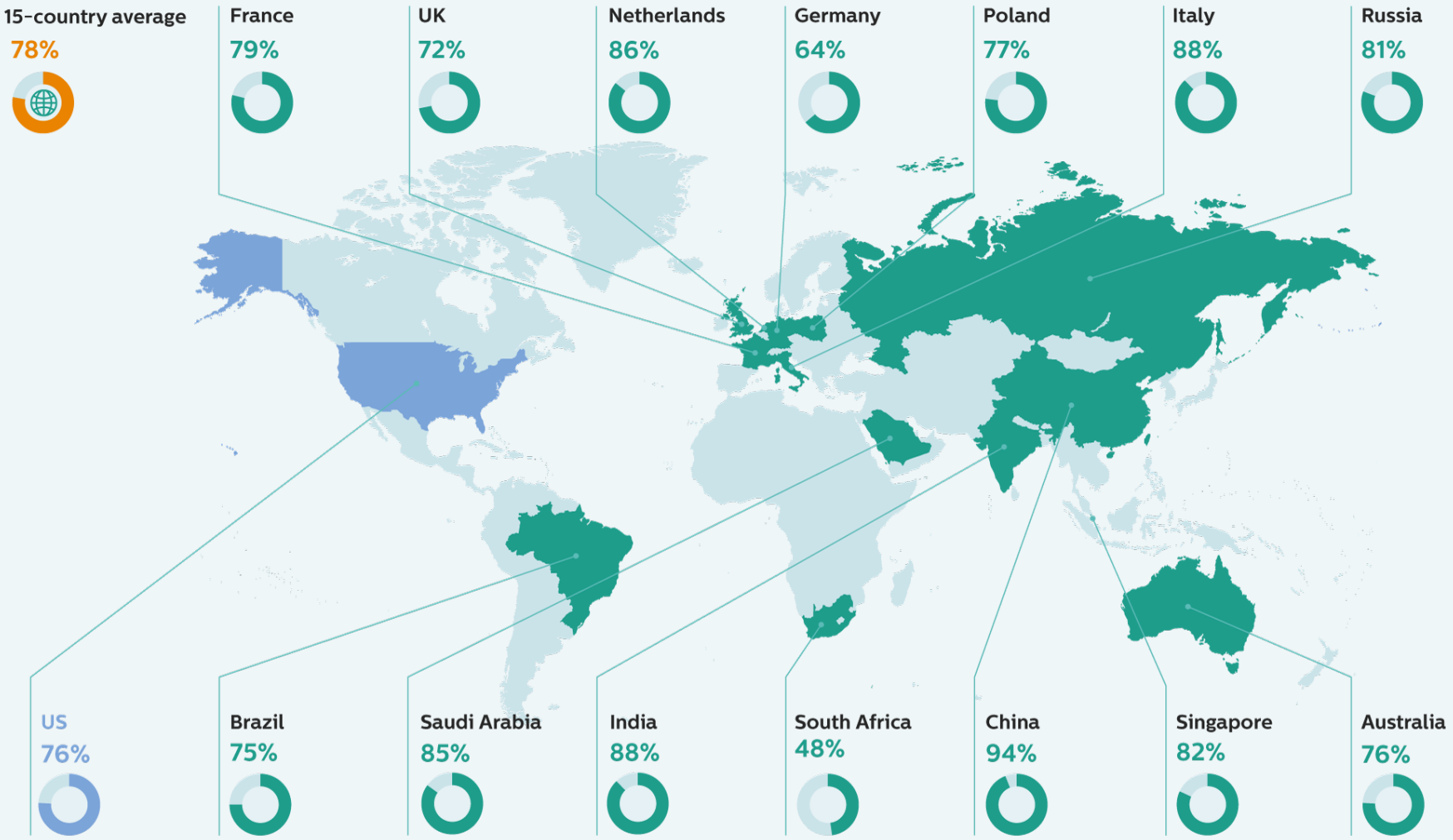
The Future Health Index 2019 has highlighted numerous areas of strength within the American healthcare system, and perhaps more importantly, it has shined a light on areas that can be improved upon.

Although specific challenges and circumstances differ from country to country, the experiences of digital health technology forerunners, such as China, and consistently strong performing peers, such as the UK and Germany, provide a point of reference from which the US can observe. This important collaborative effort will allow the US to move through adoption of digital health technology and advance into utilization.

Note: Countries chosen for comparisons were determined based on their performance in using health technologies, as well as competitive set with the United States.

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

The US is moving steadily from gaining access to digital health technology to implementing it – but is falling behind forerunners such as China.



Base: Total healthcare professionals

Individuals in the US more frequently say they **take action** related to their health as a result of tracking key health indicators

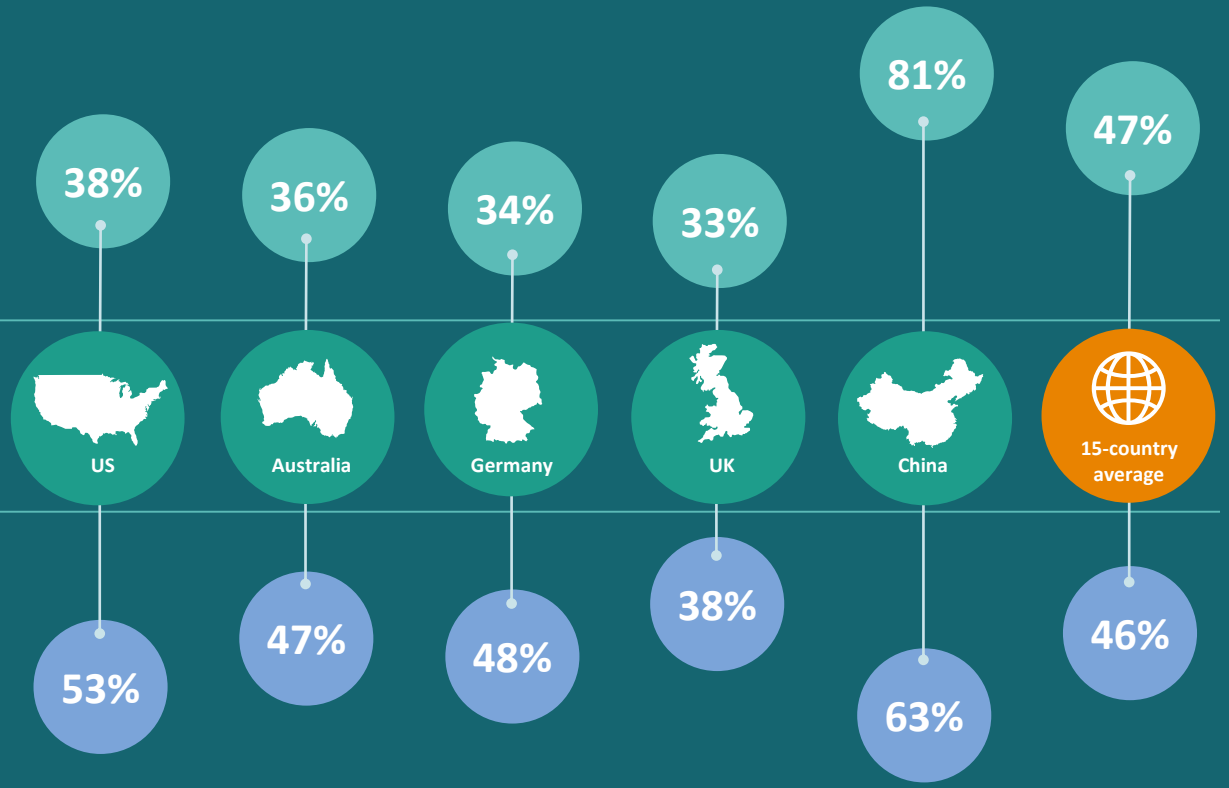
While the US is more likely than other countries to have individuals who take action by tracking health indicators, the information they receive from the health technology does not typically lead them to contact a healthcare professional.

Increasing not only the adoption, but also the utilization of digital health technology among individuals within the US could empower patients to adopt a more proactive attitude toward health management, ultimately improving healthcare outcomes.

Individuals who use digital health technology frequently report that the information they receive from their digital health technology or mobile health apps leads them to contact a healthcare professional, especially in China.

However, individuals in the US are less likely than the 15-country average to take action by contacting a healthcare professional. This remains true among countries with comparable health care systems.

Base: Total Individuals who use digital health technology (US=668; Australia n=624; Germany n=572; UK n=519; China n=946; 15-country=10,559)



53% of US individuals who have seen a healthcare professional in the past year are tracking health indicators – which is higher than the 15-country average and countries with comparable healthcare systems – but lower than China.

Base: Total individuals who have seen a healthcare professional in the last 12 months (US=744; Australia n=810; Germany n=742; UK n=622; China n=422; 15-country=9,334)

The US has a high wearable spend per capita, and the **market is expected to grow at a high annual rate**

While China generates the most revenue in wearables, the US has the highest wearable medical device spend per capita and a higher growth and penetration rate. To increase the utilization of this technology, US individuals should be encouraged to share information received through wearables with their healthcare professionals.

$3,096 million
Revenue in the wearables segment in 2019

Annual growth rate
5.0%

User penetration
11.8%

$6.85
Wearable medical device spend per capita

China generates the most revenue across the 15 countries in the 2019 Future Health Index, for wearables, at **$4,599 million** in 2019, and is expected to see annual growth rate of **3.7%.** User penetration is **9.3%.**

*Wearable medical devices market spend per capita: **$0.19***

Australia generates **$173** million in revenue, with an annual growth rate of **2.9%** and user penetration of **8.2%.**

*Wearable medical devices market spend per capita: **$6.79***

In **Germany**, revenue for wearables is **$423** million, and expected to show annual growth of **2.4%**. User penetration is **7.7%.**

*Wearable medical devices market spend per capita: **$4.98***

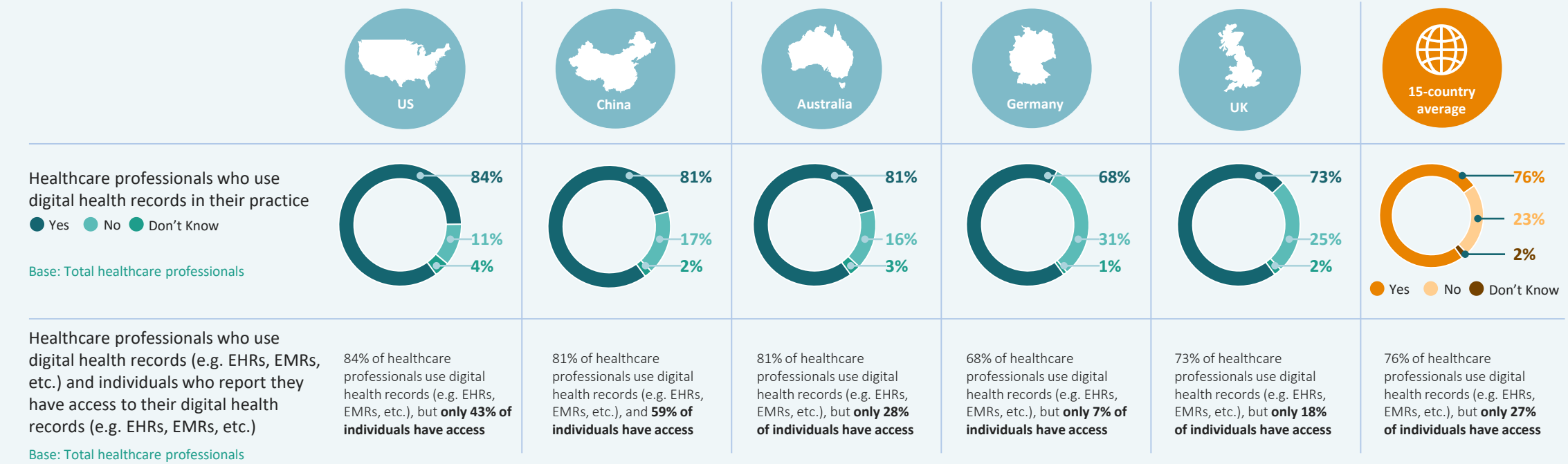
In the **UK**, revenue for wearables is **$482** million, and expected to grow annually at **3.4%**. User penetration is **9.8%** and is expected to grow to **10.4%** by 2023.

*Wearable medical devices market spend per capita: **$3.51***

Grand View Market Research – Wearable Medical Devices Market Report (2016)
https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?view=chart

American healthcare professionals' **use of digital health records (e.g. EHRs, EMRs, etc.) is high** – and, comparatively, so is individuals' access

The US has one of the highest adoption rates of digital health records (e.g. EHRs, EMRs, etc.) among healthcare professionals. While China has high adoption rates of digital health records (e.g. EHRs, EMRs, etc.) among both healthcare professionals and individuals, its investment in digital health records (e.g. EHRs, EMRs, etc.) lags behind that of other countries.



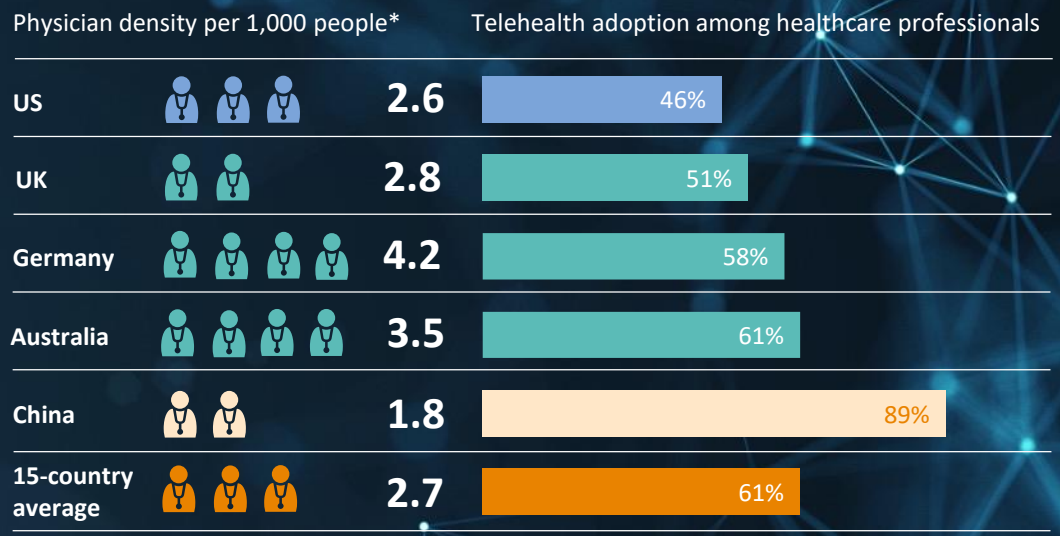
Grand View Market Research. (2016). Electronic Health Records Market Report.
http://apps.who.int/gho/data/view.main.HS07v

^Does not include Poland

The US **lags behind in telehealth adoption** among both healthcare professionals and individuals

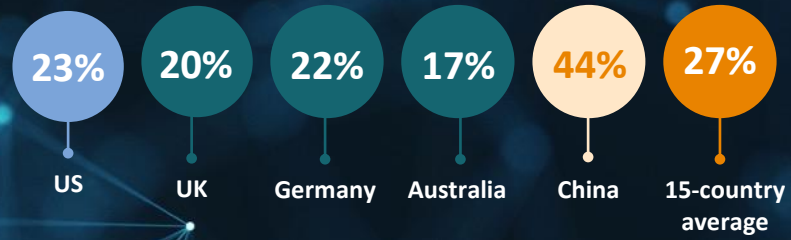
Through our research we found that, in many cases, telehealth adoption is higher among healthcare professionals in countries with low physician density, perhaps due to a demand for an alternative solution.

Healthcare professionals in the US are on par with the 15-country average when it comes to telehealth adoption. US individuals are still hesitant to use telehealth technology to address access/availability challenges, as only a fifth (23%) are willing to substitute face-to-face interaction with healthcare professionals with remote consultations via digital channels for non-urgent care.



Base: Total healthcare professionals

Individuals in China 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.** The US and countries with comparable healthcare systems, however, fall behind the 15-country average.



Base: Total individuals

23% of US individuals say they would **prefer a consultation with their doctor remotely for non-urgent care.** These individuals are likely to be **younger** and living in **urban** or **suburban** areas. Many of these individuals **already use health technology** or mobile health apps, suggesting they may be more comfortable with using health technology.

*Based on 2014-2016 data, depending on which is available per country

Aligning investment and usage of **AI**

The US is behind the 15-country average and countries like Germany and China in use of AI technologies among healthcare professionals. However, the US has the highest spend of AI in healthcare for preliminary diagnosis per capita, at $0.06 while China's spend is $0.002 per capita.

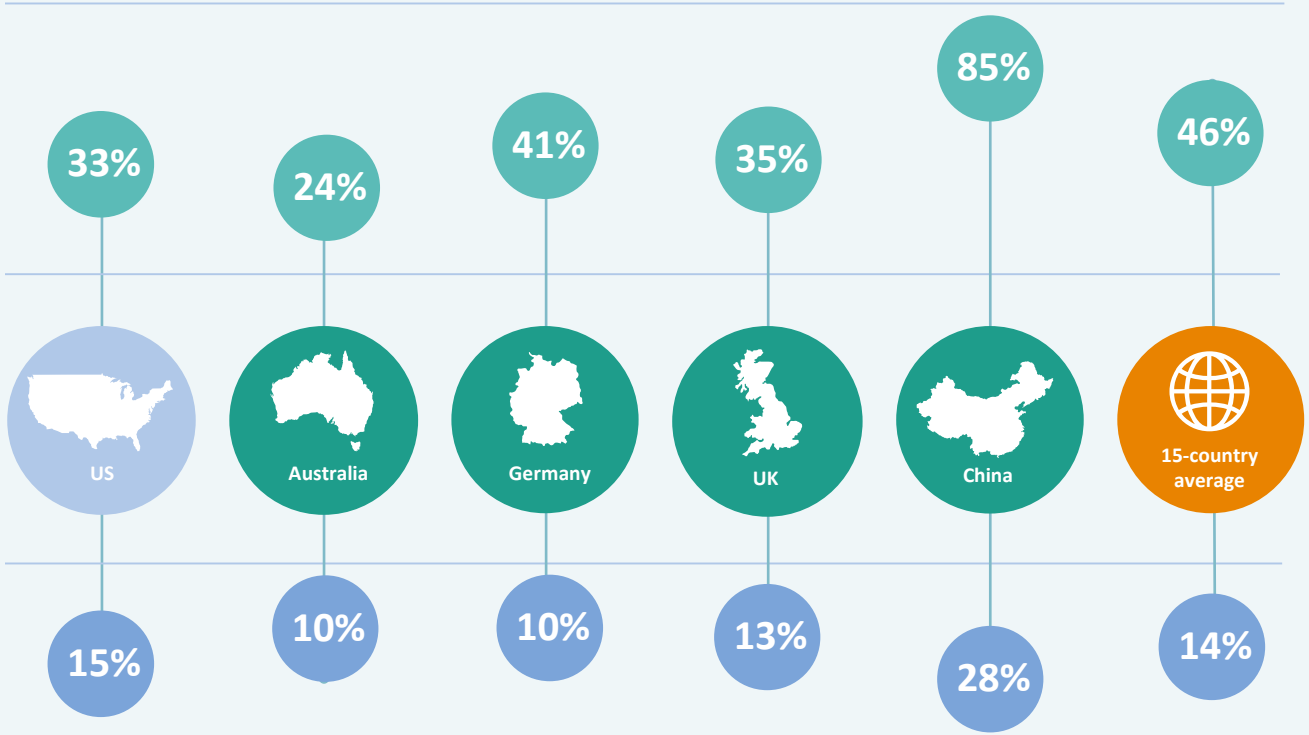
Overall, China has led the share of global investment and financing in the field of AI between 2013 and Q1 2018 with **60%** of the global total, followed by the **US (29%).** This could explain why the country is leading in AI use among healthcare professionals.*

The US falls behind the 15-country average and forerunner China as it relates to healthcare professionals who already use AI technologies in their healthcare practice.

Base: Total healthcare professionals

However, American healthcare professionals are less concerned than peers in China that new advancements in healthcare technology, such as AI or telehealth will threaten their job.

Base: Total healthcare professionals



Allied Market Research – Healthcare Artificial Intelligence Market Report (2016)
https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?view=chart

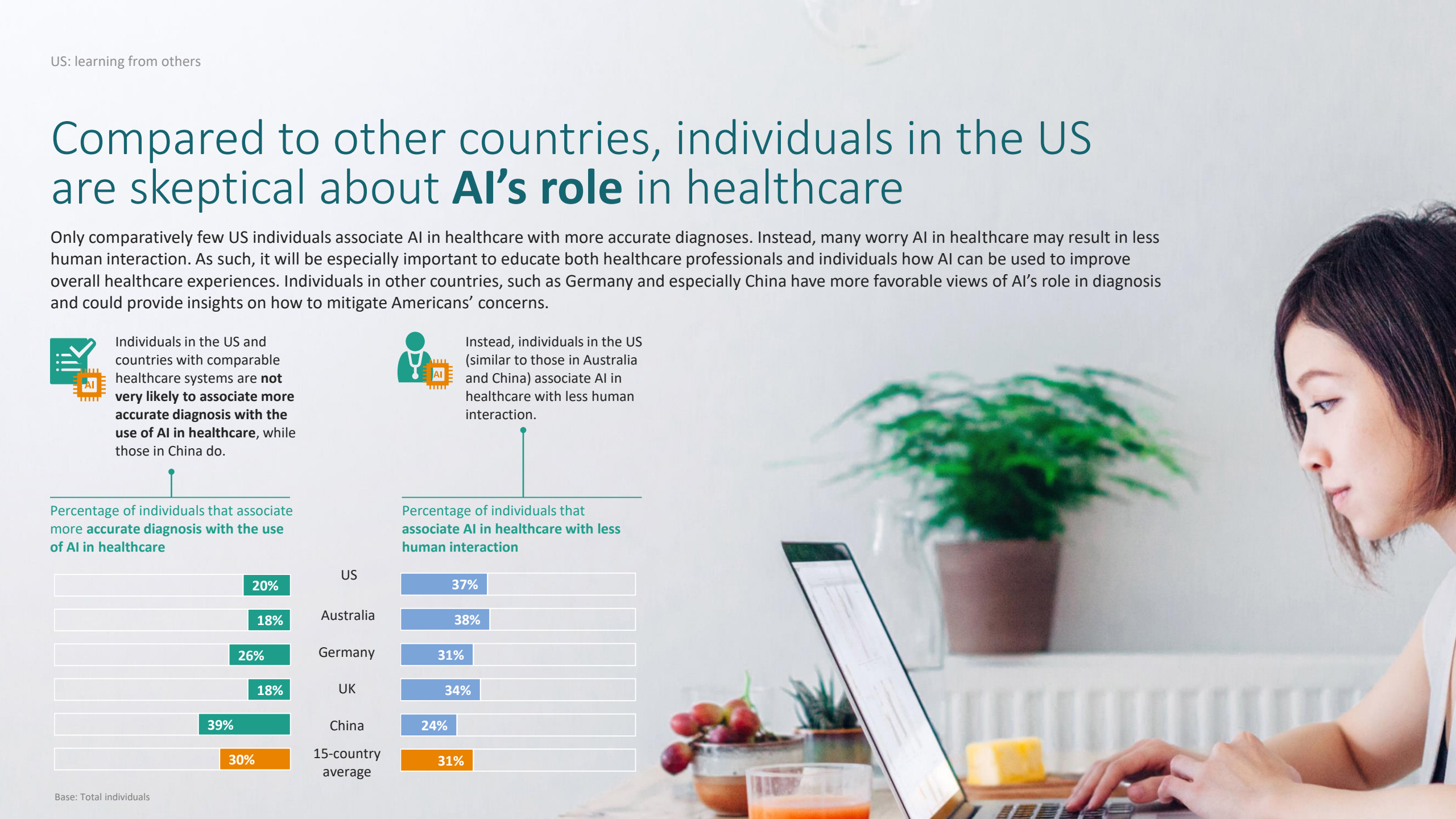
*https://www.statista.com/statistics/941446/ai-investment-and-funding-share-by-country/

Compared to other countries, individuals in the US are skeptical about **AI's role** in healthcare

Only comparatively few US individuals associate AI in healthcare with more accurate diagnoses. Instead, many worry AI in healthcare may result in less human interaction. As such, it will be especially important to educate both healthcare professionals and individuals how AI can be used to improve overall healthcare experiences. Individuals in other countries, such as Germany and especially China have more favorable views of AI's role in diagnosis and could provide insights on how to mitigate Americans' concerns.

Individuals in the US and countries with comparable healthcare systems are **not very likely to associate more accurate diagnosis with the use of AI in healthcare**, while those in China do.

Instead, individuals in the US (similar to those in Australia and China) associate AI in healthcare with less human interaction.

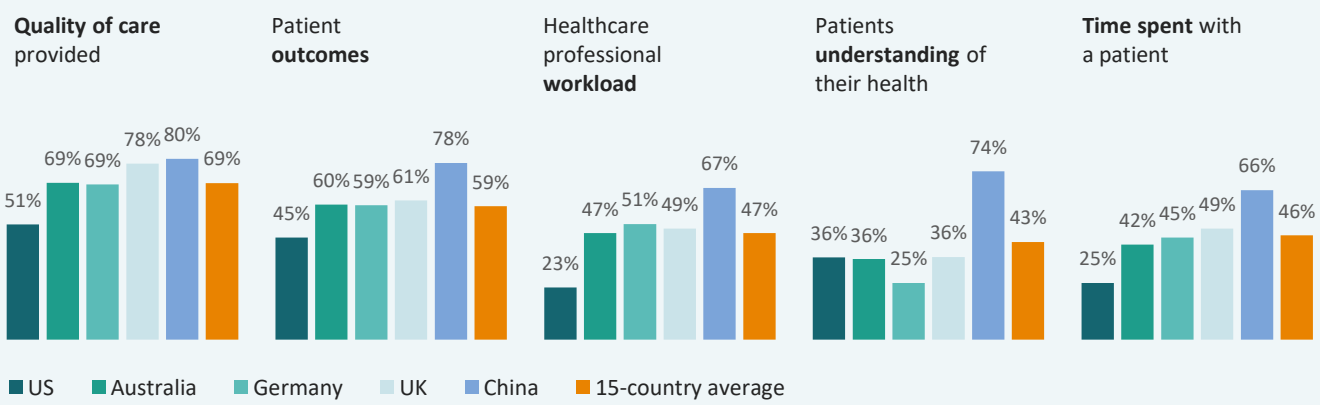


Base: Total individuals

Healthcare professionals – becoming true **digital collaborators**

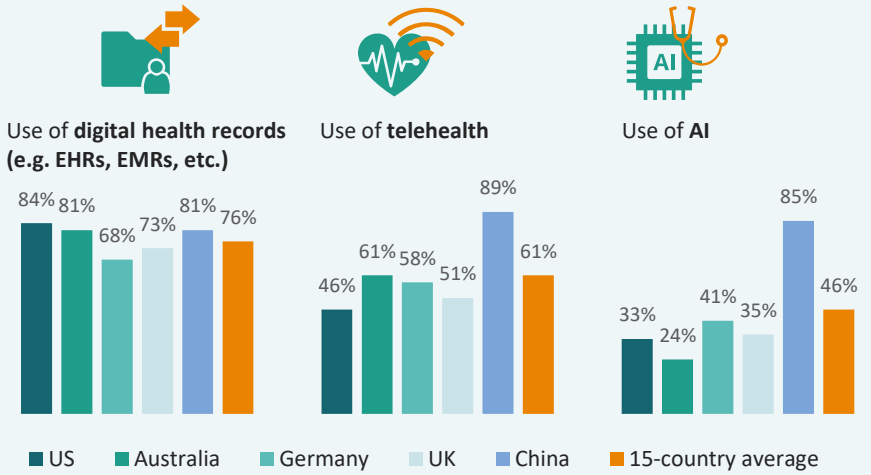
Healthcare professionals that have brought digital health technology into their ways of working are seeing a **positive impact** when it comes to how they and their patients experience healthcare. Notably, in the US, healthcare professionals are adopting the use of digital health records (e.g. EHRs, EMRs, etc.) at a higher rate than the 15-country average and are on-par with Chinese healthcare professionals. When adopting digital health records (e.g. EHRs, EMRs, etc.), healthcare professionals are realizing the positive impact it has, though at a slower rate than other countries. In contrast, the US lags behind other countries in the adoption and use of telehealth and AI technologies.

Healthcare professionals who use digital health records (e.g. EHRs, EMRs, etc.) in their practice, for example, report that the technology had a **positive impact** on:



Base: Total healthcare professionals who use digital health records (e.g. EHRs, EMRs, etc.) in their practice (US n=171; China n=163; Australia n=166; Germany n=140; UK n=148; 15-country average n=2,303)

Percentage of healthcare professionals using digital health technology in their **hospital/practice:**



Base: Total healthcare professionals

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 organizations is only collected and/or stored by those who have authorized access.

Data security: Protecting data against unauthorized 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 (e.g. EHRs, EMRs, etc.) 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 FHI 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 FHI 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.

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
- Improved staff experience
- Lower cost of care

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 specializations.

[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

Survey methodology

2019 Data

In partnership with IPSOS and SERMO, independent global market research firms, the surveys were fielded from March 4 to May 19, 2019 in 15 countries (Australia, Brazil, China, France, Germany, India, Italy, The Netherlands, Russia, Saudi Arabia, Singapore, South Africa, Poland, U.K. and U.S.) in their native language. The survey was conducted online and offline (as relevant to the needs of each market) with a sample size of 1,000 per market for the general population and 200 per market 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 markets.

The total sample from the survey includes:

- **3,194 healthcare professionals**[2] (defined as those who work in healthcare as a doctor, surgeon, nurse practitioner, registered nurse, licensed practical nurse or nurse across a variety of specializations)
- **15,114 individuals**[3] (representative of each country's respective adult population).
- **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 of +/- 1.7 percentage points.

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

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.

	Individuals (General Population)			Healthcare Professionals		
	Unweighted Sample Size (n=)	Margin of Error (percentage points)	Interview methodology	Unweighted Sample Size (n=)	Margin of Error (percentage points)	Interview methodology
15-country total	15,114	+/- 0.8	Online and offline	3,194	+/-1.7	Online
United States	1,003	+/-3.1	Online	203	+/-6.9	Online
United States (with oversample)	-	-	-	278	+/- 5.9%	Online
European countries*	7,031	+/-1.2	Online and offline	1,430	+/-2.6	Online

Local Market 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 the Netherlands, this included age, gender, rural/urban, region, Income 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, including European countries.

[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 market. However, this is estimated since robust data is not available on the number of healthcare professionals and specialty mixes in each country surveyed.

*Note: European countries = France, Germany, Italy, the Netherlands, Poland, Russia and the UK

Methodology

Third party data

Title	Source	Link
Wearables: China	Statista (2018)	https://www.statista.com/outlook/319/117/wearables/china
Wearables: India	Statista (2018)	https://www.statista.com/outlook/319/119/wearables/india
Wearables: Russia	Statista (2018)	https://www.statista.com/outlook/319/149/wearables/russia
Wearables: Saudi Arabia	Statista (2018)	https://www.statista.com/outlook/319/110/wearables/saudi-arabia
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
Artificial Intelligence (AI): Healthcare's New Nervous System	Accenture, 2017	https://www.accenture.com/us-en/insight-artificial-intelligence-healthcare
Estimating the Attributable Cost of Physician Burnout in the United States	Han S. et. al., 2019, published in the Annals of Internal Medicine	https://annals.org/aim/article-abstract/2734784/estimating-attributable-cost-physician-burnout-united-states
Artificial Intelligence in Healthcare Market by Application - Preliminary Diagnosis, 2016 ($Million)	Allied Market Research: Healthcare Artificial Intelligence Market Report, 2016	
Global Wearable Medical Devices Market, by Region/Country 2016 (USD Millions)	Grand View Market Research: Wearable Medical Devices Market Report, 2016	
Global Electronic Health Record Market, by End-Use - Hospital use EHRs 2016 (USD Million)	Grand View Market Research: Electronic Health Records Market Report, 2016	
GDP (Current US$)	The World Bank, 2019	https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?view=chart

www.philips.com/futurehealthindex-2019