future health index 2023

Global report

Taking healthcare everywhere

Addressing staff shortages and patient needs with new care delivery models

The Future Health Index is commissioned by Philips

Contents

Research premise

The Future Health Index analyzes the priorities and perspectives of healthcare leaders and younger healthcare professionals. Now in its eighth year, it is the largest global survey of its kind, based on proprietary research conducted in 14 countries.

This year's report explores how healthcare leaders and younger healthcare professionals view the role of new care delivery models, which integrate in-person and virtual care within and beyond hospital walls.

Responses from almost **3,000** healthcare leaders and younger healthcare professionals

Across **14** countries

Countries included in the research

Australia
Brazil
China
Germany
India
Indonesia
Italy
Japan
Netherlands
Poland
Saudi Arabia
Singapore
South Africa
United States

Healthcare leaders are C-suite or senior executive decision makers/influencers working in a hospital, medical practice, imaging center/office-based lab, ambulatory center or urgent care facility.
Younger healthcare professionals are defined as those aged between 18 and 40 who have completed their first medical/nursing degree and are working as a healthcare professional in a clinician role (all specializations, except psychiatry/dental care).

Foreword

Fast-tracked by the pandemic, the past three years have given us a glimpse of the future of healthcare delivery: one that extends beyond hospital walls into the home and the community, with digital technology connecting care across settings. There is no going back now. This year's Future Health Index shows how healthcare leaders and younger healthcare professionals are aligned in their vision to innovate new care delivery models that meet patients where they are.

Healthcare leaders around the world are challenged with maintaining quality care through staff shortages, while financial pressures add to the strain. Meanwhile, patient expectations are also different from what they were pre-pandemic. As digital transformation has continued to accelerate in every aspect of our lives, from how we buy to how we work and learn, our best and most convenient experience anywhere is now what we expect *everywhere* – including in healthcare.

Healthcare leaders recognize that optimizing current ways of working will only get them so far. A new paradigm of care delivery is needed. The 2023 Future Health Index report offers clues to what that will look like. Investments in AI and virtual care continue to be on the rise, showing commitment from healthcare leaders to lean into the potential of digital technology to improve efficiencies, experiences, and outcomes. At the same time, they are looking to expand care delivery into lower-cost settings outside the hospital. Or, as I like to say, we are moving to a future of "your care, your way", where patients will benefit from a wider range of virtual and in-person access points.

Younger healthcare professionals welcome this shift. In fact, as this year's survey findings show, they are asking for it. Younger healthcare professionals are keen to be at the forefront of digital innovation. Just like healthcare leaders, they envision a more personalized and connected approach to healthcare, orchestrated around the patient's needs, and with digital technologies such as AI supporting them in their day-to-day work.

But both groups also realize they cannot get there alone. Even more so than in previous Future Health Index reports, partnerships emerged as a key theme this year. Both healthcare leaders and younger healthcare professionals say that closer collaboration between providers is needed to deliver integrated patient care across settings. They also see a key role for data/IT providers and health technology companies, to help liberate data and turn it into meaningful insights when and where they are needed. And finally, they are turning to partners for help in improving environmental sustainability – an area where healthcare has much to gain.

I invite you to explore the survey findings in more detail in this report and reflect on what they mean for your organization. Where will you take healthcare next? I hope that, as you set out on that journey, you find inspiration from both current and future healthcare leaders.

"When I think of the future of healthcare delivery, I think of 'your care, your way'.

Shez Partovi
Chief Innovation & Strategy Officer and
Business Leader of Enterprise Informatics at Philips

Key findings at a glance

Three main themes emerge from the 2023 Future Health Index, showing how healthcare systems are innovating care delivery to meet evolving patient needs with increasingly strained resources. Each of these themes is explored in more detail in the following chapters.

Chapter 1

Tackling staff shortages through digital innovation

Faced with acute workforce shortages and growing financial pressures, healthcare leaders are seeking to streamline processes for improved efficiencies. They are ramping up their investments in automation and AI to alleviate pressure on staff and to ultimately empower them with more predictive insights for clinical decision support. This is welcomed by younger healthcare professionals, who are also eager to embrace new digital technology and consider it a key factor in choosing where to work.

Chapter 2

Bringing healthcare closer to the patient

Healthcare leaders and younger healthcare professionals share a common vision for a more distributed healthcare system that meets patients where they are. Virtual care continues to be on the rise, expanding the reach of intensive and critical care beyond hospital walls. At the same time, both surveyed groups also envision further growth of ambulatory and community-based care services to help improve patient access, convenience and health outcomes.

Chapter 3

Partnering across the healthcare ecosystem

As payers are expecting more cost-effective care that delivers better outcomes, healthcare leaders are partnering across the healthcare ecosystem to overcome technology barriers, break down data silos, and deliver more integrated care that improves patient outcomes. In addition, they see a role for partnerships in furthering environmental sustainability in healthcare – a topic that is also top of mind for an eco-conscious generation of younger healthcare professionals.

1

Tackling staff shortages through digital innovation

Healthcare leaders seek new efficiencies

Alleviating pressure on staff

As workforce shortages continue to strain hospital capacity around the world, healthcare leaders are rethinking how and where they deliver care. This year's survey revealed that more than half of them (56%) are either using or planning to use digital health technology solutions to reduce the impact of workforce shortages (see Figure 1).

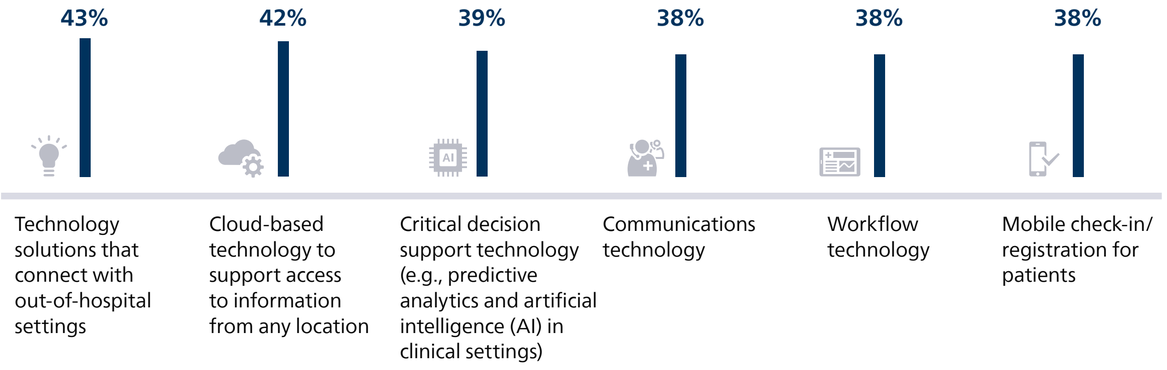
Figure 1:

of healthcare leaders are using or planning to use digital health technology solutions to help reduce the impact of workforce shortages

Top of their list are digital health technology solutions that connect with out-of-hospital settings (selected by 43% of healthcare leaders), closely followed by cloud-based technology to support access to information from any location (42%) (see Figure 2). Their vision for the future is clear: healthcare systems will no longer be bound to hospital facilities, but leverage resources when and where they are needed the most.

To reduce the impact of workforce shortages, healthcare leaders are also using or planning to use critical decision support technology (39%). This was a top choice especially among cardiology leaders (50%) and radiology leaders (48%), indicating that these specialists in particular recognize the potential of predictive analytics and AI to augment the capabilities of healthcare professionals. In addition, healthcare leaders are seeking to mitigate staff shortages through communications technology (38%), workflow technology (38%), and mobile check-in or registration for patients (38%) – all pointing to an opportunity for digital innovation to alleviate pressure on staff while improving the patient experience.

Figure 2: Technologies that healthcare leaders are using or planning to use to reduce the impact of workforce shortages

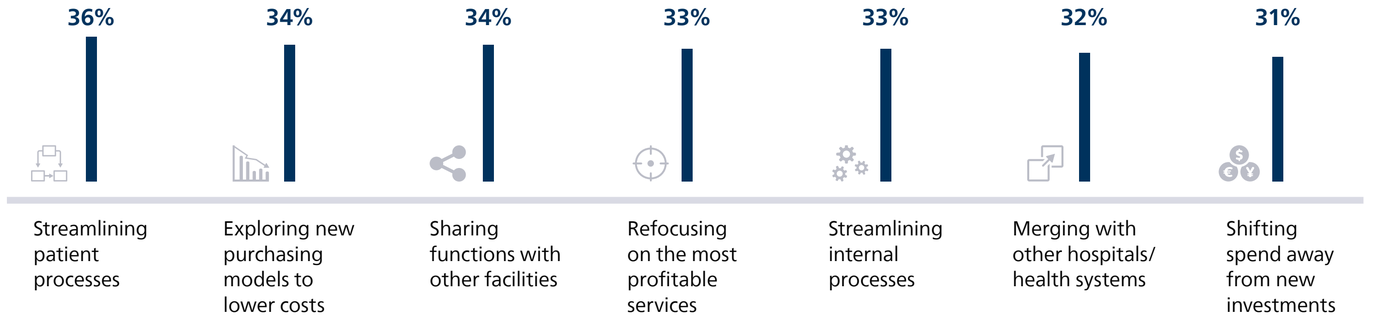


Streamlining workflows

Almost all healthcare leaders (96%) surveyed are facing financial pressures – a situation that is unlikely to improve soon in the current inflationary environment. This is giving a further impetus to workflow automation as healthcare leaders seek to do more with less. Unsurprisingly, 86% of surveyed leaders are taking actions to reduce the impact of financial pressures. Their most common solution (selected by 36%) is to streamline patient processes, for example through automated appointment bookings. Also ranking high on their list is streamlining internal processes, for example by automating administrative tasks (33%) (see Figure 3).

Beyond technology, healthcare leaders are also looking at other solutions to mitigate financial pressures. These include exploring new purchasing models to lower costs (34%), sharing functions with other facilities (34%) and refocusing their hospital or facility on the most profitable services (33%). Resuming "business as usual" in a post-pandemic era is no longer an option – healthcare leaders are forced to reimagine their role in the wider ecosystem; a theme we will return to in Chapter 3.

Figure 3: Solutions used by healthcare leaders who are taking action to mitigate financial pressure



Investments in AI continue to ramp up

Following its explosive growth in recent years, artificial intelligence (AI) continues to be a key area of future investment for healthcare leaders. 83% of healthcare leaders are planning to invest in AI in the next three years, up from 74% in 2021.

AI for clinical decision support

Compared to the findings from the Future Health Index 2021 report, planned investments in AI over the next three years show the biggest increase for clinical decision support (from 24% in 2021 to 39% in 2023) (see Figure 4). This includes AI used for diagnosis or treatment recommendations, early warning scores, and automatic disease detection. Radiology leaders in particular plan to ramp up their future investments in AI for clinical decision support, from 27% in 2021 to 50% in 2023; followed by informatics leaders (from 24% to 39%) and cardiology leaders (from 29% to 38%).

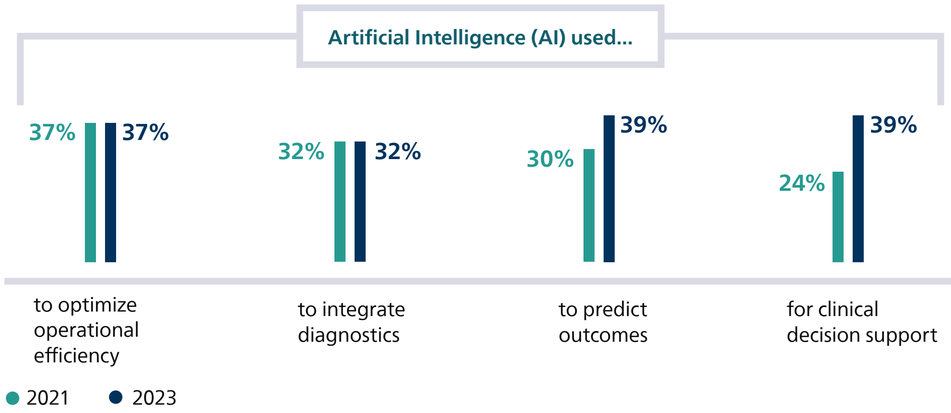
To a lesser extent, planned investments in AI for predicting outcomes also increased (from 30% in 2021 to 39% in 2023, across all healthcare leaders). One such application is to compare a patient to similar patients to better predict how they will respond to certain treatment plans.

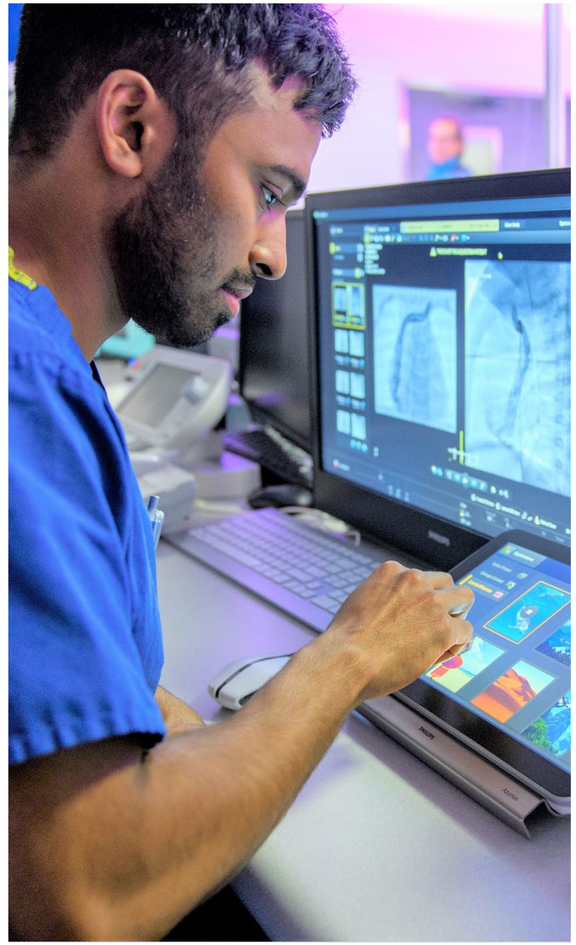
AI for operational and clinical efficiencies

The percentage of healthcare leaders planning to invest in AI for operational efficiency (37%) remains steady from 2021 to 2023. Examples range from AI used for automating required documentation to AI that can help schedule patients, staff and tasks. These applications will continue to play a vital role in enabling more efficient use of resources to mitigate the impact of workforce shortages.

Planned investments in AI for integrating diagnostic information (such as imaging, pathology, and a patient's clinical history) also remain constant, at 32%. Recent clinical studies have shown its potential to save valuable time in diagnostic decision-making, while supporting the clinician experience, for example in cancer care[1].

Figure 4: How planned investments in AI three years from now have evolved between 2021 and 2023, according to healthcare leaders





Digital innovation essential for younger healthcare professionals

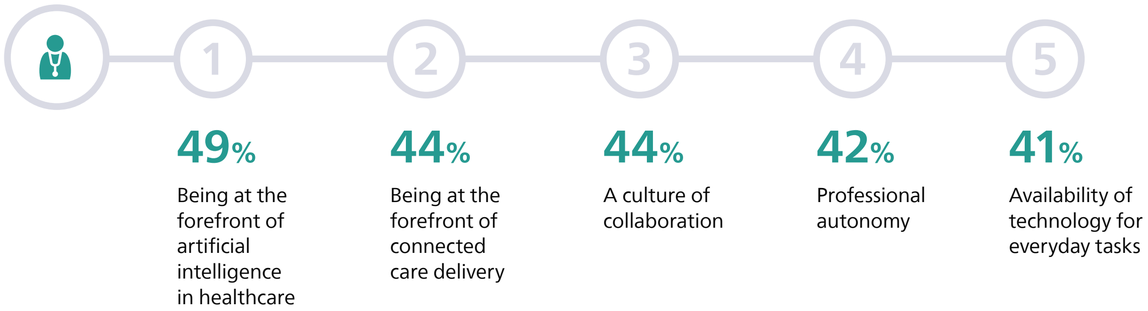
Attracting and retaining talent

Younger healthcare professionals surveyed in this year's research welcome the increased investments in AI and other digital innovations. In fact, they are explicitly asking for it.

Being at the forefront of AI in healthcare emerged as top selected consideration for younger healthcare professionals in choosing a hospital or practice to work in (selected by 49%) (see Figure 5). Leading the way in connected care delivery is also important to them (44%) – indicating a receptivity to new care delivery models that connect different care settings. On a more basic level, they evaluate potential employers on the availability of technology for everyday tasks, such as tablets for notetaking or secure patient portals (41%).

Taken together, these findings paint a picture of a generation that is eager to embrace smart and connected technologies to help deliver better patient care. This suggests that digital innovation can be a powerful tool in attracting and retaining younger talent as healthcare leaders increasingly compete for scarce talent with other sectors, and thereby accelerate digital transformation.

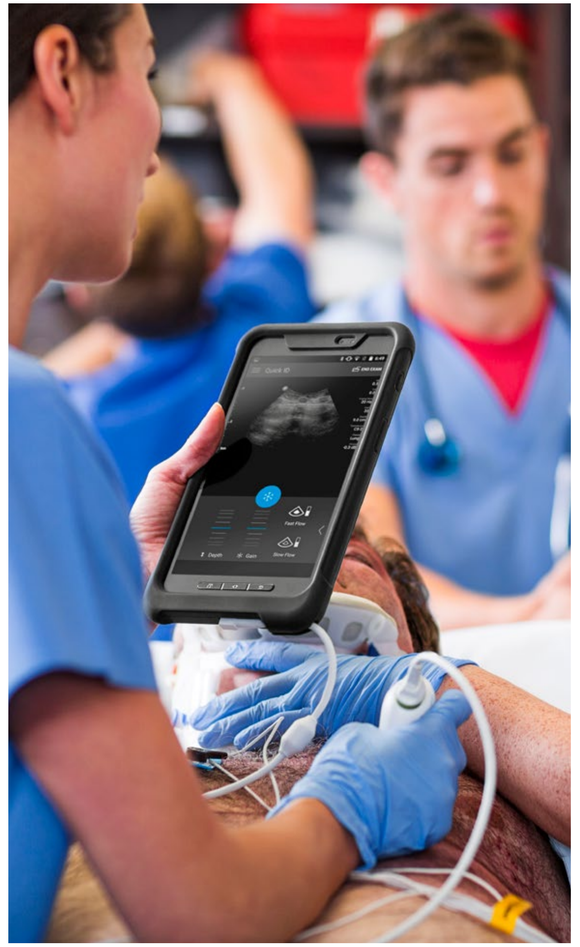
Figure 5: Top selected factors in the choice of workplace for younger healthcare professionals



A culture of collaboration

Also important to younger healthcare professionals in choosing where to work is having a culture of collaboration (44%), with different specialties working together, and professional autonomy (42%), giving them flexibility in developing care plans for patients. This calls on healthcare leaders to create a culture where younger healthcare professionals feel empowered and connected.

When asked what would make them feel most empowered to improve patient care, younger healthcare professionals cited, amongst others, better training on new technologies (38%) – illustrating the need for continuous education to help them get the most out of digital innovation. They would also like more opportunity to have their voice heard (39%). This underlines the importance of involving healthcare professionals in the design and optimization of new ways of working. As other studies have highlighted, successful digital transformation requires that healthcare leaders make effective change management as much a priority as the technological aspects of digital transformation[2].



2

Bringing healthcare closer to the patient

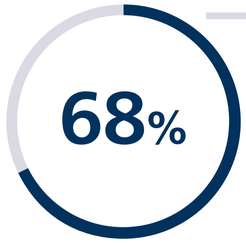
Extending care beyond hospital walls

Accelerated by the pandemic, new care delivery models that blend the physical and the virtual have redefined patients' expectations of how and where care is delivered. Last year, the Future Health Index revealed that healthcare leaders viewed extending care delivery beyond the hospital as their highest priority, after staff satisfaction and retention. In 2023, we see that trend continue.

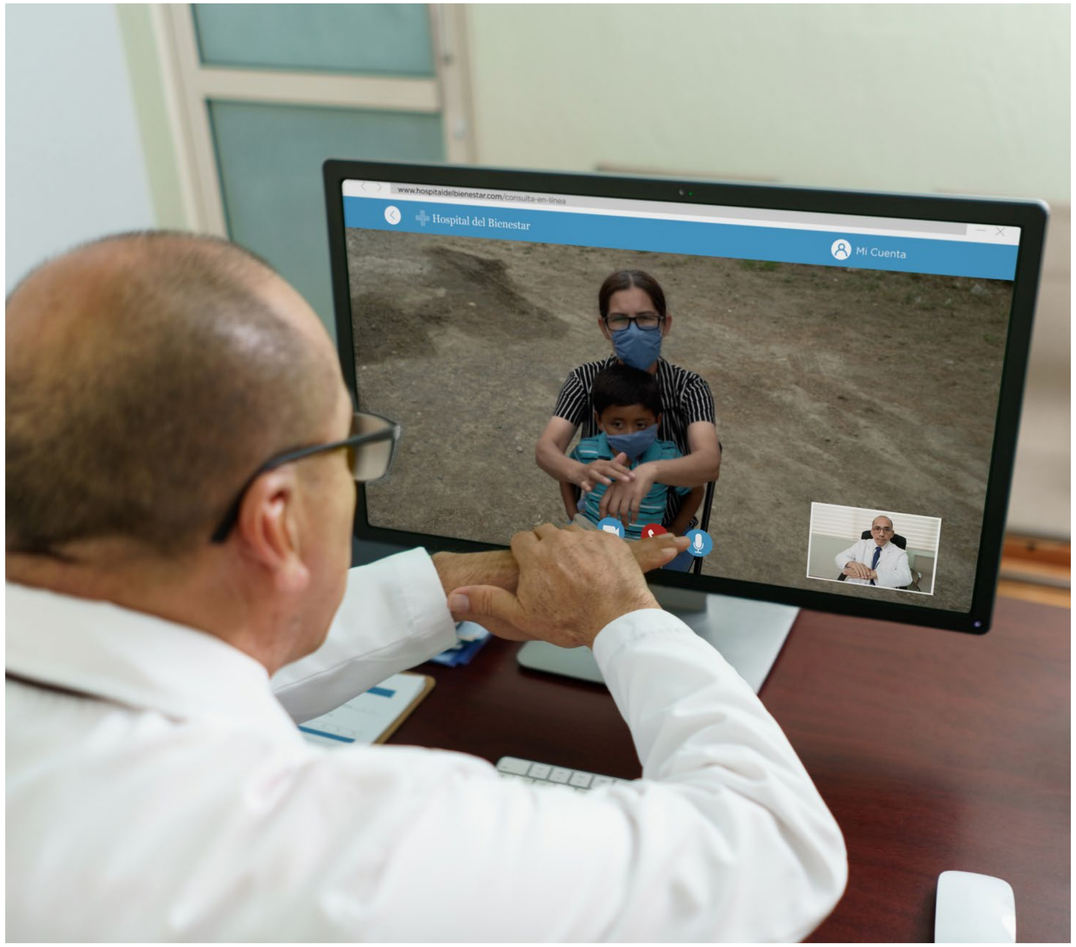
Virtual care is here to stay

Virtual care is quickly turning into a mainstay of medicine. 68% of healthcare leaders (see Figure 6) say it is among the technologies that have already had or will have the biggest impact on improving patient care in the next three years. This is reflected in how they are allocating their budgets. 54% of healthcare leaders say their hospital or facility is investing heavily in virtual care today, compared to 47% in 2022. This includes both professional-to-professional virtual care, which enables more distributed access to expertise across locations, as well as professional-to-patient virtual care, which is bringing specialist care into patients' homes.

Figure 6:



of healthcare leaders say virtual care is a technology that has had or will have the biggest impact on improving care



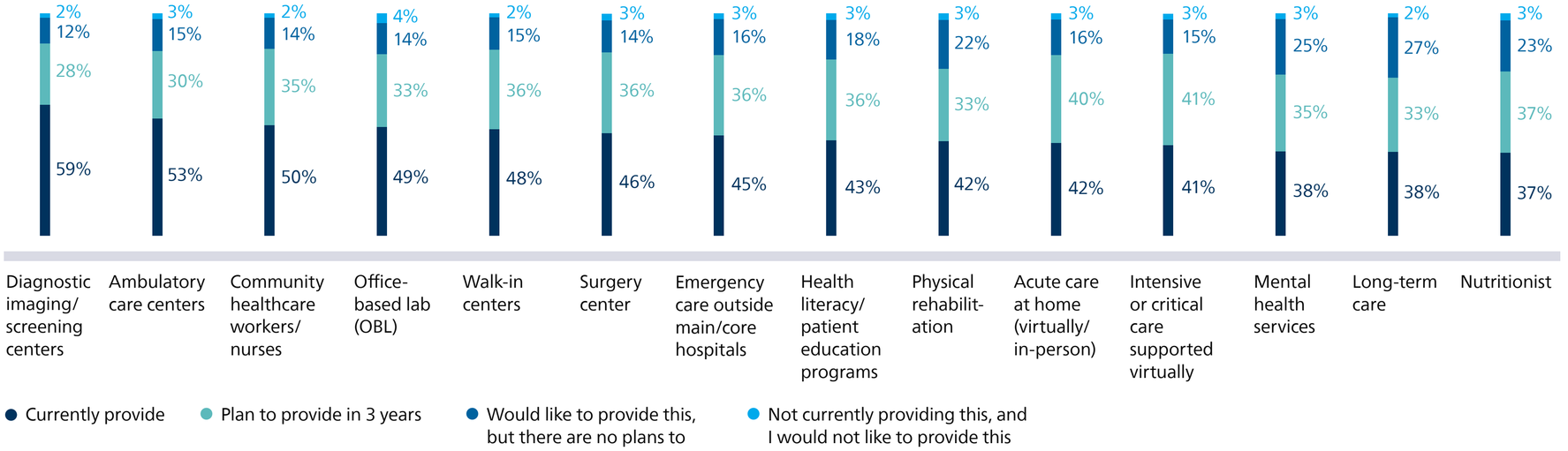
When asked more broadly where they are providing or planning to provide care in the next three years, healthcare leaders show the same appetite for virtual care. For example, 41% of healthcare leaders already provide intensive or critical care supported virtually, and another 41% plan to do so in the next three years (see Figure 7). This signals the continued adoption of tele-ICU models, which can extend critical care resources to the bedside independent of a health facility's location through centralized, remote surveillance by skilled professionals.

Expanding access to care

In conjunction with increased investments in virtual care, healthcare leaders also intend to make care available through a wider array of in-person access points. This includes surgery centers, emergency care provided outside main hospitals, and walk-in centers (all three were cited as expansion areas in the next three years by 36% of healthcare leaders).

In addition, nutritional services (37%), patient education programs (36%), community healthcare workers or nurses (35%) and mental health services (35%) are part of their plans for the next three years. This indicates that healthcare leaders are not only offering more access points closer to the patient – they are also taking a more holistic approach that considers different aspects of a patient's health.

Figure 7: Healthcare services that leaders are currently providing or planning to provide 3 years from now



Younger healthcare professionals share the same vision for more distributed and holistic healthcare delivery. Of those whose facility doesn't currently offer them, younger healthcare professionals are most likely to want ambulatory care centers (68%), walk-in centers (67%) and acute care at home, provided virtually or in person (65%).

Patient education programs (63%), community healthcare workers (62%), nutritional services (57%), and mental health services (56%) also feature on their wish list, among other services.

More effective, accessible and convenient care

Increased treatment adherence

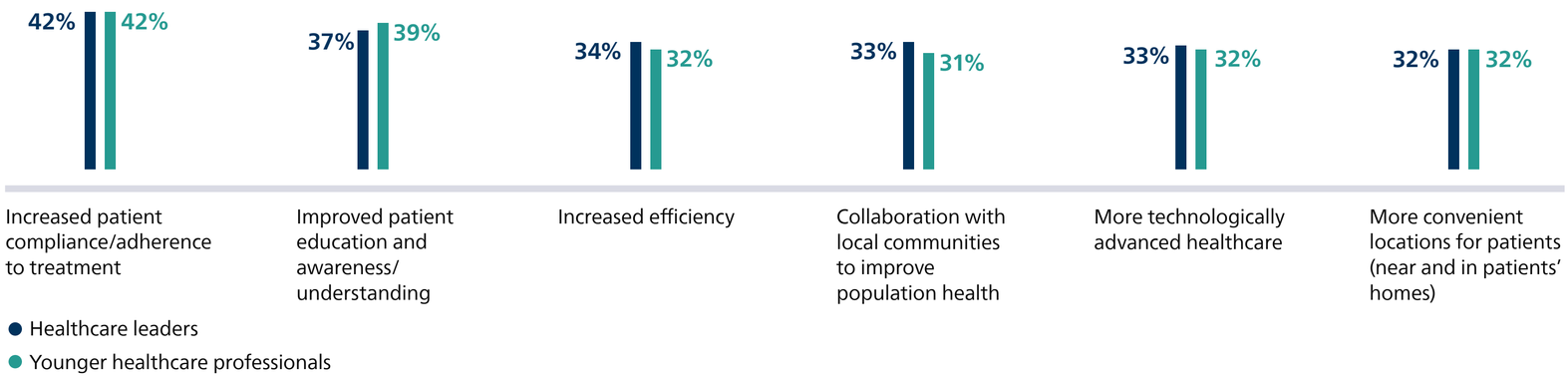
New care delivery models that integrate physical and virtual services within and beyond hospital walls have numerous benefits, according to both healthcare leaders and younger healthcare professionals (see Figure 8). Their top pick (selected by 42% of healthcare leaders and younger healthcare professionals): increased patient compliance and treatment adherence.

This dovetails with the second-highest ranking benefit for both groups: improved patient education and awareness.

Meeting patients where they are

Healthcare leaders and younger healthcare professionals see other patient benefits of new care delivery models as well. Both groups (34% of healthcare leaders and 32% of younger professionals) cite increased efficiency as an additional advantage of new care delivery models, for example because of reduced waiting times. This holds even more true in countries with geographically dispersed populations such as Australia, China and the US. In those countries, new care delivery models that connect the hospital to the home could go a long way towards improving access to care for remote communities, while alleviating some of the burden on overstretched hospital staff.

Figure 8: Healthcare leaders and younger healthcare professionals agree on the benefits of new ways to deliver care, besides patient outcomes



In addition, almost one-third (32%) of all surveyed healthcare leaders and younger healthcare professionals call out increased convenience for the patient as a benefit of new care delivery models. This is congruent with studies showing how patients have come to appreciate the convenience of telehealth after having grown accustomed to it during the pandemic[3].

The role of remote patient monitoring in treatment adherence

New care delivery models such as virtual care and remote patient monitoring can make it significantly easier for patients to follow their treatment plans. Studies show that lack of treatment adherence in patients with chronic diseases is very common, affecting as many as 40% to 50% of patients who are prescribed medications for management of chronic conditions such as diabetes or hypertension[4]. Adherence to exercise and care plans can be equally challenging for patients. AI-enabled remote patient monitoring can offer insight into health trends over time, allowing for earlier interventions while giving patients greater health awareness in between hospital visits. Research has shown this can result in measurable improvements to patient health outcomes, including reductions in blood pressure, blood glucose, and weight[5].

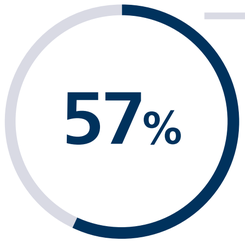
New care delivery models can also benefit environmental sustainability

Reducing carbon footprint

Besides improving outcomes and experiences for patients, healthcare leaders think that the evolution towards more distributed and virtual care is also good news for the planet. More than half of them (57%) agree that new ways to deliver care are more environmentally friendly/sustainable (see Figure 9). This percentage is even higher in countries with geographically dispersed populations such as India (78% of healthcare leaders), Japan (74%) and Australia (67%), where patients in rural communities often need to travel long distances to the nearest healthcare facility. It is also higher among early adopters of new technology (62%), indicating that these early adopters are ahead in seeing sustainability-related benefits from new care delivery models.

Indeed, the reduced need for travel and physical paperwork could help offset some of the healthcare sector's carbon footprint – which accounts for over 4% of global CO_2 emissions[6]. A recent study evidenced the link between distributed care models, particularly those involving telehealth, and reduced impact on the environment. Examining European data from 2020 and 2021, it found an average of 3.057 kg of net CO_2 emissions avoided for every digital appointment and 1.5 kg avoided for every medical report downloaded instead of being physically collected in the clinic[7].

Figure 9:



of healthcare leaders believe new models of care delivery are more environmentally sustainable

3

Partnering across the healthcare ecosystem

Relationships with payers are evolving

As a result of the emergence of new care delivery models, healthcare leaders see their relationships with payers change. Payers are expecting more cost-effective, high-quality care delivered in partnership with others across care settings.

A push for more cost-effective, integrated care delivery

Most strikingly, 42% of healthcare leaders say that payers are reducing the services they seek from them, while at the same time 34% indicate that payers are *increasing* the types of services they seek from them (see Figure 10). This dual pressure to ramp up certain services, while cutting down on others, comes against the backdrop of escalating healthcare costs that are making payers prioritize where they put their funding to achieve the greatest gain in health and economic outcomes. Increasingly, payers are incentivizing a shift from expensive hospital services to care provided in lower-cost settings such as ambulatory facilities or the home[8].

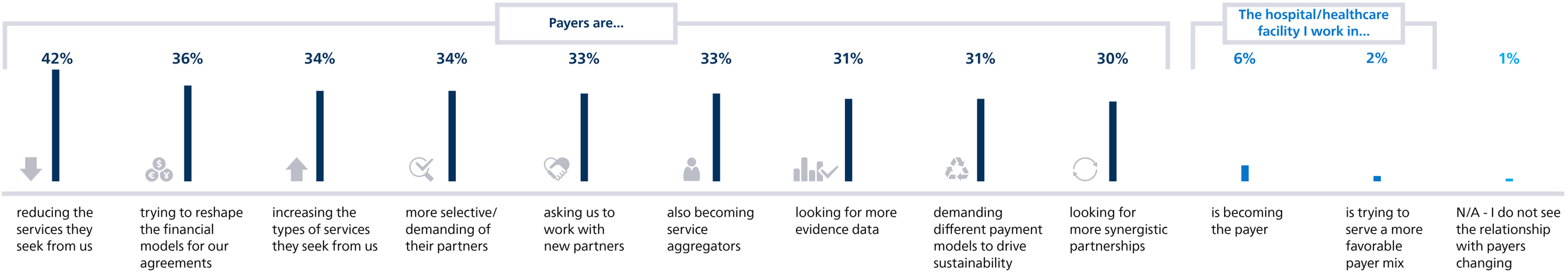
Healthcare leaders feel the need to adapt. No longer can they think of their hospital or health system in isolation. 34% of them say that payers have become more demanding of them and 33% are asked to work with new partners. This is creating a burning platform for increased collaboration across the healthcare ecosystem – for example between hospitals and diagnostic, ambulatory, primary, and community care centers[9] – to deliver more integrated care, orchestrated around the patient's needs. The importance of better regional and national coordination of care, which came into sharp focus during the pandemic in many parts of the world, ties in with this.

Payers are asking for evidence of outcomes

Payers are also looking for more evidence data, say 31% of healthcare leaders. This indicates that the shift towards high-value care, a focus area in previous editions of the Future Health Index, continues to place demands on leaders to demonstrate that the care they are delivering is having the desired outcomes for patients.

This need is felt most strongly in the US, where 49% of healthcare leaders say payers are asking for more evidence data. It adds a strong incentive to focus on providing high-quality outcomes at lower cost, in collaboration with stakeholders across the entire ecosystem.

Figure 10: How healthcare leaders see their relationship with payers change as a result of new care delivery models

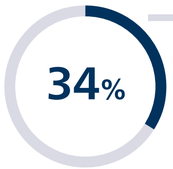


Providers are partnering across care settings

Expanding the reach of care

The contours of wider collaboration across the healthcare ecosystem are already apparent. Building partnerships outside their healthcare system is one of the most selected actions which one-third (34%) of healthcare leaders are taking to ensure that new ways of delivering care improve patient outcomes (see Figure 11). When asked which organizations they are partnering with today, healthcare leaders answered diagnostic imaging or screening centers (28%), ambulatory care centers (23%), emergency medical centers (23%), and retailers or pharmacies (22%) – all of which can bring care closer to the patient.

Figure 11:



of healthcare leaders are building partnerships outside their healthcare system to ensure that new ways of delivering care improve patient outcomes

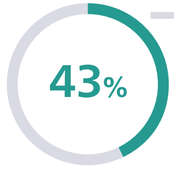
However, there is substantial variation between countries in the extent to which they are partnering with other healthcare providers. Healthcare leaders in Japan (69%) and India (63%) are most likely to partner with diagnostic imaging or screening centers, while healthcare leaders in the US (53%) and Singapore (43%) lead the way in partnering with ambulatory care centers.

Younger healthcare professionals want new partnerships

Younger healthcare professionals share the same desire to partner with other healthcare providers. In fact, it is the top-ranking action (chosen by 36%) that they would like healthcare leaders to take to ensure that new care delivery models improve patient outcomes. In addition to the partnerships mentioned above, they also express a wish for collaborating with community centers (19%), residential care homes (18%), and wellness providers (18%) three years from now – again pointing to a desire to work more collaboratively within the broader healthcare ecosystem.

When asked what would empower them most in improving patient care, closer collaboration with other organizations involved in care delivery also emerged as their top choice, selected by more than two-fifths (43%) of younger healthcare professionals (see Figure 12).

Figure 12:



of younger healthcare professionals would feel more empowered to improve patient care based on closer collaboration with other organizations involved in care delivery

Unlocking the value of data through technology partnerships

To realize their vision of delivering integrated care across a wider range of settings, healthcare leaders and younger healthcare professionals recognize the need to be able to share and interpret data in a meaningful way. That is why both groups continue to see an important role for partnering with health technology companies and data/IT providers, alongside other healthcare organizations.

Improving data sharing

More specifically, when asked which factors will determine the success of new care delivery models, healthcare leaders and younger healthcare professionals were united in calling out interoperability across systems and platforms (28% across both groups combined), availability of appropriate technology and technology infrastructure (28%), and timely and smart data sharing (27%) (see Figure 13).

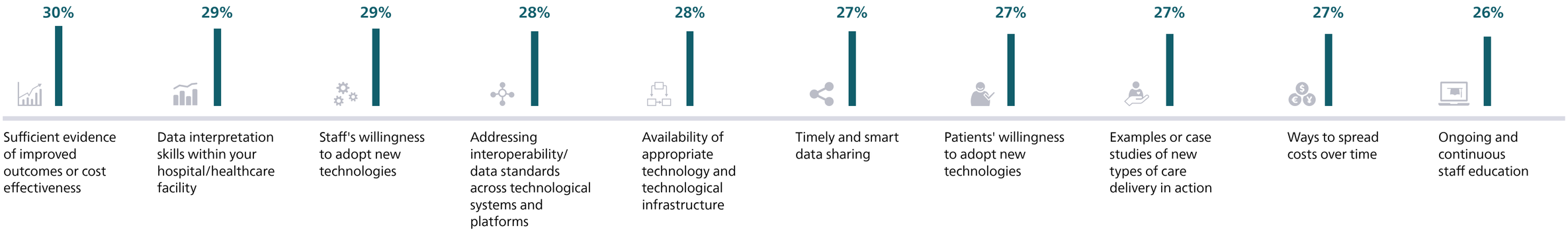
Echoing the importance of educating and empowering staff, as discussed in Chapter 1, healthcare leaders and younger healthcare professionals also believe that new care delivery models will require the right data interpretation skills within their hospital or healthcare facility (29%), supported by ongoing staff education (26%).

Providers want evidence and financial flexibility

Ultimately, though, when it comes to the impact and adoption of new care delivery models, evidence is needed to convince both payers and providers. Edging out all other considerations, 30% of healthcare leaders and younger healthcare professionals want proof of improved outcomes or cost effectiveness. In addition, 27% of them see examples or case studies of new types of care delivery in action as a success factor.

From a financial perspective, having ways to spread costs over time was also cited as a success factor for new care delivery models (27%). The growing shift from traditional, transactional purchase models to "as-a-service" business models in healthcare could help offer this financial flexibility, while creating a shared focus on improving outcomes between healthcare providers and their technology partners.

Figure 13: Success factors for providing new ways to deliver care, among both healthcare leaders and younger healthcare professionals combined



The power of partnerships in greening healthcare

Competing priorities hinder green initiatives

The 2021 and 2022 editions of the Future Health Index saw a sharp increase in the prioritization of environmental sustainability by healthcare leaders surveyed. This year's findings indicate that, while almost all healthcare leaders (more than 99%) are taking some form of initiative to address environmental sustainabilility, many struggle to balance it with other priorities. When asked what challenges healthcare leaders are facing in implementing environmental sustainability initiatives, 'lower priority compared to other goals' was their most often cited answer (selected by 36%) (see Figure 14).

Other factors that are holding healthcare leaders back in implementing environmental sustainability initiatives include lack of standardization across the healthcare industry (34%), lack of specific regulation (33%), no means of measuring improvements or success (33%) and lack of an implementation strategy (32%).

Next generation seeks out green employers

For many younger healthcare professionals, however, investing in environmental sustainability is increasingly top of mind. In fact, it has become an important consideration in where to work. More than one-third (35%) of them are looking for employers who have strong sustainability policies in place (see Figure 15).

For healthcare leaders seeking to attract and retain young talent in a fiercely competitive market, this means that making a concerted effort to reduce their environmental impact is not just the right thing to do. It is also key in appealing to an eco-conscious workforce.

Figure 14: Barriers to implementing environmental sustainability initatives according to healthcare leaders

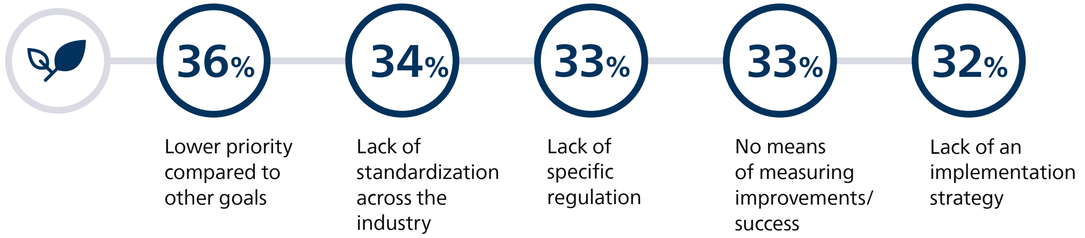
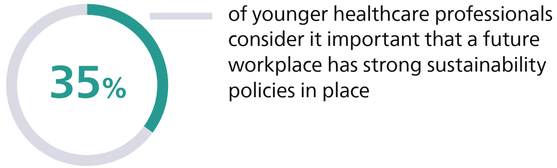
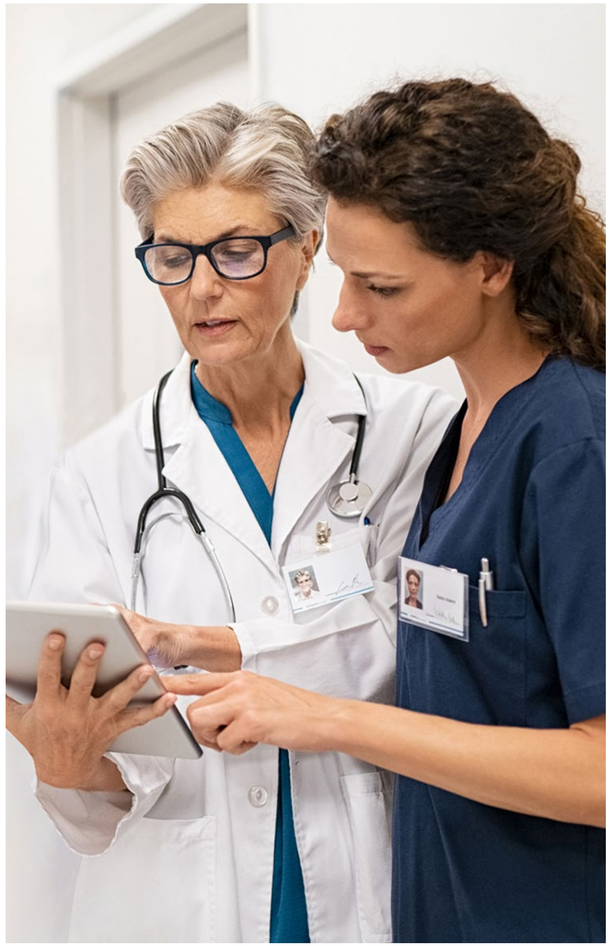


Figure 15:





Partnering to overcome barriers

To overcome challenges in implementing environmental sustainability initiatives, healthcare leaders believe it is important to create a business case (38%) and set ambitious targets that allow for measurable progress (36%). They also see value in best practice sharing with peers (37%) as well as working with a third party (35%) and/or recruiting more staff with specialist skills (34%) (see Figure 16).

Who, then, should take the lead in developing sustainability standards in healthcare? Both healthcare leaders and younger healthcare professionals are most likely to rank governments as those who should be primarily responsible (see Figure 17). They also see a role to play for individual hospitals or health systems, medical technology companies, industry associations, and medical NGOs or charities – pointing to an opportunity for wider ecosystem collaboration in protecting the health of our planet as well.

Figure 16: Ways in which healthcare leaders plan to overcome these barriers

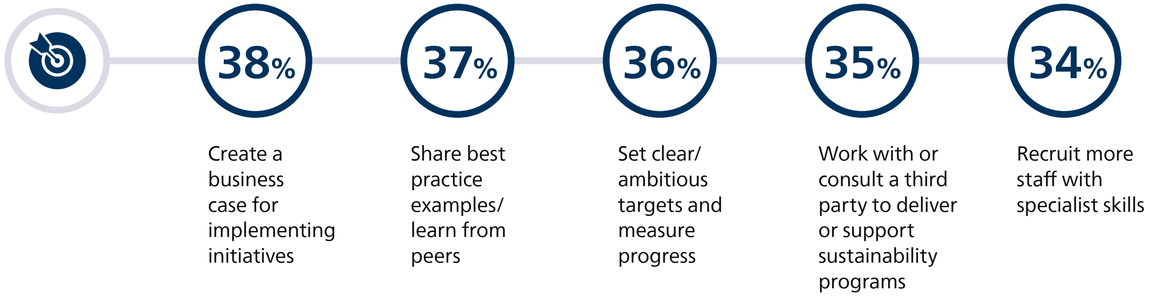
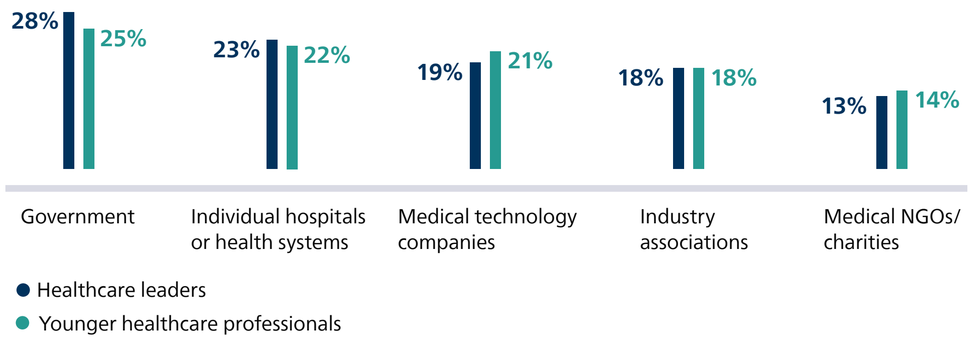


Figure 17: Leaders and younger healthcare professionals think governments should be most responsible for creating sustainability standards (ranked 1st)



Ecosystem collaboration key to reducing environmental impact

With the established link between human health and environmental health, many in the healthcare industry agree that it is time to extend the principle of ***First, do no harm*** – the very foundation of healthcare – to the planet.

Fully decarbonizing healthcare includes taking an end-to-end view of the entire value chain. This means actors across the healthcare ecosystem – care providers, health tech companies, pharma, suppliers, and others – collaborating to drive sustainable ways of working.

Supply chains drive over half of healthcare emissions[10]. One way health systems can magnify their impact is to select suppliers who have committed to science-based targets for carbon reduction. By supporting and incentivizing suppliers to adopt such targets, organizations can achieve even greater impact than by simply lowering emissions from their own operations.

Some hospitals are already engaged in innovative collaborations to find less carbon-intensive solutions. Together with its suppliers, Stanford University Medical Center eliminated 1,200 tons of greenhouse gas emissions by replacing the anesthesia drug desflurane with much more climate-friendly alternatives such as sevoflurane[11].

Conclusion

Building a collaborative healthcare ecosystem

Healthcare leaders and younger healthcare professionals share the same vision for the future: one in which healthcare is delivered in more connected, convenient, and sustainable ways across care settings, enabled by digital technology. Yet to fully realize this vision, both groups recognize that greater collaboration is essential, both within and beyond their organization.

As this year's Future Health Index shows, collaboration is taking many different forms. Healthcare providers are partnering with other organizations across the healthcare value chain to offer more personalized and integrated care. They are turning to health technology companies and data/IT providers to alleviate pressure on staff with automation, AI, and data-driven insights at the point of care. And they are also looking to share best practices with other providers and specialized partners to make healthcare more environmentally sustainable.

Other stakeholders such as governments and payers have an equally crucial role to play in advancing new care delivery models. In partnership with all involved, they can help develop and implement the common standards and incentives that are needed to reduce variation and promote harmonization across the healthcare ecosystem – whether it is to increase interoperability and facilitate the secure flow of data across care settings, or to support sustainable innovations and accelerate the decarbonization of healthcare.

Going forward, clinical and economic evidence of the benefits of new care delivery models will be an essential driver for further adoption by providers and payers. Small-scale pilots conducted in partnership can help generate that evidence, showing how digital innovations can improve patient health outcomes as well as the patient and staff experience. Similarly, being able to measure progress on environmental sustainability goals will help propel green initiatives in healthcare.

Ultimately, that's how both patients and the planet will benefit from new care delivery models which serve everyone, everywhere.

Appendices

Research methodology

Research overview and objectives

Commencing in 2016, Royal Philips has conducted original research every year with the goal of understanding the ways various countries around the world are addressing global health challenges and how they are improving and expanding their ability to care for their communities. Building and expanding on previous years, the Future Health Index 2023 focuses on addressing staff shortages and meeting patient needs with new care delivery models, speaking to both healthcare leaders and younger healthcare professionals* globally.

The first Future Health Index, released in 2016, measured perceptions of how healthcare was experienced on both sides of the patient-professional divide. The following year, the research compared perceptions to the reality of health systems in each country that was studied. In 2018, the Future Health Index identified key challenges to the large-scale adoption of value-based healthcare and overall improved access, evaluating where connected care technology could speed up the transformation process. In 2019, the research explored the healthcare experience for both patients and healthcare professionals and how technology was moving us to a new era of healthcare delivery transformation. In 2020, the Future Health Index examined the expectations and experiences of healthcare professionals aged under 40. In 2021, the Future Health Index report considered how healthcare leaders were meeting the continuing demands of the pandemic and what the new reality of healthcare post-crisis might look like. Last year's report, concentrated on the role of digital tools and connected care technology in meeting the complex needs of healthcare leaders.

In 2023, the Future Health Index looks to both healthcare leaders and younger healthcare professionals – those aged 40 and under – in 14 countries to quantify the experience and expectations of those in different roles and at various stages of their healthcare careers. It focuses on their perception of new care delivery models, which integrate physical and virtual care within and beyond hospital walls.

* Healthcare leaders are C-suite or senior executive decision makers/influencers working in a hospital, medical practice, imaging center/office-based lab, ambulatory center or urgent care facility. Younger healthcare professionals are defined as those aged between 18 and 40 who have completed their first medical/nursing degree and are working as a healthcare professional in a clinician role (all specializations, except psychiatry/dental care).

Research methodology

2023 quantitative survey methodology

The quantitative study was executed by iResearch, a global business and consumer research services firm employing a mixed methodology of online and telephone surveying.

1,400 healthcare leaders and 1,400 younger healthcare professionals in 14 countries (Australia, Brazil, China*, Germany, India, Indonesia, Italy, Japan, the Netherlands, Poland, Saudi Arabia, Singapore, South Africa and the United States) participated in a 15-20 minute survey in their native language from November 2022 – February 2023. 100 healthcare leaders and 100 younger healthcare professionals in each of the 14 countries completed the survey.

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

	Unweighted sample size (N=)	**Estimated margin of error** (percentage points) Healthcare leaders	**Estimated margin of error** (percentage points) Younger healthcare professionals	**Interview methodology**
Australia	200	+/- 6.0	+/- 6.0	Online and telephone
Brazil	200	+/- 5.5	+/- 6.5	Online and telephone
China	200	+/- 6.5	+/- 7.2	Online and telephone
Germany	200	+/- 6.0	+/- 6.8	Online and telephone
India	200	+/- 5.2	+/- 6.0	Online and telephone
Indonesia	200	+/- 6.5	+/- 6.5	Online and telephone
Italy	200	+/- 6.5	+/- 6.5	Online and telephone
Japan	200	+/- 5.5	+/- 6.0	Online and telephone
Netherlands	200	+/- 6.2	+/- 6.4	Online and telephone
Poland	200	+/- 5.5	+/- 6.0	Online and telephone
Saudi Arabia	200	+/- 6.0	+/- 6.5	Online and telephone
Singapore	200	+/- 5.5	+/- 7.0	Online and telephone
South Africa	200	+/- 6.5	+/- 6.8	Online and telephone
United States	200	+/- 6.0	+/- 7.0	Online and telephone
Total	**2,800**	**+/- 6.23**		

Question localizations

In some instances, certain questions needed to be adjusted slightly for relevance within specific countries. Care was taken to ensure the meaning of the question remained as close to the original, English version, as possible.

* Survey data is representative of Mainland China only and does not include Taiwan or Hong Kong.

** Estimated margin of error is the margin of error that would be associated with a sample of this size for the full healthcare leader or younger healthcare professional population in each country. However, this is estimated since robust data is not available on the number of healthcare leaders or younger healthcare professionals in each country surveyed.

Glossary of terms

Ambulatory care center
Outpatient care centers (e.g., urgent care, walk-in clinics, etc.).

Artificial intelligence (AI)
AI refers to the use of machine learning and other methods that may mimic intelligent human behaviors, resulting in a machine or program that can sense, reason, act and adapt to assist with different tasks.

As-a-service models
Methods of delivering hardware, software and/or services on a subscription basis.

Automation
The application of technology, programs, robotics or processes to support people in achieving outcomes more efficiently.

Data
Used here to refer to a variety of clinical and/or operational information amassed from numerous sources including but not limited to digital health records (DHRs), medical imaging, payer records, wearables, medical devices, staff schedule and workflow management tools, etc.

Digital health technology
A variety of technology that transmits or shares health data. The technology can take a variety of forms, including but not limited to home health monitors, digital health records, equipment in hospitals/healthcare facilities, and health or fitness tracker devices.

Distributed care
Instead of having patients come into a central location, distributed care brings care to the patient. Increasingly, healthcare could be delivered through a decentralized network of ambulatory clinics, retail settings, and home-based monitoring, coaching, and treatment.

Early adopters of digital health technology
Early adopters are defined as those who indicated that, compared to other hospitals or facilities, they are among the first to adopt an innovation or they adopt innovations before most others.

Global non-governmental organizations
A nonprofit organization that operates independently of any government.

Healthcare ecosystem
Describes people involved in care delivery (including patients, family members and caregivers), the locations of care and services provided, and how they work together to improve efficiencies and optimize experiences.

Health technology companies
Companies that sell or provide medical equipment, wearables, health apps and other technology to healthcare organizations, patients, and the general public.

Healthcare leader
A C-suite or senior executive working in a hospital, medical practice, imaging center/office-based lab, or urgent care facility who is a final decision-maker or has influence in making decisions.

Healthcare professional
All medical staff (including doctors, nurses, surgeons, specialists, etc.), and excludes administrative staff.

Healthcare professional-to-healthcare professional virtual care
Virtual communication between healthcare professionals through sharing images, recommending treatment plans, etc.

Healthcare professional-to-patient virtual care
Communication between healthcare professionals and their patients via video calls, patient portals, etc.

Integrated care
Collaboration between the health and care services required by individuals to deliver care that meets patient needs in an efficient way.

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

Late adopters of digital health technology
Late adopters are defined as those who indicated that, compared to other hospitals or facilities, they adopt innovations later than most others.

New ways to deliver care
This defines the way in which health services are provided. New ways to deliver care combine the needs of patients, caregivers and providers, to achieve the best possible care through integrated services within and beyond hospital walls.

Out-of-hospital services/settings
Care centers such as ambulatory surgical centers, office-based labs, etc.

Payer
A payer is a person, organization, or entity that pays for the care services administered by a healthcare provider. Payers are usually, but not always, commercial organizations like insurance companies; government or public sector bodies; or individuals.

Predictive analytics
A branch of advanced analytics that makes predictions about future events, behaviors, and outcomes.

Remote patient monitoring
Technology that provides care teams with the tools they need to remotely track the health of their patients outside of conventional clinical settings (e.g., at home), collaborate with the patients' other healthcare professional(s) and help detect problems before they lead to readmissions. Examples of this include cardiac implant surveillance, vital-sign sensors at home, etc.

Staff
This refers to all staff, including physicians, nurses, administrative employees, etc.

Sustainability
Meeting the environmental needs of the present without compromising the ability of future generations to meet their own needs.

Technology infrastructure
Foundational technology services, software, equipment, facilities and structures upon which the capabilities of nations, cities and organizations are built. This includes both IT infrastructure and traditional infrastructure that is sufficiently advanced such that it can be considered modern technology.

Telehealth/virtual care
The distribution of health-related services and information via electronic information and telecommunication technologies.

Workflows
A process involving a series of tasks performed by various people within and between work environments to deliver care. Accomplishing each task may require actions by one person, between people, or across organizations – and can occur sequentially or simultaneously.

Younger healthcare professional
A healthcare professional working in a clinician role (all specializations, except psychiatry/dental care), under the age of 40.

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The Future Health Index is commissioned by Philips.

To see the full report, visit
www.philips.com/futurehealthindex-2023

The Future Health Index 2023 report examines the experiences of almost 3,000 healthcare leaders and younger healthcare professionals and their expectations for the future. The research for the Future Health Index 2023 report was conducted in 14 countries (Australia, Brazil, China, Germany, India, Indonesia, Italy, Japan, Netherlands, Poland, Saudi Arabia, Singapore, South Africa and the United States). The study comprises a quantitative survey conducted from November 2022 – February 2023.

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