

The age of **opportunity**

Empowering the next generation to **transform healthcare** United States of America

The Future Health Index is commissioned by Philips

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Context

The research for the Future Health Index 2020 report was conducted in November and December 2019 during the onset of the COVID-19 pandemic, painting a **realistic picture of the state of healthcare systems** on the eve of the crisis. The report findings demonstrate that even before the pandemic, healthcare was in need of radical change. **Younger healthcare professionals have experienced significant stress and new responsibilities in recent months.**

The Future Health Index 2020 report is a valuable tool in helping us to uncover the needs of this next generation of healthcare professionals and, in doing so, establish where **changes can be made** to meet them.



United States of America overview

Dr. Joseph Frassica, Chief Medical Officer and Head of Philips Research North America



The U.S. is at an inflection point of generational change in healthcare.

America's healthcare system faces challenges from an aging population and workforce laden by stress, none more so than the next generation of healthcare professionals.

Physicians, nurses and support staff juggle the challenges of patient care to which they have committed their careers with daunting administrative duties imposed by the introduction of the EMR. As a pediatrician and intensivist, I see and understand these issues facing our younger healthcare professionals. With the introduction of automation and the digitization of health records systems, there has been a significant shift of administrative burden from the back office to the front-line professionals. Physicians are now becoming more and more responsible for administrative tasks that were once handled by support staff. In addition, for their promise for improvement in the delivery of healthcare, many technologies have added additional burdens to the basic tasks of caring for patients due to their lack of sensitivity to their effects on clinician workflow. We must do better and create systems of engagement that enhance rather than hinder the workflow of clinicians and free them from the additional unbalanced workload that has been imposed on them by our first generation EMRs. In teaching institutions, this burden falls disproportionately on the trainees and younger healthcare professionals.

But there is opportunity.

This generation of younger healthcare professionals has the responsibility – and privilege – of delivering the changes needed to ensure our healthcare system is fit for purpose. Value-based care is the ultimate aspiration, delivered through the Quadruple Aim of better health outcomes, improved patient and staff experience, and lower cost of care. Yet, today, they are ruled by volume-based care with their productivity measured by the number of patients they see, making the effective use of technology a requirement.

The data reveals a clear mandate for healthcare leaders to respond to the concerns of this younger generation and enable them to take up the mantle and deliver on the promise of value-based care.

There are three core areas to address urgently: education and training, technology and culture.

A revealing and inspiring perspective.

They train for years to qualify to deliver patient care. Yet as younger American healthcare professionals begin their careers, many experience insufficient training in digital technologies and feel inadequately prepared for administrative duties. Of the 15 countries surveyed, America's younger healthcare professionals ranked higher than some of the other countries surveyed in regularly experiencing work-related stress (79%).

Education and training are key to closing the gap in these non-clinical skills and reducing stress, with an increased focus on tools to help with administrative and business processes, while also building up a deeper understanding of the principles of value-based care.

The adoption of digital health tools has grown significantly in the U.S., yet younger healthcare professionals are overwhelmed by the amount of digital patient data that they encounter. In many cases, there is no interpretation of the data they receive and no real decision support to help them take the right actions and support quality patient care. Above all, the stressful demands and long hours they face on a daily basis make work-life balance considerations a critical ingredient for younger American healthcare professionals when choosing a hospital or practice.

If these talented professionals become disengaged, we risk losing their skills and commitment to the sector. Technology has the power to transform delivery, improve patient care, provide work satisfaction and drive value-based care. It presents a platform to address the high costs and waste that destabilize budgets. It also gives younger healthcare professionals the ability to shape future healthcare systems with care at the core.

The report findings herald a dynamic future. I urge healthcare leaders to absorb these valuable insights and to consider how they can be applied within their own hospital or practice.

This is the age of **opportunity**.

Future Health Index 2020 report: research premise

In its fifth year, the Future Health Index 2020 report is based on **proprietary research across 15 countries.**

The research explores how to support and empower the next generation of healthcare professionals* and leaders who will **deliver tomorrow's healthcare,** specifically exploring their perceptions of today's reality and the role technology plays in supporting them to deliver better care.

This is the first global survey of its kind focused on the **next generation** of healthcare professionals. Responses from almost 3,000 younger healthcare professionals across 15 countries**



Countries included in the research

5. Germany	10. Romania	15. United States of America
4. France	9. Poland	14. South Africa
3. China	8. Netherlands	13. Singapore
2. Brazil	7. Japan	12. Saudi Arabia
1. Australia	6. India	11. Russia

Theme

"Leaders absolutely need to recognize that work which directly affects clinical care needs to take precedent. Administrators should be pushing to offload or automate administrative and billing tasks as much as possible and clearing room for physicians to actually practice medicine."

United States of America, Oncology, in residency

Exploring the gaps in healthcare education and training

Younger healthcare professionals in the United States of America train for many years before qualifying to work in a hospital or practice. However, upon starting their medical career some experience insufficient training in digital technologies and are inadequately prepared for administrative duties. In an era where digital technology changes rapidly, providing education on the skills and knowledge needed to fulfill their role is critical. The Future Health Index 2020 data shows that, in many cases, the expectations younger healthcare professionals had of their career during training are not met once they start practicing, suggesting significant gaps between education and daily practice. While younger American healthcare professionals are ahead of the other countries surveyed in many areas, there are still opportunities for improvement. At a time when healthcare systems are under increasing pressure, these discrepancies between expectation and reality could ultimately impact this next generation's satisfaction and willingness to remain in the profession.

- Skills gap. American medical programs implement strict curriculums and demanding coursework to ensure younger healthcare professionals are prepared for the clinical demands of their career. However, those in practice also carry out non-clinical tasks alongside patient care. Many younger American healthcare professionals report that their training and medical education has not necessarily prepared them for some of these additional responsibilities. Support from their hospital or practice through continuous education is also inconsistent and often behind other countries in these key non-clinical skills.
- Knowledge gap. An increasing number of American hospitals and practices are moving towards a value-based care model. Prior to COVID-19, the share of American patients in value-based care programs was expected to grow to 46% in 2021, doubling from just 23% in 2018*. However, because most younger healthcare professionals are primarily focused on building and refining their clinical skills upon entering the workforce, it is unsurprising that they may have limited insight into reimbursement or the economic outcomes derived from healthcare. Younger American healthcare professionals are less likely than many of the other countries surveyed to know a lot about value-based care, and many report that their hospitals or practices are still measuring performance with volume metrics. Shifting the focus to value measures will help broaden knowledge and further increase adoption of value-based care.
- Career expectation gap. While many feel satisfied in their role as a younger healthcare professional, many report a gap between the reality of their career and what they had hoped it would be. This disparity could impact future generations of American healthcare professionals, as only around half are likely to recommend a career in medicine to others. If not addressed, the danger is that these disillusioned professionals will leave healthcare prematurely.

The **skills** gap

The United States of America lags behind other countries surveyed in addressing gaps in key non-clinical skills

Percentage who say their hospital or practice **provides continuous education** as needed for:

The biggest non-clinical skills gap relates to business administration tasks.

Similar to their peers in other countries, many American younger healthcare professionals say their medical education did not provide them with the key non-clinical skills necessary for modern healthcare. This is particularly true for skills related to business administration tasks (e.g., billing, budgeting, workflow management), which half say they were unprepared for by their medical school. However, American younger healthcare professionals are less likely than their peers in many of the other countries surveyed to be offered continuous education by their hospitals or practices in this area.

Percentage who feel their medical education **did not prepare** them at all for:



Base (unweighted): Total younger healthcare professionals (15-country avg. n=2,867; United States of America n=201; Germany n=200; China n=201; Australia n=150)

American hospitals and practices also fall behind those in some of the other countries surveyed in helping younger healthcare professionals manage daily stress and pressure, potentially leading to burnout.

Over three-quarters (82%) of younger healthcare professionals in the United States of America say that managing the stress and pressures of being a healthcare professional is important to their work, compared to 71% across all of the countries surveyed. However, neither their medical education nor their hospitals or practices are adequately preparing them to manage this.



Base (unweighted): Total younger healthcare professionals (15-country avg. n=2,867; United States of America n=201; Germany n=200; China n=201; Australia n=150)

The **knowledge** gap

Greater knowledge of value-based care is needed in the United States of America

While an increase in value-based care^ programs is predicted* in the United States of America, knowledge among younger American healthcare professionals is comparatively limited.

Across all countries surveyed, there is very limited knowledge of value-based care. This may be due to younger healthcare professionals being primarily focused on the hard skills necessary to be a successful clinician in the early years of their career, rather than the economic outcomes of healthcare. However, with a general shift toward value-based care models, it is younger healthcare professionals who will ultimately be responsible for implementing this concept. Currently, the majority (83%) of younger American healthcare professionals have limited or no knowledge of the concept, and they are less likely to be knowledgeable then many of their peers. This suggests greater education is needed to increase awareness throughout the American healthcare system.



83% Only knew it **by name, knew a little or knew nothing at all** about valuebased care prior to taking the survey

17% Knew **a lot about** value-based care prior to taking the survey

Country comparisons (Those who had limited or no knowledge of value-based care prior to taking the survey):

78% 15-country avg.

73% Australia

60% China 9

90% Germany

Base (unweighted): Total younger healthcare professionals (15-country avg. n=2,867; United States of America n=201; Germany n=200; China n=201; Australia n=150)

^Value-based care is the concept of healthcare providers receiving reimbursement based on patient health outcomes rather than on the volume of tests or procedures completed.

*https://www.businessinsider.com/value-based-care-pay-for-performance-healthcare-model

For many younger healthcare professionals in the United States of America, their day-today experience reinforces their lack of knowledge about value-based care.

American hospitals and practices are using some value-based measures at higher rates than many of the other countries surveyed. However, most are still using volume-based metrics to measure performance.



75% of younger healthcare professionals in the United States of America say their hospitals or practices use volume-based measures



The career expectation gap

Most younger American healthcare professionals are **satisfied**; however, there's **room to address their career expectations**

American hospitals and practices must rethink how they address the gap between education and reality.

Concerningly, 41% of younger American healthcare professionals say the reality of their career either does not live up to the hopes and expectations that they had during their medical education, or they are undecided.



41% Disagree or neither agree nor disagree that the reality of their career lives up to their hopes and expectations

59% Agree that the reality of their career lives up to their hopes and expectations

Country comparisons: (Those who disagree or neither agree or disagree that the reality of their career lives up to their hopes and expectations):



15-country avg.



58% Germany

Although most younger American healthcare professionals report that they are satisfied with their work, this discrepancy between career expectation and reality is potentially having an impact.

Though still the majority, younger healthcare professionals working in the United States of America are less likely than those in many of the other countries surveyed to be satisfied with their work.



They are also less likely than those in many of the other countries surveyed, and similar to their peers in Germany, to recommend a career in medicine to others.



Base (unweighted): Total younger healthcare professionals (15-country avg. n=2,867; United States of America n=201; Germany n=200; China n=201; Australia n=150)



"If I were in charge, I would streamline our multiple EMRs^ to one standard product that is widely accessible."

United States of America, Critical Care Medicine, 5 years in practice

Harnessing technology to help transform healthcare

In the United States of America, the adoption of digital health tools has grown significantly among all American physicians since 2016*. Despite this increase, the negative feelings about digital health tools some may have is widely discussed, particularly if these tools lead to a heavier administrative burden**. The Future Health Index 2020 data reveals that while some younger American healthcare professionals see the value of technology, there are barriers to overcome before it can be leveraged to its fullest potential.

- Technology's role in improving patient care. Younger American healthcare professionals are hesitant about the
 potential of technology to improve patient outcomes and experiences. In fact, they are less likely than most of their
 peers in the other countries surveyed to see digital health technologies positively impacting patient care. As a country
 that already experiences a high level of administrative complexities in its healthcare system[~], unsurprisingly, many
 younger American healthcare professionals worry that the adoption and use of digital health technologies will lead to
 more administrative work and less time with patients.
- **Dismantling data barriers.** More so than the average of those across all of the countries surveyed, younger American healthcare professionals are overwhelmed by the amount of digital patient data that they encounter. Additional support staff for data management and entry could help them organize and use this data more effectively.
- The power of interoperability. Previous Future Health Index research^^ highlighted lack of interoperability as a top issue for healthcare professionals. This next generation of American healthcare professionals also regards interoperability as one of the biggest barriers to technology use, behind only budgetary constraints and bureaucratic processes. For most (68%) younger American healthcare professionals, improving interoperability is also the best way of ensuring that healthcare data is used to its maximum potential.
- Laying the foundations for improved patient care. Despite negative media coverage and a perception that they result in a heavier administrative workload**, roughly one in four younger American healthcare professionals regards digital health records as the most effective technology for improving patient care over the next five years, ahead of other technologies including telehealth and artificial intelligence.

*https://www.ama-assn.org/about/research/ama-digital-health-care-2016-2019-study-findings

~https://www.americanprogress.org/issues/healthcare/reports/2019/04/08/468302/excess-administrative-costs-burden-u-s-health-care-system/

^{**}https://www.healthcarefinancenews.com/news/why-patients-and-doctors-are-still-dissatisfied-electronic-health-records

^{^^}Future Health Index. (2019). Base (unweighted): Total healthcare professionals (United States of America n=20

^AThis refers to digital health records (e.g. EMRs, EHRs) which are technologies that can store a variety of health information, including medical history, test results, health indicators, etc. Digital health records can be used within a certain healthcare facility, across different healthcare facilities, by only the patients themselves, by one healthcare professional or across all healthcare professionals involved in a patient's care.

Technology's role in improving patient care

Younger American healthcare professionals are unsure if digital health technologies will enhance patient outcomes and experiences

Younger American healthcare professionals are among the least likely of those in all of the countries surveyed to believe that digital health technologies will improve patient outcomes and experiences.

Only a little over half see these benefits, compared to roughly three in four across all countries surveyed.



Additionally, younger American healthcare professionals are the most likely to disagree that the use of digital health technologies leads to more time spent with patients.



Base (unweighted): Total younger healthcare professionals (15-country avg. n=2,867; United States of America n=201; Germany n=200; China n=201; Australia n=150)

The American healthcare system has a reputation for administrative complexities^{*}. This may explain why younger American healthcare professionals are more likely than many of their peers to express concern about increasing implementation of digital health technologies, as they view it as an additional burden to their administrative duties.

Roughly half of younger American healthcare professionals are most concerned about an increased administrative burden as they look toward the future, more so than those in most other countries surveyed.



Healthcare professionals are **most concerned** about an increased **administrative burden**



Additionally, younger American healthcare professionals are among the most likely to disagree that the implementation of artificial intelligence (AI) will lead to less administrative work.



Disagree that the implementation of AI will lead to less administrative work



*https://www.americanprogress.org/issues/healthcare/reports/2019/04/08/468302/excess-administrative-costs-burden-u-s-health-care-system/

Dismantling **data barriers**

The amount of digital patient data is overwhelming many younger American healthcare professionals

Compared to the average across all countries surveyed, younger American healthcare professionals are more likely to feel overwhelmed by digital patient data and more likely to believe they have sufficient data.

In fact, younger healthcare professionals in the United States of America are among the least likely to agree that they do not have enough digital patient data. While the utilization of patient data and digital health records has its benefits, American physicians have also noted negative effects including time-consuming data entry and interference with face-to-face patient care*.

More data-focused support staff could help younger American healthcare professionals maximize digital patient data.

To effectively harness the benefits and derive real value from digital patient data, younger American healthcare professionals need support. They say that the following would help them to use digital patient data most effectively:





The power of **interoperability**

Addressing interoperability issues is critical to fully embracing data and technology

American hospitals and practices are particularly inclined to embrace new technology.

In fact, younger American healthcare professionals are among the most likely to say their hospitals and practices are willing to embrace new technology, along with their peers in Australia and China.

The percentage of hospital or practices willing to embrace technology:



Improved interoperability is key to maximizing the potential of digital patient data but many believe it needs to be further improved.

As seen in the Future Health Index 2019 report*, enhanced interoperability is vital to advance the use of digital patient data. However, according to younger healthcare professionals in the United States of America, this continues to be a barrier. This cohort are more likely than those in many of the other countries surveyed to say interoperability between platforms is a key improvement needed to ensure that healthcare data is used to its fullest potential.



Younger American healthcare professionals also cite portability of healthcare data as the top digital health innovation that would most improve their satisfaction at work.

Nearly half of younger healthcare professionals in the United States of America report this – among the highest of all countries surveyed.

Portability of healthcare data between hospitals or practices:



Base (unweighted): Total younger healthcare professionals (15-country avg. n=2,867; United States of America n=201; Germany n=200; China n=201; Australia n=150) Base (unweighted): Total younger healthcare professionals (15-country avg. n=2,867; United States of America n=201; Germany n=200; China n=201; Australia n=150) *Future Health Index. (2019). Base (unweighted): Total healthcare professionals (United States of America n=203)

Laying the foundations for improved patient care

Digital health records are highly valued by younger American healthcare professionals

Accurate and accessible digital health records could lead to greater confidence in deploying technology across the American healthcare system.

Despite the fact that some American healthcare professionals feel that the implementation of digital health records has resulted in more administrative work, many of the younger cohort of healthcare professionals believe they are critical to the future of healthcare^. When asked which digital health technology will be most beneficial for improving patient care over the next five years, digital health records topped the list – above other technologies such as telehealth and artificial intelligence (AI). The Future Health Index 2019* report found that 84% of American healthcare professionals use digital health records. However, only 46% use telehealth, and only a third (33%) use AI technologies in their hospital or practice, lower rates than many of the other countries surveyed. It is clear that digital health records are becoming an integral component of healthcare in the United States of America, and optimizing this technology to improve its efficiency is likely to improve the value it delivers for all American healthcare professionals.

The digital technologies that would be **most beneficial** for improving patient care over the next five years:







United States of America
 15-country avg.

^https://www.healthcarefinancenews.com/news/why-patients-and-doctors-are-still-dissatisfied-electronic-health-records *Future Health Index. (2019). Base (unweighted): Total healthcare professionals (United States of America n=203)

Base (unweighted): Total younger healthcare professionals (15-country avg. n=2,867; United States of America n=201)

Base (unweighted): Total younger healthcare professionals (15-country avg. n=2,867; United States of America n=201; Germany n=200; China n=201; Australia n=150)



"I think that a work-life balance is extremely important. When you are a younger attending physician, you may need guidance or help. If your colleagues don't support you it will eventually affect your personal life too."

United States of America, Critical Care Medicine, 4 years in practice

Creating the ideal healthcare working environment

The American healthcare system is under constant pressure to improve the quality of care while reducing costs. Younger healthcare professionals in the United States of America feel the effects of this, experiencing long working hours, rising bureaucratic demands and more. In fact, nearly 44% of American healthcare professionals report feeling burned out, which not only takes a physical and mental toll, but also impacts American health systems' costs^. Beyond burnout, the Future Health Index 2020 shows there are also many – often non-clinical – aspects of modern healthcare that affect younger healthcare professionals' ability to drive change in their hospitals or practices, ultimately leaving them feeling frustrated and dissatisfied. American hospitals and practices must address the challenges faced by younger healthcare professionals in the workplace. Doing so may improve work satisfaction and retention, as well as staff engagement and ultimately patient care.

- Selecting a supportive workplace. The demands of working in healthcare are immense physician burnout affects 78% of practicing physicians in the United States of America*. Younger American healthcare professionals are all too aware of the pressures associated with their role, and expect a positive work-life balance in return. When deciding where to work, they are among the most likely to seek out a hospital or practice with a culture that supports work-life balance.
- Minimizing stress. Work-related stress is a significant issue, affecting roughly three in four younger American healthcare professionals. This pressure could potentially lead to burnout among this newest generation of healthcare professionals, since many have considered leaving the healthcare profession as a result of this stress.
- Transformational change has internal barriers. Younger American healthcare professionals are among the most likely of those in all the countries surveyed to feel unable to drive change in their hospitals or practices. Internal bureaucracy, non-medical stakeholders and a failure to acknowledge or act on suggestions of the younger generation are all factors influencing this sentiment. For example, many younger American healthcare professionals feel disempowered amid the implementation of digital health records, feeling that the widespread investment in this technology was made without their input. Failing to involve younger healthcare professionals in hospital management and decision-making could not only lead to the failure of vital transformation projects but may ultimately encourage them to leave the profession.

^https://www.healthcaredive.com/news/nearly-half-of-doctors-feel-burned-out-medscape-survey-shows/546214/ *https://physiciansfoundation.org/wp-content/uploads/2018/09/physicians-survey-results-final-2018.pdf

Selecting a **supportive** workplace

Work-life balance matters most when choosing a hospital or practice

Younger American healthcare professionals value work-life balance and culture above the latest technology advancements or clinical reputation.

Factors around working hours, work-life balance and professional autonomy are most important for younger American healthcare professionals when choosing a hospital or practice in which to work. In fact, when deciding where to work, they are among the most likely to value a culture that supports work-life balance.



Continued implementation of digital health technology within the American health system could play a role in improving worklife balance among younger healthcare professionals.

On average, younger healthcare professionals working in the United States of America see 99 patients per week, on par with the average of countries surveyed. However, despite their demanding roles and long hours, roughly three quarters believe the right digital health technologies could reduce their current workload.



78% Agree that the right technologies have the potential to reduce their workload





Base (unweighted): Total younger healthcare professionals (15-country avg. n=2,867; United States of America n=201; Germany n=200; China n=201; Australia n=150)

Minimizing **stress**

High levels of stress and burnout could be encouraging younger American healthcare professionals to leave the profession

As demand for physicians in the United States of America increases faster than supply*, stress is negatively impacting the experience of younger healthcare professionals.

Roughly three-quarters of younger healthcare professionals in the United States of America regularly experience work-related stress, more so than their peers in some of the other countries surveyed. This stress is also having an impact on patient experiences. Roughly three-quarters (77%) of American adults report that seeing their clinician feeling burnt out leads to them becoming concerned about their own care and safety, while 80% believe burnout diminishes quality of care**.



If not addressed, this continuous stress and burnout within the American healthcare system could have an impact on the overall workforce, as younger American healthcare professionals are more likely than those in many of the other countries surveyed to have considered leaving their profession as a result of the stress they experience at work.



The implementation of digital health technologies could be one way to help reduce stress levels among younger American healthcare professionals.

Across all of the countries surveyed, younger healthcare professionals working in analog facilities are more likely to experience stress than those in smart or digital facilities. They are also more likely than those in smart or digital facilities to have considered leaving as a result of stress.



Base (unweighted): Total younger healthcare professionals working in a smart hospital/practice (n=672), total younger healthcare professionals working in a digital hospital/practice (n=1,790), total younger healthcare professionals working in an analog hospital/practice (n=399)

*https://www.aamc.org/news-insights/press-releases/new-findings-confirm-predictions-physician-shortage
**https://www.managedhealthcareexecutive.com/business-strategy/negative-effects-healthcare-provider-burnout-not-lost-patients
Base (unweighted): Total younger healthcare professionals (15-country avg. n=2,867; United States of America n=201; Germany n=200; China n=201; Australia n=150)

Transformational change has internal barriers

Internal bureaucracy and non-medical stakeholders are hindering change within American hospitals and practices

Compared to their peers in many of the other countries surveyed, younger American healthcare professionals are less likely to believe they can drive change within their workplace.

The constant pressure from insurance and government payers within the American healthcare system may be a contributing factor.



Among those who do not know or are unsure if they can drive change in their hospital or practice, internal bureaucracy is considered the top issue impacting their ability to do so.

More than the average of those across all countries surveyed, the top barriers for younger American healthcare professionals are related to internal bureaucracy and decisions made by non-medical stakeholders.



Additionally, decisions by non-medical stakeholders in the United States

of America are having a negative effect on younger American healthcare

professionals' satisfaction.

Report conclusion and recommendations

Report conclusion

American hospitals and practices are lagging behind in addressing the gaps in key nonclinical skills that younger U.S. healthcare professionals are facing, primarily related to business administration tasks and managing stress and pressure.

Younger American healthcare professionals are not fully convinced of the potential of digital health technologies, such as the EMR, to improve patient outcomes and experiences. Many are concerned that increased implementation will add burdens to their existing administrative duties.

Yet they see great value in digital health records. When asked which digital health technology will be most beneficial for improving patient care over the next five years, digital health records topped the list – above other technologies including telehealth and artificial intelligence (AI). Optimizing this technology to improve its efficiency is likely to improve the value it delivers.

Above all, a balanced work-life matters most to them when choosing a hospital or practice. This is likely due to the stressful demands and long hours they face daily.

Less than half of younger American healthcare professionals in the U.S. feel empowered to drive change within their hospitals or practices. Internal bureaucracy and decisions made by non-medical stakeholders are not only acting as barriers, but also impacting satisfaction.

The U.S. must invest in systems of engagement that enhance the physician workflow as well as data sharing and business management tools that can help younger healthcare professionals treat patients and reduce stress by increasing their work-life balance and giving them the autonomy they need.

Let's unleash the power of the next generation of healthcare professionals.



Recommendations

The Future Health Index 2020 report has captured vital insights from a new generation of healthcare professionals, revealing the gap between their expectations around training, technology and culture, and the reality of their experience as healthcare professionals.

When considering how to address the issues that have been highlighted in the report, there are three core areas on which healthcare leaders should first focus:



- **Education and training**
- ✓ Increase focus on tools to help with administrative and business management processes to reduce the burden on healthcare professionals
- ✓ Provide training on the use and interpretation of technology and data
- ✓ Build an understanding of the principles of value-based care

Technology

- ✓ Invest in data sharing technologies to make them more usable
- ✓ Harness technology to both improve work-life balance and clinical performance
- ✓ Work with payers and government to encourage the industry to deliver greater product interoperability



Culture

- Examine decision-making hierarchy and process to ensure that opinions of younger healthcare professionals are acknowledged and acted upon
- ✓ Involve younger professionals in the operational side of the hospital or practice
- ✓ Enable flexible working through staggered shift patterns
- ✓ Leverage technology to minimize stress and burnout

Glossary of terms

Analog hospitals or practices

Most or all patient data is handled in a paper-based format or using traditional communications, e.g., phone, fax, etc.

Artificial intelligence (AI)

Artificial intelligence (AI) uses data science techniques, designed by people and inspired by intelligent behavior, to create systems and solutions that can sense, reason, act and adapt to assist with complex and repetitive tasks.

Augmented reality (AR)

A technology that superimposes a computer-generated image on a user's view of the real world, providing a composite view. In healthcare, this can allow a surgeon, for example, to see live data or 3D medical imagery in their field of vision when performing procedures.

Data privacy

The cultural expectations, organizational regulations and legislation that protect personal information from unauthorized use and dissemination.

Data security

Protecting data against unauthorized access.

Digital health records

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

Electronic medical records (EMRs) and electronic health records (EHRs) fall within the term 'digital health records'.

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 and health or fitness tracker devices.

Digital hospitals or practices

Simple/basic technologies are used, with most or all patient data and communications being handled electronically.

Healthcare professionals under 40

This is our group of survey respondents: healthcare professionals (all medical staff, including doctors, nurses, surgeons, radiologists, etc.) aged under 40 years at the time of the research. Some of these people will already be leaders in their field, but together they will make up the main body of the healthcare workforce over the next 20 years.

Interoperability

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

Machine learning

A method of AI that provides systems with the ability to automatically learn and improve from experience without being explicitly (re-)programmed.

Medical education

Education related to the practice of becoming a healthcare professional – both the initial medical school training and continuing medical education following qualification.

Quadruple Aim

Philips makes value-based care principles actionable by addressing the 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 balance of healthcare professionals
- Lower cost of care reducing the per capita cost of healthcare

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.

Smart hospitals or practices

Advanced connected care technologies are used, in addition to patient data and communications being handled electronically.

Telehealth

The use of electronic information, digital health technology or mobile health applications and telecommunications technologies to support longdistance exchange between healthcare professionals and patients and healthcare professionals and their peers, as well as for 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.

Virtual reality (VR)

The computer-generated simulation of a threedimensional image or environment that, using electronic equipment, can be interacted with by an individual in a seemingly real or physical way.

Younger healthcare professional

All medical staff under the age of 40 who have completed their first medical or nursing degree.

Research methodology

Research background

Since 2016. Royal Philips has conducted original research 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 Future Health Index focuses on the crucial role digital tools and connected care technology can play in delivering more affordable, integrated and sustainable healthcare.

In 2016, the Future Health Index measured perceptions of healthcare to produce a snapshot of how healthcare is experienced on both sides of the patient-professional divide. In 2017, it compared these perceptions to the reality of health systems in each country researched. In 2018, the Future Health Index identified key challenges to the large-scale adoption of value-based healthcare and overall improved access. It assessed where connected care technology can help speed up the healthcare transformation process. In 2019, the Future Health Index explored technology's impact on two aspects of the Quadruple Aim: the healthcare experience for both patients and healthcare professionals¹ and how technology is moving us to a new era of continuous transformation.

2020 research overview and objectives

Now in its fifth year, the Future Health Index 2020 report builds on the findings of the previous reports by examining the expectations and experiences of younger healthcare professionals aged under 40 and how they can be empowered to meet the demands of tomorrow's healthcare.

As the first global survey of its kind, the Future Health Index 2020 report features intriguing insights into the next generation of healthcare professionals, a group that will form most of the healthcare workforce over the next 20 years. The research explores this group's expectations around technology, training and job satisfaction, and the reality of their experience as healthcare professionals.

The research gives a clear mandate to healthcare leaders to respond to the concerns of this young generation of healthcare professionals and highlights three areas to address as a matter of urgency: education and training, technology, and workplace culture.

The research for the 2020 Future Health Index was conducted in 15 countries (Australia, Brazil, China², France, Germany, India, Japan, Netherlands, Poland, Romania, Russia, Saudi Arabia, Singapore, South Africa and the United States of America).

To provide a holistic understanding of the current healthcare systems around the world, the 2020 study combines quantitative surveys and qualitative online focus groups conducted from January-February 2020 among the following key stakeholders:

- Healthcare professionals in 15 countries (quantitative)
- Healthcare professionals in five countries (qualitative)

2020 quantitative survey methodology

In partnership with SERMO, an independent global market research firm, a survey was fielded from November 15 to December 27, 2019 in 15 countries (Australia, Brazil, China, France, Germany, India, Japan, Netherlands, Poland, Romania, Russia, Saudi Arabia, Singapore, South Africa and the United States of America) in their native language. The survey was conducted online and offline (as relevant to the needs of each country) with a sample size of 200 per country for healthcare professionals under 40 years old. The exceptions were Singapore and Australia³, which each had slightly smaller samples. The survey length was approximately 15 minutes.

The total sample from the survey includes:

• 2.867 healthcare professionals under the age of 40 years old (defined as all medical staff, including doctors, nurses, surgeons, radiologists, etc.), who have completed their first medical or nursing degree.

At the 95% confidence level, the 15-country total for the healthcare professional population has an estimated margin of error⁴ of +/- 1.8 percentage points.

References can be found at the end of this section

Research methodology

Below is the specific sample size, 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)	Interview methodology
Australia	150	+/- 8.0	Online
Brazil	203	+/- 6.9	Online
China	201	+/- 6.9	Online
France	202	+/- 6.9	Online
Germany	200	+/- 6.9	Online
India	202	+/- 6.9	Online
Japan	202	+/- 6.9	Online
Netherlands	201	+/- 6.9	Online
Poland	201	+/- 6.9	Online
Romania	202	+/- 6.9	Online
Russia	200	+/- 6.9	Online
Saudi Arabia	201	+/- 6.9	In-person
Singapore	100	+/- 9.8	Online
South Africa	201	+/- 6.9	Online
United States of America	201	+/- 6.9	Online

Weighting

Total country weighting:

The 15-country average is an average calculation whereby each country's sample size was weighted to have the same value, as such ensuring that each country has an equal weight in this total. The same was done for all regional totals, as well as emerging country and developed country totals⁵.

Country classifications are according to the International Monetary $\mathsf{Fund}^6.$

- For the Future Health Index 2020 report, Brazil, China, India, Poland, Romania, Russia, Saudi Arabia and South Africa are considered emerging countries.
- For the Future Health Index 2020 report, Australia, France, Germany, Japan, Netherlands, Singapore and the United States of America are considered developed countries.

Statistical analysis

A statistical analysis was performed to explore the relationship between the type of hospital/practice (in this instance, 'smart,' 'digital' or 'analog') and younger healthcare professionals' agreement with several questions asked in the Future Health Index 2020 survey. The analysis showed that there is, in fact, a statistical relationship between the type of hospital/practice and certain aspects of their careers. The following survey questions were used for this analysis:

To what extent do you agree or disagree with the following?

- The reality of my career lives up to the hopes and expectations that I had during my medical education
- I regularly experience work-related stress
- I have considered leaving the healthcare profession as a result of work-related stress
- Advancements in medical technology make me excited about the future of the healthcare profession

How satisfied or dissatisfied are you in your work as a healthcare professional?

• In Saudi Arabia shown as "How satisfied or dissatisfied are you in your personal decision to become a healthcare professional?"

A chi-square test of independence was performed for the analysis of each of these survey questions. All results showed the relationship between these variables was significant at the p<.001 level.

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.

Research methodology

2020 qualitative interviews methodology

To provide context to the quantitative data (as described previously), the research was supplemented with two waves of online focus groups with doctors. Wave one, conducted from January 10, 2020-January 13, 2020, had 36 participants across the following markets: Brazil, United States of America, France, Germany and Australia. Wave two, conducted from February 3, 2020-February 6, 2020, had 41 participants across the following markets: Brazil, United States of America, France, Germany and Australia. Online focus groups were conducted in participation with SERMO, an independent global market research firm.

References

- 1. For the purposes of this survey, 'healthcare professional' refers to all medical staff, including doctors, nurses, surgeons, radiologists, etc.
- 2. Each third-party 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 only and does not include Taiwan or Hong Kong.
- 3. Singapore healthcare professional sample: 100 in total; Australia healthcare professional sample: 150 in total.
- 4. Estimated Margin of Error is the margin of error that would be associated with a sample of this size for the full healthcare professional population in each country. However, this is estimated since robust data is not available on the number of healthcare professionals under the age of 40 and specialty mixes in each country surveyed.
- Countries are classified as emerging or developed by the International Monetary Fund based on 1) per capita income level, 2) export diversification, and 3) degree of integration into the global financial system.
- "World Economic Outlook Database." International Monetary Fund, April. 2018. https://www.imf.org/external/pubs/ft/weo/2018/01/weodata/weoselagr.aspx.



The Future Health Index is commissioned by Philips.

To see the full report visit <u>www.philips.com/futurehealthindex-2020</u>

The 2020 study comprises original research via a survey of 2,867 healthcare professionals under the age of 40 years old, who have completed their first medical or nursing degree, across 15 countries: Australia, Brazil, China, France, Germany, India, Japan, Netherlands, Poland, Romania, Russia, Saudi Arabia, Singapore, South Africa and United States of America.

www.philips.com/futurehealthindex-2020



Future Health Index Insights:

COVID-19 and younger healthcare professionals

The Future Health Index Insights is commissioned by Philips



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Foreword

Jan Kimpen, Philips Chief Medical Officer



It is no exaggeration to say that the COVID-19 pandemic has had a transformative impact on society. Few of us have been unaffected: from those battling the virus, patients facing delays with routine medical treatment, and thousands of people obliged to quarantine to protect themselves and others.

But frontline healthcare workers are undoubtedly among those who have suffered most. Healthcare workers in the United States of America¹ have reported significant levels of anxiety and stress while caring for patients with COVID-19. Research on COVID-19 in China² reveals high rates of mental health issues, including depression, anxiety and insomnia among healthcare professionals. And, across the board, medical associations report a surge in demand for well-being support services in recent months.³ For most, the pandemic has been an intense experience, from For most, the pandemic has been an intense experience, from which much has been learned. This FHI Insights survey explores the impact of COVID-19 on younger doctors and follows on from our annual Future Health Index 2020 report, published in March. The findings reveal a renewed sense of purpose among many within this group. These same younger doctors report greater appreciation from colleagues and patients alike and, encouragingly, more exposure to new ways of using digital health technologies. And, despite the challenges of recent months, it is gratifying to learn that younger doctors are as committed to their work as ever.

As we navigate the challenges of the pandemic, I invite healthcare leaders to consider these findings as they plan for the future.

1 https://www.nytimes.com/2020/03/16/us/coronavirus-doctors-nurses.html

2 https://labblog.uofmhealth.org/med-u/study-chinese-doctors-shows-mental-toll-of-caring-time-of-covid-19

3 https://managementinpractice.com/covid-19/covid-19-significant-rise-in-number-of-doctors-seeking-mental-health-support/ / https://www.theguardian.com/us-news/2020/may/15/us-nurses-doctors-mental-health-coronavirus

29 Future Health Index 2020 The age of opportunity - United States of America

Overview

Future Health Index Insights: COVID-19 and younger healthcare professionals, is based on research conducted among **500** younger doctors in China, France, Germany, Singapore and the United States of America, in order to assess the healthcare landscape during the COVID-19 pandemic.

The findings reveal how COVID-19 has impacted both their job satisfaction and their use of technology. The research identifies five key trends which healthcare leaders should watch as they focus on reshaping how healthcare is organized and delivered:



Younger doctors are more **committed** to the profession



Collaboration is still a top priority

M E



Telehealth

is crucial but

underused



Interoperability remains an obstacle



Digital technology is pivotal for the coming years

Younger doctors are more committed to their profession

Despite some predictions, the **pressures of working on the frontline** during the COVID-19 pandemic have **not led to a surge** in the number of younger doctors wanting to leave the profession.

On the contrary, **over a third** of younger doctors report being more likely to stay in medicine as a result of their work during the pandemic.



- Of younger doctors say they are **more likely to stay in medicine** as a result of their experiences working during the COVID-19 pandemic.
- While **9%** say they are **more likely to leave** medicine as a result of their experiences working during the COVID-19 pandemic.
- Of the remainder, **53%** of younger doctors report **that COVID-19 has had no effect** on them wanting to stay in or leave medicine

*Future Health Index 2020: doctors, nurses and specialists under 40 years old. Doctors represented 87% of the sample. ^Pulse survey: doctors under 40 years old When compared to their responses on the eve of the COVID-19 pandemic, most younger doctors and healthcare professionals now say they are much **less likely to consider leaving the profession.**

Likelihood to leave the profession:



Collaboration is still a top priority

The Future Health Index 2020 Report highlighted a strong desire among younger healthcare professionals for **increased collaboration in the workplace.*** For many, the pandemic has brought with it a more collaborative, digitally-enabled working environment.

When presented with a variety of options for what they might have experienced during the COVID-19 pandemic, 44% younger doctors reported **greater collaboration** with their colleagues across skillsets.

Looking ahead, many younger doctors want this **stronger culture of collaboration** to become a lasting legacy of the pandemic.

When asked what **changes in healthcare** they hoped would live beyond the pandemic, greater collaboration was one of the top five responses cited by respondents:



27%
 of younger doctors
 cited greater
 collaboration with
 colleagues across
 skillsets

*Future Health Index 2020 Report, p. 23. Report available here: www.philips.com/a-w/about/news/future-health-index/reports/2020/the-age-of-opportunity.html

Telehealth is crucial but underused

During the pandemic, telehealth emerged as a **crucial technology**, not only for ensuring the delivery of patient care but enabling the culture of collaboration younger doctors have come to appreciate. While there has been greater exposure to telehealth during the pandemic, there is still room for improvement.

When asked what would have most **improved their experience** at work during the pandemic:



healthcare professional-to-healthcare professional **telehealth**



better healthcare professional-to-patient telehealth

The pandemic has led to a shift in priorities, with younger doctors **recognizing the immediate value of telehealth.**

In the days before COVID-19*, **artificial intelligence (AI)** was seen as one of the most useful healthcare technologies to improve the work experience of younger healthcare professionals:



However, due to younger doctors' experience **telehealth** is now^ likely to be seen as one of the most useful:



of younger doctors cited **telehealth as among the top digital health technologies** that would have most improved their experience during the pandemic. **53% cited AI**.

*Future Health Index 2020: doctors, nurses and specialists under 40 years old. Doctors represented 87% of the sample ^Pulse survey: doctors under 40 years old



Interoperability remains an obstacle

Many hospitals and practices are not realizing the potential of health data, with most younger doctors (93%) saying they were unable to leverage it to its fullest potential during the pandemic.

Many younger doctors cite **interoperability** concerns around healthcare data:



47%

said that **better integration** of healthcare data between hospitals/practices (e.g., integration between systems/EMRs) would have most helped them leverage the data. The Future Health Index 2020 Report* highlighted the desire for **increased training and support in technology** among younger healthcare professionals.



Many younger doctors said that guidance on which data is appropriate to use would have helped them leverage it during the pandemic.



This echoes the findings of the Future Health Index 2020 Report*, in which portability of healthcare data between hospitals/practices was cited as a factor that would most improve their work satisfaction.

*Future Health Index 2020 Report, p. 8 and p. 9. Report available here: www.philips.com/a-w/about/news/future-health-index/reports/2020/the-age-of-opportunity.html

Digital technology is pivotal for the coming years

Many younger doctors hope that **greater exposure to digital health technologies** will continue after the pandemic subsides.

29%

Increased

appreciation

from patients

When asked what **work-related changes in healthcare** they hoped would outlast the pandemic, technology ranked highly among the various options, with:





29%

Exposure to new types of digital health technologies



technologies

Exposure to new ways of using digital health



28%

Accelerated availability of digital health technologies



27%

Greater collaboration with colleagues across skillsets



Closing remarks

This supplemental *Future Health Index Insights: COVID-19 and younger healthcare professionals report is a snapshot of younger doctors'* **shifting perceptions and experiences,** and how they have been affected by the changes brought about by the pandemic.

The main Future Health Index 2020 report, launched in March, provides a broader analysis of the concerns of this generation of healthcare professionals regarding technology, culture, and education and training.

The perspectives of younger healthcare professionals will be important as the global healthcare industry transforms and evolves.



Download and read the full **Future Health Index 2020** report to read these recommendations in more detail



Methodology:

Future Health Index Insights: COVID-19 and younger healthcare professionals

To assess the healthcare landscape during the COVID-19 pandemic, a pulse survey, *Future Health Index Insights: COVID-19 and younger healthcare professionals*, was conducted among **500** younger doctors in China, France, Germany, Singapore, and the United States of America to gather insights into how COVID-19 has **impacted both their job satisfaction and their use of technology.**

Country	Number of younger doctors surveyed
China	100
France	100
Germany	100
Singapore	100
United States of America	100
TOTAL SAMPLE	500

37 Future Health Index Insights: COVID-19 and younger healthcare professionals

Country findings: Unites States of America

The COVID-19 pandemic has **not had an impact** on most younger American doctors' perspective regarding whether or not they want to remain in the **profession**



66% Two thirds of younger American

doctors say that COVID-19 has had no effect on them wanting to stay in or leave medicine

Of the remainder, slightly more younger American doctors said they are more likely to leave (21%) medicine than to stay in medicine (13%) as a result of the COVID-19 pandemic.

Some of the more **positive effects the pandemic has had on their work experience** may have mitigated against more younger American doctors wanting to leave the profession. Many younger American doctors said they experienced exposure to new types of digital health technologies, and new ways of using those technologies

When asked what they experienced at work during the COVID-19 pandemic, the top answers were:



exposure to **new ways** of using digital health technologies

54% exposure to **new types** of digital health technologies



accelerated availability of digital health technologies

Many younger American doctors hope these changes will become **lasting legacies of the pandemic**:

Younger American doctors hope that the following will **outlast the pandemic:**



exposure to new ways of using digital health technologies

35%

exposure to new types of digital health technologies



34%

greater appreciation from patients

accelerated availability of digital health technologies

Country findings: Unites States of America

While there has been accelerated availability of digital health technology during the pandemic, **telehealth** is a key area where there is still room for improvement

When asked what would have most **improved their experience** at work during the pandemic, younger American doctors identified the following as their top improvements:



re healthcare

professional-tohealthcare professional telehealth 31%

technology that

of patients' vitals

while maintaining

social distancing

enables monitoring

Telehealth has overtaken AI as a **more useful healthcare technology** in the eyes of younger American doctors. They are more likely to say telehealth technologies **(55% NET)** would have improved their experience working during the COVID-19 pandemic compared to AI technologies **(41% NET)**.

Most younger American doctors said they **could not fully leverage health data,** and **more than half** of younger American doctors cited conflicts between different data sets and the quality of data as barriers to using health data during the pandemic.



93%

62%

of younger American doctors say that they were **not able to leverage health data** to its fullest potential during the pandemic.

When younger American doctors were asked what factors **prevented them from using health data related to COVID-19**, they said:



64% the quality of published data is uncertain

55% there is too much conflicting data

of younger American doctors said that **guidance on which data is appropriate to use** would have helped them leverage health data available during COVID-19, followed by better integration of healthcare data between hospitals/practices (51%).



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