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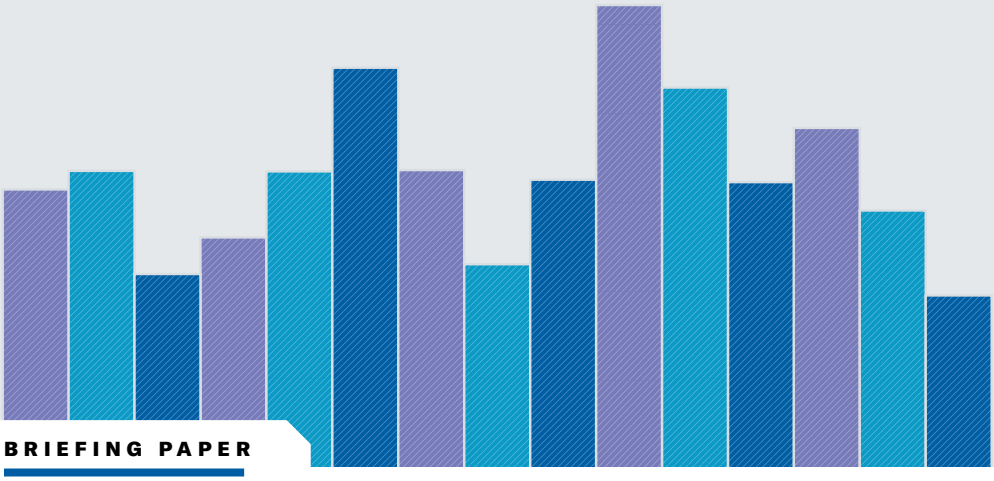

BRIEFING PAPER

Increasing Care Capacity and Clinical Confidence

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What are you doing to boost care capacity and build clinical confidence in your organization?

In this report by Harvard Business Review Analytic Services, C-level leaders, representing different countries and health systems, share their approach.

They speak to the opportunities offered by digital technologies—from best practices in virtual care programs that extend care beyond hospital walls, to smart algorithms driving better decision making, to digital platforms supporting greater collaboration and precision medicine. They also speak candidly about the challenges they're up against and the value they're finding in working with strategic partners to address them.

Their stories point to a shared need to co-create innovative models of care that support more personalized, precise, accessible, and equitable care. I am thrilled to see how digital technologies and partnerships are helping to deliver on this—improving care delivery and providing more predictable outcomes. There's much to gain for both patients and care providers.

Philips sponsored this report, the third in a four-part series, to get health care leaders thinking about ways in which they can strengthen not only their health system, but also health care overall.

For more insights on how health care leaders are meeting today's demands, I invite you to read the Future Health Index 2021 Report.

Frans van Houten
CEO
Philips

Increasing Care Capacity and Clinical Confidence

Health care leaders who seek new benefits from adopting digital health technologies could look to West Moreton Health, in Queensland, Australia, for inspiration. West Moreton Health, which consists of nine public hospitals and centers providing services to more than 312,000 people, established its mobile-enabled care program, MeCare, in 2016, through a partnership with a global health tech company. The pandemic-induced lockdown in Queensland created robust demand for the virtual care MeCare offered, and now, even after that quarantine has been lifted, demand remains high.

"At the height of the pandemic, our virtual consults for outpatients were up to about 67%," says Dr. Kerrie Freeman, chief executive officer for West Moreton Health. "And the interesting thing is, people did not return to their prior frequency of hospital visits when we came out of lockdown. People who can be seen virtually do not want to drive to the hospital, pay to park, walk to the outpatient [department], wait in a waiting room, see a doctor for five minutes, and drive back home. That is very inconvenient for them."

And now, it's not necessary for them, either. Virtual care alone constitutes a broad category of innovations that allow patients to be cared for at a distance, including virtual visits, remote screening prior to hospital admission, and remote monitoring via wearable technology and other remote devices. These innovations allow patients to be treated in settings that are less costly and more comfortable than hospitals.

Health care executives know that telehealth solutions, providing patient care at a distance, are here to stay. Among 2,800 health care leaders in 14 countries surveyed for the Future Health Index 2021 report, which features proprietary

HIGHLIGHTS

Virtual care can **increase access to health care regardless of location**, providing more cost-effective and proactive treatment.

The tech-enabled big picture of a patient journey can provide **holistic and accurate information that allows clinicians to move speedily toward the best course** of treatment, enhancing outcomes and satisfaction.

C-suite leaders are seeing how **strategic partnerships can help them ensure high-quality care** within their institutions at greater cost efficiency, by introducing cutting-edge technical expertise and streamlining processes.

To realize the potential of new digital technologies, many C-suite leaders are finding strategic partnerships to be an invaluable asset.

research by Philips, 42% cite telehealth as a top priority, second only to crisis response preparation (69%). In addition, 31% of health care executives surveyed identify telehealth as an area in most need of investment in preparing their facilities for the future; as an area of investment, telehealth is second only to improved safety for patients and staff (65%).

But telehealth isn't the only technology that boosts care capacity and clinical confidence. Plenty of other digital options are helping to expand the capabilities of health care providers, including predictive analytics, a growing area of health informatics that often includes the application of artificial intelligence (AI) to historical and real-time data for patients. Predictive analytics alerts clinicians and caregivers to the likelihood of various health outcomes for patients, helping to detect early signs of patient deterioration in the hospital and to identify at-risk patients in their homes.

To realize the potential of new digital technologies, many C-suite leaders are finding strategic partnerships to be an invaluable asset. Through them, health care providers can expand both their resources and access to needed expertise, enabling them to deliver effective, high-quality care at greater cost efficiency. "At the moment, many hospitals are buying new equipment and new digital tools directly and trying to implement them. We are not," says Dr. Pasi Lehto, medical director and chief executive officer at Tays Heart Hospital, a subsidiary of Tampere University Hospital, in Tampere, Finland. "Instead, we are buying equipment services in strategic development partnerships, which secure us access to the same equipment and tools, but also benefit us by bringing in new perspectives from a global company." The strategic partnership, Lehto adds, is financially beneficial to Tays Heart Hospital, mostly by reducing the tasks its professionals have to handle and making the facility itself more efficient.

Through a range of new technological initiatives, health care providers are helping clinicians to display qualities that are sometimes described as the three Cs of clinical confidence: caring, communicating, and competence.[1] Meanwhile, health care leaders are choosing strategic partnerships with global health tech companies to help them reap the full benefits of digital health services. This report highlights key technological initiatives for extending care capacity and supporting clinical confidence. It explores the role of strategic partnerships in helping to provide effective, high-quality care with greater cost efficiency. Finally, the report examines how the pandemic has advanced digital innovation in health care, accelerating the need to adopt advanced and interoperable systems, and has set the stage for extending care capacity in the years ahead.

Expanding Reach Through Virtual Care

Health care leaders are adopting innovative digital health technologies and reviewing their processes and facilities. By doing so, they are finding new opportunities to extend care capacity, ensuring faster throughput of patients, higher patient satisfaction, better patient outcomes, and lower costs. C-suite leaders are also supporting clinical confidence, the self-perceived ability to deal with clinical scenarios.[2]

The pandemic has fast-tracked the adoption of technological initiatives worldwide to extend the capacities of health professionals and facilities. Research and Markets, a Dublin, Ireland-based research firm, projected in June 2021 a threefold rise in the global virtual care market, from under $70 billion in 2020 to almost $220 billion in 2026.[3] In the U.S. alone, health providers have reported up to 175 times more telehealth visits than before Covid-19, and it is estimated that the $3 billion pre-Covid-19 market for telehealth may expand to a potential $250 billion share of U.S. health care spend.[4]

In Australia, West Moreton Health established MeCare to support collaboration among specialists and general practitioners who attend to patients with complex chronic conditions. The program is designed to use remote monitoring technology and videoconferencing to help patients manage their own health from home. As a result, when Covid-19 arrived, West Moreton Health was able to use existing infrastructure to rapidly set up a program that supports patients who are required to quarantine in their own homes. It established a virtual "hospital in the home" service to deliver high-quality care remotely.

"When the pandemic hit, we realized early on that our old hospitals were not built for it," says West Moreton Health's Freeman. "But we also realized that many people did not need hospitalization. We were really fortunate that we already had in place a partnership to deliver virtual care in the home, so we were able to very quickly scale up a model from that solid base."

Programs such as MeCare are enabling health care providers to vastly extend the reach of their health care services and provide effective, high-quality care with greater cost efficiency. For West Moreton Health, which serves a rapidly

growing population, keeping preventable hospital visits low is vital. By 2019, within three years of setting up MeCare, West Moreton Health had seen a 35% reduction in preventable hospital visits within the program.[5] The Australian Centre for Health Services Innovation found that the MeCare program delivers a median cost saving of $1,201 per participant per month for a cohort size of 300.

"Our patients say it has changed their lives," says Freeman. "Patient-reported experience measures are through the roof. They feel like they have a guardian angel. They have chronic conditions but are able to have a much better quality of life. They are getting proactive care before they get into a crisis. And they are loving life again."

Through a range of new technological initiatives, health care providers are helping clinicians to display qualities that are sometimes described as the three Cs of clinical confidence: caring, communicating, and competence.

Better Tech, Better Decision Making

Virtual care can increase access to health care regardless of location, providing more cost-effective and proactive treatment. The technologies associated with virtual care, however, are only one part of the story when it comes to extending care capacity and clinical confidence. As the Future Health Index 2021 shows, health care leaders plan in the next three years to become more heavily invested in AI for operational efficiency, integrated diagnostics, predictive outcomes, and clinical decision support. Together with digital health records and telehealth, these four areas of AI fall within the six most commonly cited areas of future investment.

Tays Heart Hospital, which is a full-service hospital specializing in the diagnosis and treatment of cardiac diseases and operates across six locations in Finland, has set up several projects making use of AI and predictive analytics, with the help of its global tech partners. "One of our AI projects searches through electronic medical records for combinations of diagnoses that require special medical treatment," says Tays Heart's Lehto. "For example, a patient may have been diagnosed with atrial fibrillation when they visited Tays Heart Hospital and diagnosed as being at risk for hemorrhage when they visited another specialist elsewhere in our hospital network. Our algorithm can then flag patients with combined diagnoses like these, and send us an alert, so we can adjust the prescribed treatment for the patient."

As Lehto's case shows, an AI-enabled service can enhance care capacity, in the form of personalized treatment, precise diagnosis, faster time to treatment, and improved patient outcomes and satisfaction. By providing proactive identification of health concerns, AI can also support the pillars of clinical confidence: caring, communicating, and competence.

Health informatics is increasingly helping with clinical decision making. Informatics meets health care professionals' needs for clear and accurate information by providing hardware and software to ensure informed decision support throughout the patient journey. For Dr. Steven J. Corwin, president and chief executive officer for NewYork-Presbyterian, a network of hospitals and centers in New York City and the New York metropolitan region, health informatics played a vital role in the response to Covid-19. "Data-sharing has enabled us to have a much more flexible model of staffing," says Corwin. "After the pandemic reached New York, we had to double our intensive care unit [ICU] beds. But we could not double our ICU staff. We had to create a new method of staffing, a pyramidal method, with the most capable intensive care physicians at the top of that pyramid. To accomplish that, we needed to have a rapid exchange of information not only within the hospital, but across our hospital system, too, so that our most capable intensive care physicians could manage more and more ICU patients. That never would have happened had we not had the ability to exchange information rapidly."

One field in which NewYork-Presbyterian seeks to apply predictive analytics is cardiology. "Can we predict who will develop heart failure? Can we predict whose aorta will rupture? Can we predict who will develop atrial fibrillation, and thereby potentially prevent it? Those are big questions in cardiovascular medicine," says Corwin. "You have to examine whether there are tools applicable to those big questions. With aortic rupture, for example, you want to take what is in the electronic medical record, including waveform analysis, echocardiography, magnetic resonance imaging, computerized tomography, and so on, and then see whether you can develop a predictive algorithm. That is something that most, if not all, hospitals would agree that they need outside help to do."

Predictive analytics tools of the kind described by Corwin could strengthen clinicians' capacity to provide precise and personalized diagnoses, thus supporting clinical confidence. As Corwin emphasizes, such advances call for strong collaboration and data integration. "That has got to be the

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way that one looks at it going forward—to break down some of the silos and to utilize capabilities that you haven't tapped into before," he says. For instance, says Corwin, "You don't want to create a silo where you have your hospital-at-home services separated from your hospital-within-the-hospital services. You want to have a fluidity so that it's the same team making the decisions, so that they know the patient outside the hospital and inside the hospital, and they can make better decisions about what's in the patient's best interest."

Corwin also notes that an uninterrupted exchange of information among collaborators is essential. "Years ago, we committed to ensuring every hospital in our system is on the same platforms for electronic medical records. Otherwise, you just can't get the information flow together," he says. However, Corwin points out that informational flow introduces risks that call for expert management. "Now you have issues around free transfer of information, where there are cybersecurity risks."

Beyond the current coronavirus crisis, health facilities such as Tays Heart will continue to benefit from the capabilities enabled by health informatics. "The workflows within the hospital system have become much more complex in recent years," says Lehto. "There is a far greater number of experts working to serve the health of our patients, whether those are doctors and nurses or information technology specialists. So, there is a much greater need for technology that enables collaboration between those experts. We draw on data from more disparate locations, too. We have to pool together data from several sources. And we need technological solutions that help us put all this fragmented data together to see the big picture for our patients."

As Lehto reveals, the tech-enabled big picture of a patient journey can provide holistic and accurate information that allows clinicians to move speedily toward the best course of treatment, enhancing outcomes and satisfaction. Such a holistic view reinforces competence, which is crucial for clinical confidence.

The Role of Strategic Partnerships

To fully realize the potential for AI and predictive analytics, health care leaders are turning to a broad range of partnerships to expand the expertise at their disposal. NewYork-Presbyterian, for instance, has long-standing partnerships not only with global leaders in health technology but also with its associated medical schools at Columbia University and Cornell University. Recently, NewYork-Presbyterian has extended the reach of its academic partnerships to take advantage of the schools of engineering at both universities. "We want to know, how do you do analytics or predictive analytics on multiple data streams? No one's done that yet," says Corwin.

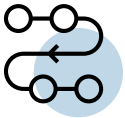
Meanwhile, to take advantage of new digital technologies, many C-suite leaders are developing strategic partnerships with health tech companies. "Together with our partners, we have been able to increase our profitability quite a lot," Lehto notes. He points out that the partnerships make the most of Tays Heart's particular circumstances: "Because our hospital is not too large, we have been able to take a more flexible approach, experimenting with new ways to organize our workforce and our processes. Our partners have played a vital role in helping us to think about how we can do that."

Tays Heart has experienced substantial benefits from the partnership. "We have reduced the number of tasks required for our professionals to do their work, and saved time devoted to those tasks," says Lehto. "For example, our partner helped us to redesign the physical layout of our hospital to reduce the distances between sections for which there is a lot of traffic. And they helped us to standardize the layout within different sections of our hospital, so that doctors and nurses do not have to waste any time locating equipment in a new part of the hospital."

Collaboration between health care providers and external partners needs to be approached with a carefully chosen strategy, according to David Chou, senior vice president and chief information officer for Harris Health System, a health care system in Harris County, Texas. Being highly selective in choosing external partners and making sure to utilize each partnership to its greatest potential should be major goals. "Many mid- to large-size enterprises in the hospital system have 450 to 800 different applications in their portfolio. Now that is a lot to manage," says Chou. "Consolidate that portfolio a little. You do not want to shrink down to five, but maybe shrink from around 450 to around 380. And then you

consolidate to a few large partners. When you have that sort of structure, you can utilize your partners' machine learning, their cloud, and all the rest of their services to the fullest."

Nor should this strategy be limited to external partners. Chou says internal alliances between departments or divisions are important, too. C-suite leaders seeking successful collaborations within their organizations should be prepared to cede greater decision making to their collaborators. "Historically, CIOs [chief information officers] typically try to control all aspects of internal partnerships, which is entirely the opposite of what needs to happen," he says. "C-suite leaders need to embrace other experts. I partner closely with our data scientist office and with the informatics office. My job is to orchestrate all this and to remove barriers while providing the bigger picture, understanding what is possible, getting us thinking strategically, and making sure that our investments are sound. I think most organizations fail by not having a leader that embraces all that."



"We have to pool together data from several sources. And we need technological solutions that help us put all this fragmented data together to see the big picture for our patients," says Dr. Pasi Lehto, medical director and chief executive officer at Tays Heart Hospital.

Meeting the Challenges of Digital Transformation

As health care leaders strive to expand care capacity and clinical confidence using digital health technologies, they must anticipate and deal with many new challenges. One of the toughest challenges for leaders is to ensure interoperability, which involves the capacity of hardware and software systems to exchange information and work smoothly with one another.

"When I started my career 20-plus years ago, we were talking about interoperability. Today, we're still talking about it," says Chou. "Interoperability has improved incrementally over the years. But the problem is not going to be solved anytime soon. That is because many large-scale enterprise systems are based on legacy technology. They are built on programming languages that are not modern, such as COBOL [Common Business-Oriented Language]." Chou notes that managing the interoperability problem is far from the core competence of health care facilities, which would benefit from the expertise of health tech companies.

In the area of AI, Chou sees great benefits in strategic partnerships with health tech companies offering advanced solutions in cloud computing, which would help health care providers access remote data storage and cutting-edge analytics capacities.

"Every big tech giant right now has a health care cloud," he explains. "The aim of that cloud is to ingest as much data as you are willing to share. And upon ingesting that data, they will create some sort of AI or specific algorithm that is going to predict and solve problems. But, without that massive amount of data, that AI and algorithm are useless," says Chou. "It is important for C-suite leaders to understand that you need to be able to go all in with a few partners."

Chou believes health care providers also need to ensure they are making the greatest use of the software and hardware they currently own before seeking to expand the range of their investments—another area where engaging a strategic tech partner would pay big dividends. "It is typical for a health system to adopt some new application or technology and not use it to its full potential," says Chou. "For any application you have, you may be using below 50% of its full features. Before you invest in another tool, think about how you could utilize at least 70% of the capability you currently have. Just keeping everything upgraded to the latest version is a task in itself."

Key Challenges for C-suite Leaders

Health care providers seeking digital solutions that support care capacity and clinical confidence need to address the social and organizational enablers of those solutions, too. At Tays Heart, one essential task for leaders is to help ensure the successful adoption of new digital technologies among clinical staff. "Whenever you ask clinicians to move onto a new system, that change itself is going to be a challenge," says Lehto. "So, it is important that the technology you are introducing uses a familiar interface, is highly reliable, and is not unnecessarily complicated. You do not want to multiply challenges needlessly."

West Moreton Health takes a clinician-driven approach to ensure that clinicians accept digital solutions. "We do not start by asking how we are going to digitize current processes," says Freeman. "Instead, we want to create a whole new way of working clinically. And then we get the digital support around that. That approach gave our clinicians motivation to really innovate and transform. And we stood back and watched the amazing things that they came up with."

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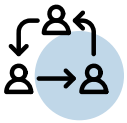


"It's really important for people within health care to broaden their horizon. It's not just about delivering care for a patient in a bed in a hospital. It's about being an integral part of the social network and the social fabric of a town or a city. How do you construct a new paradigm of community care?" says Dr. Steven J. Corwin, president and chief executive officer for NewYork-Presbyterian.

One program that emerged from this clinician-driven approach at West Moreton Health centers on telepsychiatry. During the pandemic, the need for virtual solutions that would provide access to treatment for mental health consumers became an impetus for extending the caring, communicating, and competence essential to clinical confidence. "One of the programs we're doing now is around mental health. The mental health clinicians came in and said, 'We're in these lockdowns. But we still need to see our consumers. We think if there was [an] attempt at a virtual solution, this is what we could do.' And they've now put in place this incredible program," says Freeman. "The innovations come from saying to our clinicians, 'If you had the opportunity to do something really cutting edge and we could support it with the technology, what would that look like?'"

Freeman's advice contributes to a set of considerations, derived from the interviews with global health care leaders in this paper, that can help C-suite leaders in their efforts to raise care capacity and clinical confidence by means of technology. **FIGURE 1**

As digital technologies extend health care providers' reach, C-suite leaders are taking up another challenge—to use that augmented capacity in more equitable ways. At NewYork-Presbyterian, which serves many indigent patients, ensuring greater access to innovations in health care is a key concern. "It's really important for people within health care to broaden their horizon. It's not just about delivering care for a patient in a bed in a hospital," says Corwin. "It's about being an integral part of the social network and the social fabric of a town or a city. How do you construct a new paradigm of community care?"

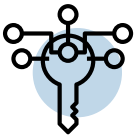
As Corwin points out, technology can help to extend access to care. "With digital health, we have the opportunity to increase access to health care. NewYork-Presbyterian has done well over 1.5 million telehealth visits during the pandemic. But when we examined the telehealth data, we found a disparity between people with means and those without means in terms of the percentages [of people] who access the service. We have to figure out ways to narrow that gap."

FIGURE 1

Twelve Tech Enablers of Heightened Care Capacity and Clinical Confidence

A checklist for C-suite executives based on interviews with innovative global health care leaders

1	Let health care professionals propose innovations that can drive transformation
2	Turn positive adaptations prompted by the pandemic into lasting changes
3	Ensure that technology for clinicians is user-friendly, simple, and reliable
4	Take opportunities to extend telehealth, increasing access to care and meeting community needs
5	Utilize technologies and data to enhance collaboration
6	Integrate multiple data streams to enable predictive analytics
7	Take advantage of the computing power and machine learning offered by cloud computing
8	Seek expert advice to handle deep interoperability challenges
9	Identify and manage security risks introduced by changes in technology
10	Use fewer technologies to their full potential rather than more technologies superficially
11	Leverage partnerships to reduce the burden of selecting, implementing, and maintaining systems
12	Embrace partnerships for meaningful benefit, rather than keeping trusted experts at arm's length



"It is typical for a health system to adopt some new application or technology and not use it to its full potential. Before you invest in another tool, think about how you could utilize at least 70% of the capability you currently have," says David Chou, senior vice president for Harris Health System.

Conclusion

Health care providers around the world are taking advantage of new innovations in digital health care to rapidly expand the reach of their services. In the wake of the Covid-19 pandemic, which has accelerated the need for digital health care technologies, health care leaders have a unique opportunity to prepare their organizations to achieve even greater care capacity and clinical confidence.

For the C-suite, advice from global health care leaders includes letting health care professionals propose innovations; ensuring that technological solutions are highly user-friendly and robust; identifying opportunities in telehealth and predictive analytics; taking advantage of opportunities offered by cloud computing; and using fewer technologies to their potential, rather than many technologies superficially.

C-suite leaders are seeing how strategic partnerships can help them ensure high-quality care within their institutions at greater cost efficiency by introducing cutting-edge technical expertise and streamlining processes. "The key is to recognize that hospital systems are not innovation centers," says Harris Health System's Chou. "Rather, they are primarily users, utilizing commercial software as well as possible without much custom development. That is why, if you are a health care leader, it is important to go all in with long-term partnerships that make it possible for you to take advantage of innovation that you cannot build yourself."

DISCLAIMER

The Future Health Index 2021 examines the experiences of almost 3,000 health care leaders and their expectations for the future. The research for the Future Health Index 2021 report was conducted in 14 countries (Australia, Brazil, China, France, Germany, India, Italy, the Netherlands, Poland, Russia, Saudi Arabia, Singapore, South Africa, and the United States). The study combines a quantitative survey and qualitative interviews conducted from December 2020 to March 2021.

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