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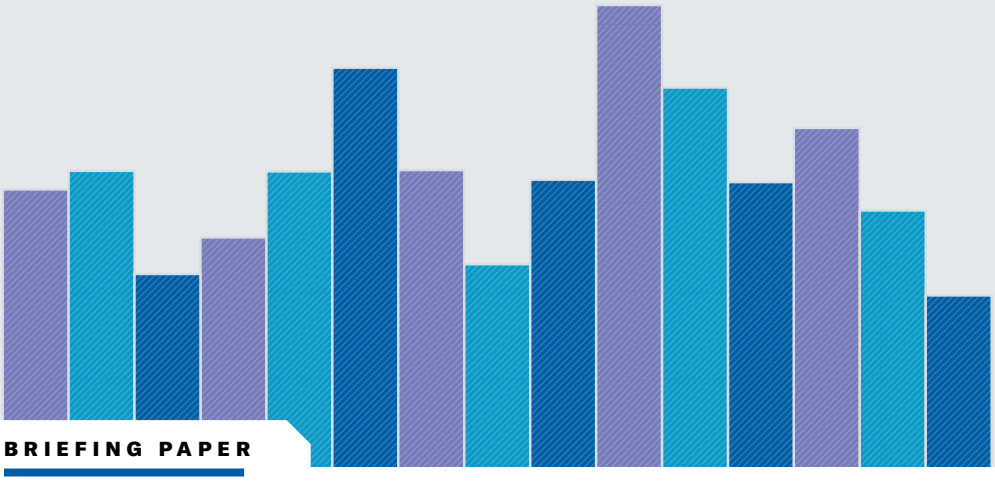

BRIEFING PAPER

Addressing the Efficiency Imperative in Health Care

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Addressing the Efficiency Imperative in Health Care

As health care facilities around the globe strive to provide high-quality and affordable care, C-suite leaders are paying renewed attention to a long-standing imperative: the need for clinical and operational efficiency. Since such efficiency impacts quality of care, finances, and other key performance indicators, it merits a place on C-suite boardroom agendas.

The impetus for efficiency has been increased by the pandemic, which has called for rapid adaptation to new circumstances combined with high clinical confidence. "When the pandemic started, we had fewer than 40 beds in the intensive care unit. In a short time, we needed five times that," explains Patrik Puhony, director of infrastructure and production management for the medical diagnostics function at Karolinska University Hospital in Solna, Sweden. "Department heads became more responsible and accountable. We had to focus on a range of data, from pandemic data to help predict future patient numbers to radiology data that was showing us new things in people's lungs and even brains. And we worked across organizational units to balance the needs of Covid-19 patients with other patients."

The demanding and unpredictable environment placed enormous strain on precious resources. "We have highly trained staff, complex and expensive equipment, and a lot of patients that need our care. So how do we best use our resources, not only for patients but also for taxpayers since they're funding our business?" Puhony says.

Health care leaders and their teams are finding creative ways to be more efficient with their time, expertise, budgets, equipment, and other resources, and the financial rewards are notable. In Karolinska's case, sophisticated data analysis and a deep understanding of clinical needs contributed to the hospital's turnaround from a significant loss in 2019 to a profit in 2020.

HIGHLIGHTS

C-suite leaders are paying renewed attention to a long-standing imperative: **the need for clinical and operational efficiency**. Since such efficiency impacts quality of care, finances, and other key performance indicators, it **merits a place on C-suite boardroom agendas**.

As health care leaders continue to invest heavily in efficiency-raising health technologies, they may find that **strategic partnerships are the most effective way to achieve their goals**.

If health care leaders can steer their initiatives successfully, the rewards of efficiency await, including **enhanced satisfaction of patients and health care professionals**, achieved more quickly, with lower expenses, and with less effort.

"Department heads became more responsible and accountable. We had to focus on a range of data, from pandemic data to help predict future patient number to radiology data that was showing us new things in people's lungs and even brains. And we worked across organizational units to balance the needs of Covid-19 patients with other patients," says Karolinska University Hospital's Patrik Puhony.

"Management collaborated closely with clinicians, and we made data the basis for our decisions," says Puhony. As an example, he points to how data analysis helped Karolinska find an optimal balance between Covid-19 and other patients in ICU beds so that the beds were constantly accounted for and fully used.

A global commitment to health care efficiency is evident from the Future Health Index 2021 report, which features proprietary research by Philips. The survey of almost 3,000 health care leaders across 14 countries revealed that among their top-three priorities, more leaders include driving efficiencies in their health care facilities (32%) than factors such as patient satisfaction (17%) or staff satisfaction (11%). Indeed, leaders believe that to prepare for the future, their hospital or health care facility will need to invest in areas related to efficiency, such as improving workflow efficiency (20%), integrating patient data systems (18%), and raising operational efficiency (16%).

What follows in this report is an exploration of contemporary trends in clinical and operational efficiency, including insights from experts on effective initiatives. The report identifies areas of current global investment in efficiency-raising technologies while emphasizing the importance of developing strong digital strategies, supporting tech training and change management, and keeping business imperatives firmly in sight. It also discusses the benefits of fostering strategic partnerships that give health organizations access to expertise in areas outside their core strengths. Such partnerships can allow health care leaders to strengthen their offerings without stretching their resources too thin.

The Journey Toward Enhancing Efficiency

Across the health ecosystem—among hospitals, imaging centers, and health systems, and throughout cardiology, radiology, oncology, and other specialties—optimized use of resources and an improved workflow can unlock systemic improvements and drive innovation. For instance, a cardiac patient's history of symptoms, tests, diagnoses, and treatments may be integrated and made easily accessible and actionable to a care team. The resulting workflow improvements provide clear and accurate information for supporting clinical decisions and predictive and personalized care for patients, and eased burdens on health care professionals.

To start the journey toward streamlining operations, health care leaders should prioritize improving the entire patient journey, ensuring comfort and quality from patients' first interactions with staff to their treatments on-site to their discharge and home care. "I think about ways to use resources so that nurses won't spend so much time focused on technology, but on patients," says Zennia Ceniza, vice president of clinical operations at Salem Health Hospitals and Clinics, based in Salem, Ore. "When it's poorly designed, technology can be a distraction from care." Ceniza adds that health care leaders should prioritize listening to nurses and other health care professionals about what is and is not working.

Similarly, Karolinska's Puhony advises health care leaders to keep an eye out for inefficient tools or processes at their facilities. "We're seeing a trend of decreasing conventional radiology, like X-rays for lungs and skeletons, being replaced by more recent technology, like computed tomography [CT] scans," he explains. "We can reduce conventional radiology equipment, freeing up money to spend on our needs for [other] equipment or personnel."

When hospital leaders at Karolinska noticed that equipment maintenance was reducing access to facilities and creating inefficiencies, they made adjustments to the maintenance schedule. For instance, instead of scheduling maintenance for various pieces of equipment at different times in a room that contained CT equipment, ventilation, and other items, Karolinska ensured that all maintenance took place at the same time, minimizing the period during which the room was unavailable to patients.

Some changes initiated by leaders have an incremental impact. Other changes are more radical, including offering care to patients at home through telehealth services. Margot Mains, CEO of Illawarra Shoalhaven Local Health District (ISLHD) in New South Wales, Australia, says telehealth mitigates the strain of patient ovecapacity and can increase

patient satisfaction as care takes place at home; it can also save on the expenses of hospitalization and ensure that patients are not exposed to hospital-related complications. Telehealth additionally avoids the difficulties of managing care for patients who live far from hospitals or in residential care facilities.

"We'd been discussing virtual care for about a year prior to Covid-19—and then the pandemic sped up the decision. One of our strategic priorities is now to promote care for people in their own homes," Mains says. "We've established a virtual care center in partnership with a third-party digital health care company to enable safe remote monitoring of Covid-19-positive patients, reducing the risk to staff and others in the community and enabling rapid planned escalation to the hospital if required." Boosted by the partnership success, ISLHD has now expanded the use of telehealth to new areas, including for people with chronic obstructive pulmonary disease (COPD), heart failure, and diabetes. Plans are progressing to provide remote monitoring and support for a range of mental health conditions.

Efficiency-Enhancing Digital Health Technologies

There's no shortage of enabling technologies on the market to address issues, but some technologies are drawing particular interest from health care leaders. The Future Health Index 2021 report highlights the enhanced use of electronic medical records (EMRs), telehealth, and artificial intelligence (AI) as areas of strong investment, currently or over the next three years.

As health care leaders well know, an electronic medical record provides a digital account of a patient's health history—but such records are not simply replacements for a paper equivalent. As Nicolette de Keizer, professor of medical informatics at Amsterdam UMC in the Netherlands, notes: "If you don't have a vision of how you want to use EMR, you need to consider decision support, workflow management, [and] learning from data. There's so much more to offer than entering notes and looking up lab notes." De Keizer's point emphasizes the idea that when C-suite leaders commit to adopting new technology, they should ensure that it is employed in a way that makes use of its full value.

Salem Health derived the most value from its EMR system and was able to integrate it fully with hospital systems by working with health tech partners, Ceniza says, adding, "We put as a requirement that there has to be full integration and information must flow smoothly within the system."

As a result of its strategic partnership, Salem Health now draws rich data from EMRs for a range of process improvements, says Ceniza. Data from EMRs feeds into Salem Health's recently implemented acuity system, which determines how much nursing care each patient requires. Data from the EMR system establishes a realistic expected workload for nurses, grounded in patients' actual needs, and can thus increase satisfaction for nurses as well as patients.

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Another use for EMR data is to regulate patient flow efficiently; Salem Health can discharge patients as soon as they are identified on their EMR as having met suitable milestones. Such efficiency can increase patient satisfaction by avoiding stressful delays and reducing hospital stay expenses, and also ensures that beds are occupied by those who truly need them.

To unlock the efficiencies of telehealth, technology for virtual care needs to be carefully selected for capabilities and have dedicated resources that enable telehealth to be more than just a video call. True hospital-to-home monitoring can serve to catch problems before they become acute, move long-term care for chronic conditions to the home, shift care from reactive to proactive, and improve behavioral or population health.

Remote monitoring tools to track patient data outside health care facilities include wearables, tablets, SIM cards for phones, and installed monitors. "Remote monitoring tools can provide biometric data for people with a range of issues, such as heart failure, COPD, diabetes, dementia, and chronic mental health conditions—indeed, any condition where biometrics measures supported by health coaching, patient goal setting, and care navigation can make an impact," ISLHD's Mains explains. She points out that such tools can empower patients to review and understand their own health data.

Artificial intelligence will play a key role in analyzing all this data to identify health information for individual patients and uncover broader patterns among groups. The Future Health Index 2021 report shows that over the next three years, health care leaders plan to invest in AI to optimize operational efficiency (37%), integrate diagnostics (32%), predict outcomes (30%), and provide clinical decision support (24%). Puhony is inspired by the opportunities provided by AI, but also counsels leaders to make sure that any AI acquisitions will pay off in clinical practice.

Reflecting on the efficient use of technology to its full capacity, Puhony says, "At the hospital, our technical staff implement our needs by working together across organizational boundaries. That way, we don't have the redundancy of different teams working on similar technologies. Of course, we're also willing to draw on external expertise."

Mains also notes the importance of leaning on a partner with expertise. "We need people who not only have expertise in the technology but also think about the behavior, the processes, and the things that need to change as a consequence," she says.

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Ensuring Successful Implementation

Health care leaders confirm the need for a holistic approach to increasing efficiency. Consider the speed at which health care organizations need to be able to adapt to changes—such as when inpatient numbers rapidly increase or care shifts from largely in-person to virtual settings. Such agility cannot be achieved by making decisions within isolated silos; health care systems must consider undertaking integrated, system-wide initiatives across all departments or functions.

Bearing in mind the holistic nature of health care efficiency, key areas for health care leaders include setting a mature digital strategy across their health system, training teams and embracing change management for potentially complex initiatives that go beyond individual silos, and keeping their broad business imperatives firmly in sight. The health care leaders interviewed for this report offer advice for optimizing each of these key areas. Such advice includes the option of using data analysis to evaluate the efficacy of medical procedures, the value of consulting a broad base of stakeholders when selecting equipment, and the possibility of finding a strategic partner to support measures that demand expertise beyond a health provider's core functions.

Developing a mature digital strategy

Efficient operations are facilitated by digital transformation, which yields precise, accurate, structured, and interoperable data to support decision making. As C-suite leaders conduct meetings with clinical leaders and managers to set up and refine their facilities' systems, they should develop a mature digital strategy, prioritizing seamless compatibility among systems. A key consideration in developing a strong digital strategy is data management. Hospital and care facilities house vast amounts of data, but currently, much of it is siloed, unstructured, and unsuitable for mining. "Users may not be aware of the importance of recording data in a structured way, or might lack time or training," says Amsterdam UMC's de Keizer.

In addition, it would be futile for C-suite leaders to promote and invest in the collection of data without knowing the

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"why" behind it. "Often organizations collect data without knowing why they're amassing it and what outcomes they're trying to measure. You need to focus on the data that matters," Mains explains. "What needs to be checked to measure the impact of your services?"

Mains provides examples of the value that data analysis has brought to ISLHD. "We saw that we were ordering an unusually high number of CT scans, so we investigated the causes to look at a range of parameters available through different data sources. By bringing these results together, we got a picture of what was happening with clinicians ordering CT scans. There were some strong clinical reasons, but we also found that new scans were being ordered without taking into account previous scans that would have given the information that was needed," she says. And on the personnel side of health care, she notes that data has enabled ISLHD in some areas to establish efficient rostering and understand overtime requirements.

Since health care facilities benefit from broader data, "it is crucial for consistent data standards to be applied in order for facilities to share data with one another, national quality registries, and other sources," de Keizer says. This issue presents a broad challenge of coordination, and health care leaders cannot resolve it working on their own—though they can seize opportunities to work toward identifying and implementing such standards.

Effective data management should include the use of data to help avoid crises. Ceniza notes that Salem Health is working with a third-party organization to ensure that medications are delivered safely and on time. The delivery system includes data on the quantities of medication in stock and their expiration dates; the system ensures that facilities will not be depleted of medications or stocked with expired items.

Ceniza also points out that executives should not assume that their technology will always be functional. "We have to ask: if the system goes down, what is the backup option? It's not just about advanced technology but also planning in case one day your system goes down." For example, Ceniza says, a cutting-edge but nonfunctioning EMR system is worse than old-style medical records recorded on paper. Plans for system failure are available, from regular system testing and data backup to emergency operations, and Salem Health's health tech partner has ensured that contingency plans are in place.

Training teams and embracing change management

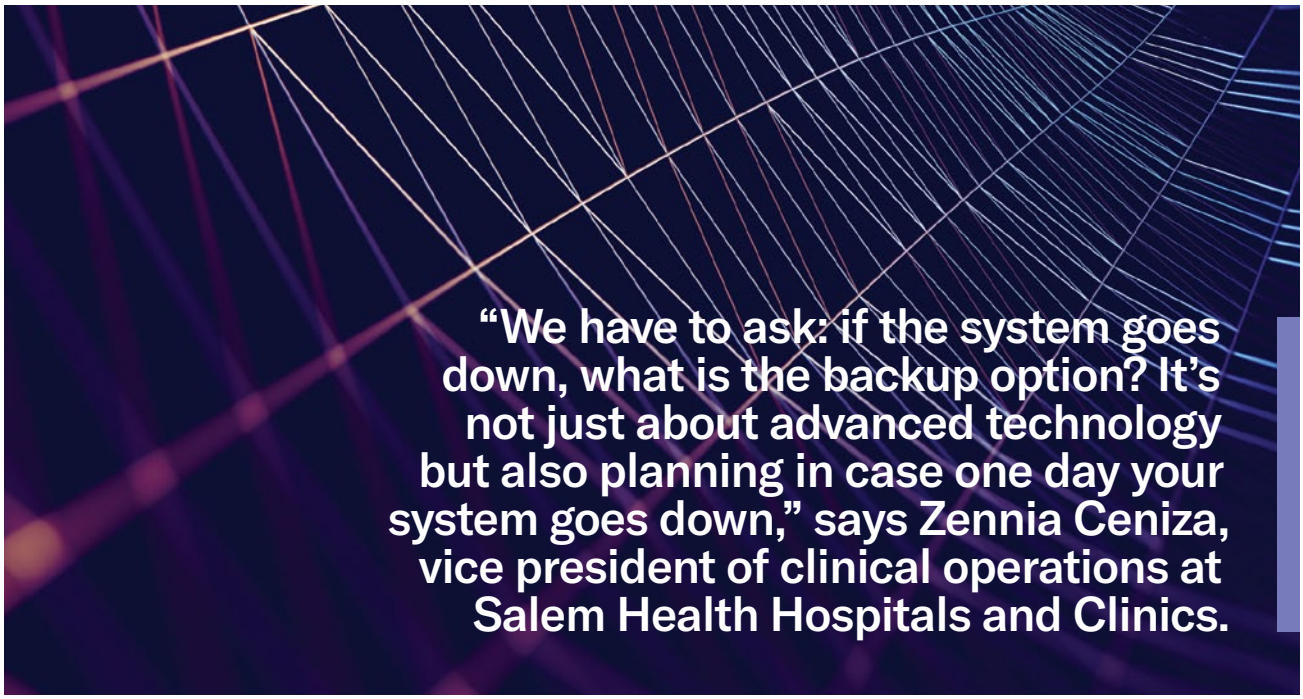
As a new system is implemented, "users should be in the sandpit, deeply engaged and involved at each stage," Ceniza says. She further explains that staff dealing with EMRs, for instance, do not wish to engage with multiple screens and complex requirements. Busy nurses and physicians must be able to input and read information quickly and smoothly.

Once a system is ready to implement, a facility must prepare its employees for new ways of working and listen to their insights and concerns. Indeed, according to Mains, this process of change management is so important that "I expect to see it provided for in the budget of any efficiency-related initiative. A system fails when it's superimposed on an organization where key people haven't understood it, seen its benefits, or been a part of shaping it. People don't waste their time on it."

Broad consultation should be a priority even for equipment replacement. "We don't wait until our equipment's end of life," says Ceniza. "In good time, we make a plan for changing or replacing equipment. I ask for opinions from engineers, nurses, physicians, pharmacists, everyone on whom the equipment has an impact." Ceniza also advocates consulting with strategic partners. At Salem Health, one result of its consultation with a health tech company is that the features of beds in the organization's facilities were standardized. A single standardized type of bed, according to Ceniza, allows nurses to handle beds in facilities with relative ease, assists with the development of repair expertise among the facility and maintenance teams, and can make for a more favorable purchase price.

Keeping business imperatives firmly in sight

Unsurprisingly, an executive who proposes an initiative should also present an effective business case, "bringing data



and analysis to show persuasively that the initiative would yield higher efficiency and greater value to the health care facility,” Puhony says. The initiative should fit well within the system, be compatible and interoperable with preexisting elements, and be appealing to staff.

Puhony notes the importance of choosing the right metrics for identifying issues and checking the effectiveness of initiatives. Metrics may track time (such as the delay between examining a patient and acting on the findings), cost (such as spend per patient), or quality (such as accuracy of diagnosis or the crucial but more subjective topic of patient experience). The desire to see improvements in findings tracked by metrics of no-show radiology appointments prompted Karolinska to remind patients via SMS of their upcoming appointments, reducing periods in which equipment went unused, Puhony says. The facility was then able to examine more patients over a similar time period—a more efficient and effective use of its resources.

By entering health tech partnerships, health care facilities can move faster than by working alone. “At Karolinska we have a mix of competencies,” Puhony says. “We have engineers like me, and economics experts, and the clinical staff. But health care is so complex, drawing from many different areas. For those areas where we don’t have competence, we need partnerships.” Puhony offers an example from radiology at Karolinska. “When we were constructing the new hospital building in Solna, we had just a small window of time when all the radiology equipment was to be installed. We didn’t have the resources to do it.” He notes that it would have been impractically difficult to deal with a range of different suppliers. “We chose one overall partner for installation, operations, and ongoing maintenance of the equipment. It was a huge step for us—much easier to handle than dealing with complex installations ourselves.”

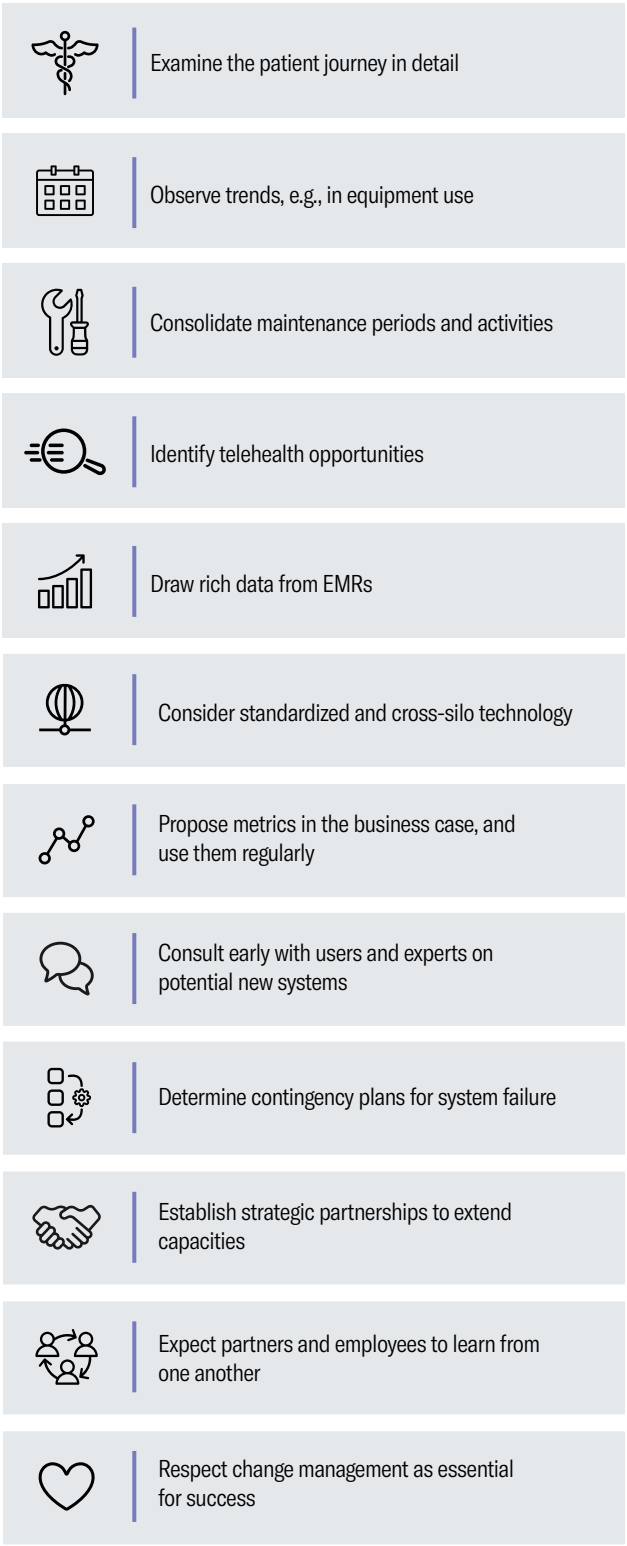
Mains notes that a health tech partner helped ISLHD set up a contract covering medical imaging services, equipment, and related areas. “[Our partner] offered different skills, databases, and a whole range of expertise that we don’t have internally at their level. And also, by partnering on virtual care center expertise, which we were establishing for the first time, we were able to move quicker. The power of what they could bring in has been absolutely critical. And it’s not a one-off but an ongoing development.”

When bringing in external partners, health care leaders should ensure that key internal stakeholders are part of the solution, both to learn the new technology and to help adapt it. At the same time, executives can expect their partners to become increasingly familiar with a facility’s needs. “How can third-party suppliers become a partner in the care process? They need to understand our care process well. And we, in turn, need a strategy and structure in place for partnering with them, from regular discussions to legal contracts,” says Puhony. Among other things, the C-suite must keep these needs in mind when picking a strategic partner and developing plans to improve clinical and operational efficiency at their organizations. **FIGURE 1**

FIGURE 1

Steps to Heightened Health Care Efficiency

Checklist for raising efficiency, from identifying opportunities to managing changes



Conclusion

Health care leaders are operating amid increasing pressure and complexity, factors that are fueling the drive for efficiency. But if executives can steer their initiatives successfully, rewards await, including the enhanced satisfaction of patients and health care professionals, achieved more quickly, with lower expenses, and with less effort.

The business case for clinical and operational efficiency is indisputable, given long-term and sustained pressures on resources. Yet this goal is challenging to achieve, given the complex and dynamic nature of patient needs, health care resourcing, broader health environments, and technological systems to be selected, implemented, maintained, and refined.

As health care leaders continue to invest heavily in efficiency-raising health technologies, they may find that strategic partnerships are the most effective way to achieve their goals. "Our core expertise is in caring for patients," Puhony says, "so it's not necessary for us always to implement or maintain the technology ourselves. For that, we're willing to draw on the best experts."

DISCLAIMER

The Future Health Index 2021 Report 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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MCCRE21000821