A Siemens Healthineers survey of 30 hospitals

Streamlining care along patient journeys

Transforming operations to improve care performance based on patient flow, pathways, workflow management and staff communications.

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SIEMENS Healthineers

Executive Summary

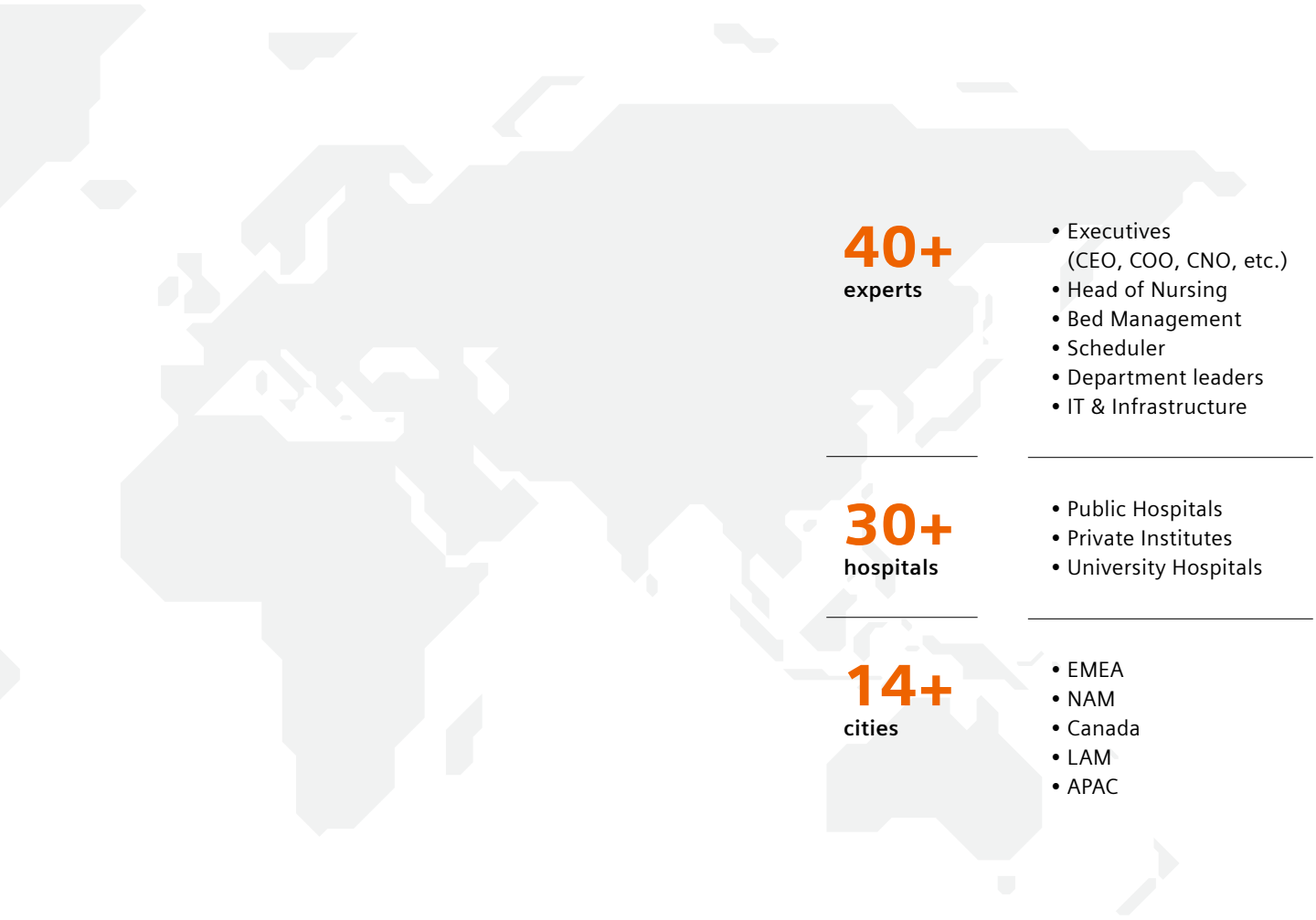
In recent years, healthcare has begun a complex transition from fee-for-service systems to value-based care, in which health systems are reimbursed according to quality of care and patient outcomes. Value-base care encourages providers to anticipate patient needs to improve outcomes and reduce costs. In this context, value is determined based on various aspects of care, including quality, cost, utilization, staff satisfaction, and patient experience.

The complexity of hospital operations today demands solutions to improve patient flow, pathways, further improve hospital workflows and communications, create better staff experiences, and address pain points. The key to success in focusing on these issues is a strong and long term partnership with a technology partner who understands the clinical, workflow, and financial imperatives of healthcare providers.

Through Value Partnerships, Siemens Healthineers helps provider organizations transform operations to optimize patient pathways and improve care performance. Value Partnerships combine holistic medical technology management and digitalization into a long-term, performance-oriented engagement that focuses on the creation of value.

Siemens Healthineers surveyed over 30 hospitals in 14 cities in North America, Latin America, Asia Pacific, Europe, and the Middle East. Over 40 experts were interviewed – chief executives, heads of nursing, schedulers, department leaders, bed management specialists, department leaders, and members of the IT and infrastructure support team – to identify their needs and challenges. From these discussions, the respondents expressed the following common needs: to improve enterprise efficiency, increase staff satisfaction, and improve the patient experience.[1]

This report will present the findings of the survey, as well as the emerging technology, value added services, consulting and transformation, and analytics that can transform patient care into a seamless and optimal experience.



40+
experts

- Executives (CEO, COO, CNO, etc.)
- Head of Nursing
- Bed Management
- Scheduler
- Department leaders
- IT & Infrastructure

30+
hospitals

- Public Hospitals
- Private Institutes
- University Hospitals

14+
cities

- EMEA
- NAM
- Canada
- LAM
- APAC

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Introduction

Today, healthcare providers are under pressure to do more with less, reduce patients' length of stay, improve staff satisfaction and patient experience, and ensure their patient pathways and procedures are based on real-world data obtained through validated measurement at individual institutions.

At the same time, patients are concerned about non-routine healthcare expenses, and rising out-of-pocket costs. About 70% of patients use digital resources to research physicians and check their health status, demonstrating the growing importance of digitalization.

In this environment, hospitals are attempting to shift their focus to achieve key performance and efficiency goals:

- Reduce the cost of solutions, thereby improving efficiency
- Improve health outcomes through disease management and preventive care
- Improve the patient experience
- Provide healthcare professionals with solutions that improve their experience and support patient management and care.

Over the next six years, long-term changes, such as new reimbursement demands that require more outcomes and patient satisfaction data, will exert even greater pressure. This will drive continuing demand for increased return on investment for healthcare and insurance expenditures and will drive innovations that increase operational, clinical, and financial efficiency.

Digital health innovations that increase patient engagement will become increasingly important, linking clinical, diagnostic, and remote care data for seamless treatment. Positive trends, such as patients monitoring their health with medical devices, offer healthcare organizations the opportunity to empower patients to become equal partners in their own healthcare. Other trends, such as aging populations and healthcare personnel shortages, will challenge the momentum of these improvements and drive further enhancements in efficiency and performance.

This report, and the survey that informs it, are designed to assess the system-wide operational challenges that affect healthcare institutions across multiple markets, and to explore potential solutions to help providers meet these challenges now and in the near future.

Survey methodology

To understand how the healthcare industry is responding to these anticipated changes, Siemens Healthineers conducted a global survey of healthcare professionals in public, private, and university hospitals. Over 40 experts were interviewed, to identify immediate and anticipated challenges in the industry. These experts included chief executives, heads of nursing, schedulers, department leaders, bed management specialists, department leaders, and members of the IT and infrastructure support teams, to ensure that the resulting data reflected holistic views of healthcare systems.

The results of these interviews were compiled and tabulated to enable identification of key trends and challenges within individual institutions, and to see the extent to which these trends and challenges applied across multiple institutions in diverse markets. What follows are key findings with broad applicability, and examples of how these trends and challenges play out on the ground in various hospitals.

Improving workflow for enhanced patient and staff experience

Respondents' key challenges:

- Inflexible workflows dictated by aging systems
- System integration within health community
- Lack of transparency in provider and patient schedules
- Burdensome admission and discharge procedures

Improving workflow management for an optimal patient experience

Healthcare organizations can ensure greater patient engagement with value-based, coordinated care. Digital engagement solutions may help with this care coordination, by increasing patient adherence and ultimately improving clinical outcomes and sparking conversations between patients and their providers. By ensuring continuity of care and convenience with a well-coordinated system supported by IT infrastructure, hospitals can increase patient satisfaction and general health and wellness.

Most of the hospitals that participated in the survey struggle with outdated systems, inflexibility of workflows, and an inability to scale services up or down where needed. Urban health systems find it difficult to keep pace, especially where rapid urbanization results in unhealthy living situations.[2] The hospitals who participated in this study range from medium-size facilities to large multi-site hospital organizations in North and South America, Japan, Singapore, and Europe. Patient populations are aging globally, while legal regulations and cultures vary. Some hospitals focus on cardiology, oncology, geriatrics, and pediatrics due to patient needs in their region. Others have a role as a research institution, in addition to supporting their regional population. Cultural demands can hinder a hospital's ability to restructure, or influence a hospital's care workflow, providing extended care for patients without a caretaker at home. These are important reminders that hospitals treat people, not diseases or injuries.

By improving the patient experience with a better workflow, hospitals can also see improvements in resource and capacity management, improving their bottom line. Patients actively pursue the best value for their investment in healthcare, showing preference for process efficiency and a positive environment without tedious, time-consuming delays. The key values of quality healthcare are: clinical effectiveness, safety, and sound, patient-centric processes.

Key findings in patient flow in healthcare

Executives from 30 hospitals worldwide were interviewed about issues that can affect patient flow

52.1%

Third-party collaboration, which can hinder patient flow when not integrated in hospital systems

34.7%

Admissions, including no-shows and prioritization

30.4%

Patient care scheduling

30.4%

Discharge difficulties

21.7%

Patient transfer issues and bottlenecks

Improving staff experience through better communication with patients

Key challenges for clinical staff include a lack of coordination of care across multiple care settings, and lack of time for thorough communication with patients. By improving the level of transparency on resource availability and patients' statuses, staff can plan better, anticipate needs, and act on priorities with improved collaboration and communication. Reducing resource bottlenecks smooths the patient flow by reducing unnecessary tasks. Due to the COVID-19 pandemic, frontline staff have suffered from burnout, fatigue, and illness, leading to high workforce turnover. This crisis-driven stress has forced many organizations to revamp their structures, or search for ways to improve their efficiency. According to previous research among single disciplines, negative behaviors are associated with negative patient outcomes; decreased productivity; increased absenteeism; and reduced employee retention, satisfaction, and engagement.[3]

In many of the hospitals surveyed, positive or negative staff experiences were shaped by team communication, satisfaction in their jobs, and the ability to move forward. While country regulations might improve the staff experience, by setting salary rates or standardizing working conditions, there is still a gap between workforce demand and supply. In some countries, vacancy rates may reach as high as 30% on average in 2025 due to slow labor force growth and increased diversity and age.[4]

The hospitals surveyed had staff suffering from high workloads and a lack of transparency in healthcare provider schedules and patients' statuses. Physicians were dissatisfied with low pay and were reluctant to relocate to less-desirable branches of a hospital system. Upper management found it difficult to grow or reduce their hospital's size, due to an inability to incentivize staff. Communication issues were mentioned, such as leadership silos and lack of communication technology. Staff at hospitals felt overwhelmed with information, had unpredictable workdays, and were resistant to change in their roles and responsibilities.

From an operations perspective, a typical 500-bed hospital in the US loses approximately $4 million a year due to poor communication practices. These inefficiencies directly affect the hospital staff, with physicians reporting an average of 45 minutes of wasted time daily due to breakdowns in communication.[5] More seriously, 80% of medical errors also originate from miscommunications between healthcare professionals. For example, in an investigation of 23,000 medical malpractice lawsuits, over 7,000 were related to poor staff communication, resulting in approximately 2,000 deaths and $1.7 billion in costs.[6]

Better patient flow and resource management could improve the staff experience at each hospital, reducing complexity and redundancies in the different systems.

Patient flow

Respondents' key challenges:

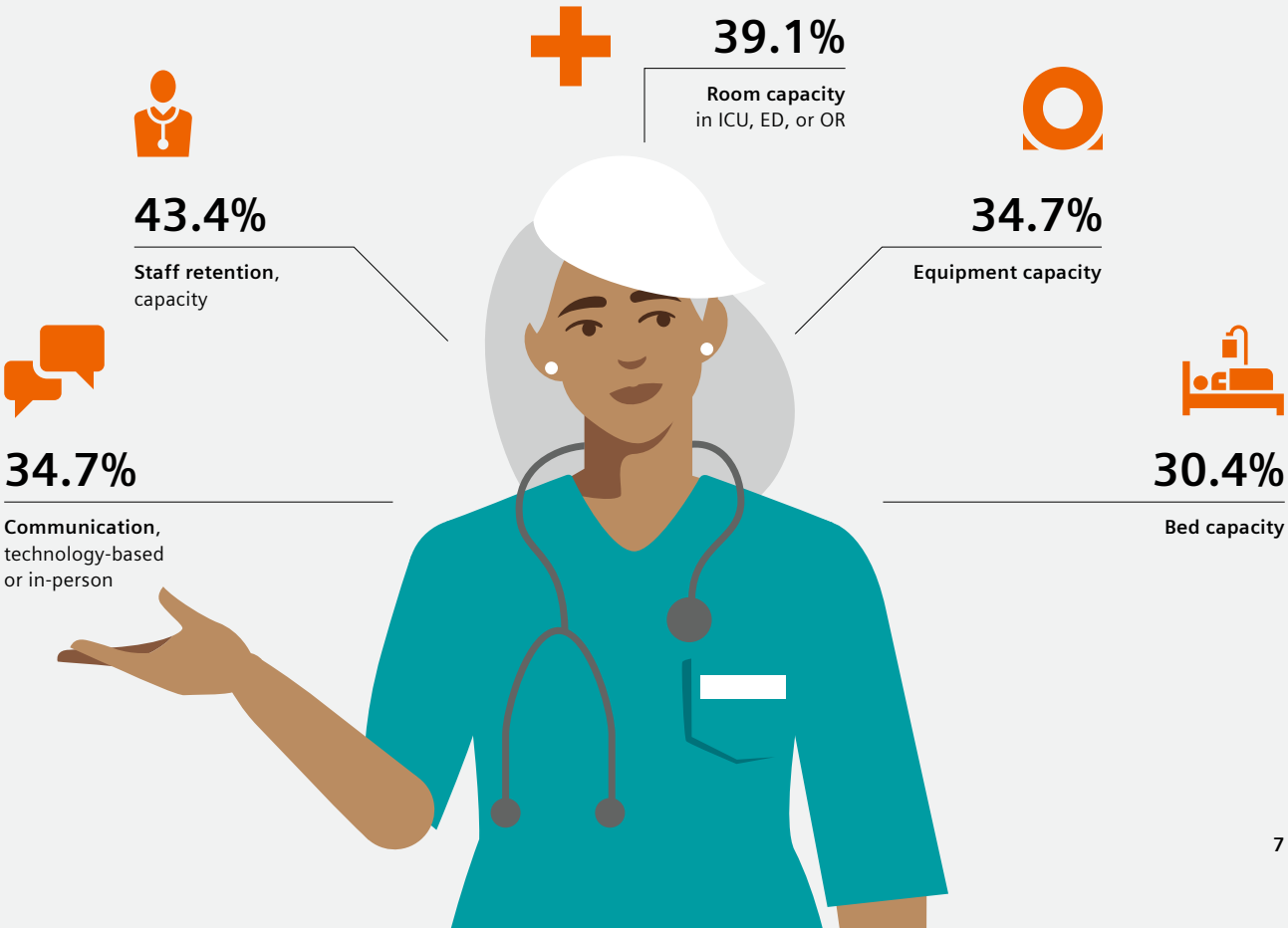
- Long admission wait times
- Complexity of pre-authorizations
- Insufficient prioritization
- Insufficient preparation for transfers or discharges

Data provides the insights needed to transform and optimize patient flow through the hospital ecosystem and extended care continuum. Whether providing benchmark metrics on length of stay for patient populations with similar disease profiles or providing resource and capacity management, tailored insights can help healthcare organizations make data-driven decisions.

The goal of understanding patient flow is to ensure that throughout the continuum of care, the patient experiences excellent value, efficient processes, and a positive environment. C-suite executives see expansion of digital health as part of a larger strategy to integrate electronic health records (EHR) with legacy systems and digital engagement solutions to treat the whole patient, efficiently. This data-driven approach also helps healthcare provider organizations retain staff, balance resources and capacity, and use analytics to deliver that high quality patient experience.

Key findings on healthcare workflows and staff experience

Executives at 30 hospitals worldwide were interviewed about issues that can affect workflow



Better admissions for improved patient flow

Issues with patient flow can begin prior to admission, with long wait times or patients not showing up for their scheduled appointments. By mapping out the flow of patients from pre-admission to discharge and homecare, hospitals can identify delay points or costly re-admission risks that can overstress their resources. Hospitals struggle with queuing and prioritization at booking, which can lead to patients leaving prior to admission.

Previous research on waiting times, service times, and patient satisfaction demonstrated common delays in patient care due to long wait times. For example, in Canada, the average time spent from triage to assessment in 90% of ED visits ranged from 47 to 229 minutes, much longer than the recommended 120 minute maximum. Similarly, in China, average wait times at a tertiary hospital were 98 minutes, with some patients waiting as long as 13.5 hours for their preferred provider. In Malaysian public hospitals, the average patient wait time from registration to prescription is over 2 hours, while the average time spent in a medical consultation was just 15 minutes. Similarly, at one tertiary hospital in the US, 61% of patients waited 90 to 180 minutes for their outpatient visit, with 36.1% spending less than 5 minutes with their provider.[7]

In this survey of 30 hospitals, Siemens Healthineers identified the different pre-authorization requirements for reimbursement from insurance companies can lead to admission delays, or even have an effect on length of stay. One respondent reported that pre-authorization requirements wasted up to 30% of admissions time.

One respondent reported that a lack of consistent queuing information at registration (between counter registration, kiosk registration, and mobile apps) and no prioritization for urgent cases, meant that waiting times could be long without transparency. Lack of prioritization at booking in large hospitals can cause delays in patient appointments, with one respondent reporting that patients could wait for up to one month to schedule an appointment for hospital care.

Often, patients use hospital emergency departments for primary care – one respondent reported that 60% of the patients in the ED should have been sent to another department or out-patient primary care. Another respondent, from a university hospital that provides high quality of care but has low primary care capacity, reported that many nonacute patients used the ED, especially on weekends (60% of weekend flow). By identifying structural intake issues, like misclassification of patients as needing urgent care, there is an opportunity to restructure admissions to ensure that patients are properly triaged to the correct type of care, improving their overall experience.

Workflow issues complicate patient flow

Lack of relevant information transfer between departments, either through outdated equipment or unsecured messaging, can introduce further problems in patient flow. One respondent reported that their old, limited nurse phone system made communications challenging. Another respondent said that there was a need for secure message exchanges and uninterrupted meetings. This respondent's key challenges were around culture, training, and communication of physicians and staff.

Other issues in patient flow include unsynchronized workflows, opacity of supply and demand, and inadequate parking. One respondent at a large hospital system reported that its organization had a high number of different hospital and third-party systems, like cleaning and transport, which used different tools and processes that were not integrated with the different hospitals' systems and equipment. Lack of integration of third-party systems can lead to resource and capacity management issues and unsynchronized stringing together of individual steps in the patient journey. When hospitals face opacity of supply and demand, they may have underutilized wards. One respondent said that there were no shared wards or capacity at their hospital, so there was no ability to shift patients from an overutilized ward to underutilized ones, which would improve efficiency and patient care. Accessibility issues, such as inadequate parking, can affect the patient experience by making admissions and visits more challenging.

Patient diversion and transfer difficulties

In the patient journey, diversion, transfers, and discharges can be smooth and routine, or they can cause unneeded stress. If a patient must be transferred to a different department or hospital for specialized care, multiple staff members and information systems and infrastructure need to work together.

In a US-specific example, hospitals currently rely on revenue from inpatient services such as patients admitted through the ED. Many critical patients are transported to the hospital via EMS, and the ED staff conducts triage and makes decisions regarding admission, transfer, or outpatient care. As such, diversions are costly, with the time for EDs that admit an average of two EMS patients per hour valued at $5,400 an hour. This represents a direct revenue loss.[8]

One surveyed hospital reported needing a checklist and complete report-based system to ensure follow-up at the next hospital. Another reported that transfers were complicated by different formats for medical records between care centers.

When a hospital is overcrowded and its ED resources are unavailable, patients may be diverted to other underutilized locations. One respondent said that at their location, patients might choose to go to the busier location, due to its convenient location and familiarity, instead of going to a satellite location. In some cases, if a hospital has long wait times, outpatients might self-divert to another hospital with less of a wait. In hospitals with pre-booking, these patients would be considered no shows in the admissions system. Respondents said that diversion to other departments should be closely monitored, while others reported that diversion was a siloed process, lacking inter-department communication.

Patient transfers can create difficulties, especially when other portions of the patient flow system are uncoordinated or there is a lack of infrastructure, such as an in-house patient transport organization. Lack of communication between sites can cause additional issues, such as double-booked patients, incomplete transfer of relevant information between departments, and loss of diagnostic information between institutions, which results in double testing.

Proper planning for patient discharge

Communication about planned patient discharges can improve housekeeping; provide more accurate information on bed availability; and help patients, families, caregivers, and external healthcare providers plan appropriately. Implementing an early discharge preparation process can decrease lengths of stay and reduce the risk of readmissions and mortality. Discharge planning and communication is vital to ensure that the process is not rushed from a patient or provider perspective. Planning should begin early, but it may be difficult to accurately predict the day of discharge and communicate important information accordingly.[9]

Coordination is key, to ensure quick turnaround of a room for the next patient, while ensuring that the discharged patient feels well cared for and safe. One respondent said that the main patient flow challenge is to plan discharge ahead of time, complicated by the fact that physicians might not share relevant information in a timely fashion. Patients may receive discharge information about their medications, diet, therapy, and follow-up appointments. This same respondent was interested in monitoring patients post-discharge, to improve patient continuum of care and engagement.

In other cases, patients are reluctant to leave the hospital without a plan for homecare, even if they have appointments for follow-up care. One respondent said that there was a need to partner with communities, home care providers and primary care physicians to ensure transition with family members and that resources were available outside the hospital and between care centers.

Resource and capacity management

Respondents' key challenges:

- Overcrowding
- Opacity on room/bed capacity
- Inability to reassign staff where needed
- Long transport time
- Lack of priority logic

Resource and capacity management show the greatest potential benefit for hospitals with centralized patient management systems. Coordinating the capacity of beds, rooms (e.g., operating room and ED), staff, equipment, infrastructure, and scheduling can help a hospital avoid overcrowding, long patient wait times, and stressed employees.

Bed and room capacity management

Capacity is an important factor to consider in health systems. When the need for patient beds exceeds the number of those available, hospitals can experience consequences such as cancellations, and reduced satisfaction among both patients and staff. Although the physical capacity of the building helps meet the demand for patient beds, construction may be costly, time-consuming, and not always an option.[10]

For some hospitals, ICU and NICU bed capacity was a high priority. One respondent reported facing a challenge due to high occupancy rates, with overcrowding issues once the hospital reached 105% capacity. Operating room capacity and ED capacity is unpredictable in emergencies, creating scheduling challenges. Some specialties become bottlenecks, and many hospitals need to utilize their resources better. One respondent wished to know the statuses of beds and the utilization of the OR, to triage its use, since expensive equipment was not optimally utilized, and staff schedules were a challenge. Another respondent reported a bottleneck with radiology, which had optimized scheduling for the department's better utilization, while adding another day to patient care, since there was no buffer hour provided for patient final exams. Increased optimization of one department at the expense of others can negatively affect the experience of both patients and staff.

Staff capacity

Many of the hospitals surveyed had challenges scheduling appointments around healthcare practitioners' schedules, due to an inadequate physician population. One respondent reported that their hospital was dependent on third-party care providers to use the space for their practice, and authorization management had difficulty providing information to the physicians regarding resource availability. The staff experience varies, depending on management structure or regional attractiveness. One respondent said that team communication often needs improvement, due to siloed wards. Due in part to the large, spread out campus, staff lacked visibility on their patients' next steps, with no digital tools for staff communication and no logical system to coordinate them. Another respondent said that staff capacity at underserved locations could be challenging if staff did not wish to move to fill vacancies in another hospital in a hub. An inability to adjust staff levels to meet demand is an ongoing challenge for hospitals in regions with strong labor laws.

The problem become even worst in an pandemic situation. COVID-19 pandemic has exacerbated the ongoing shortage of the staff, leaving many health care facilities short-staffed even after the cases decreased . According to a recent Washington Post/Kaiser Family Foundation poll, 3 in 10 health care workers have considered leaving the profession, and 6 in 10 say the pandemic has burned them out.[11]

Equipment and infrastructure capacity

Equipment capacity, including inventory and tracking, is also a high priority for healthcare providers. For example, diagnostic equipment such as magnetic resonance imaging (MRI) devices represent an important area of capacity. MRIs are expensive, and the standards of operation surrounding them are typically focused on achieving 100% utilization.[12]

In this survey of 30 hospitals from Siemens Healthineers, respondents reported that maintaining IT, devices, and tools were important priorities for their services. In hospitals with older buildings, there can be a mix of technology and systems between sites. One respondent said that due to limited building resources, their hospital had long transport times, poor parking situations, and unequal technology between buildings, which added complexity to patient flow and staff workflows.

Scheduling also creates additional headaches for hospitals. Respondents reported challenges booking specialist appointments and a lack of priority logic to coordinate staff and resources across campuses of large hospitals. Respondents reported long wait times for patients in admissions, due to manual check-ins, paper systems, scheduling call center issues, and a general need for coordinated IT support. Some hospitals need to better predict demand in specialty departments, such as the radiology department, to plan resource use. Real-time data on equipment and infrastructure use can allow hospitals to provide better care with fewer patient journeys delayed.

Fragmented continuum of care

The continuum of care refers to an integrated healthcare system, in which the patient is central and guided through every step subsequently required for their care. This includes preventive care, rehabilitation, and healthcare maintenance. In this survey, Siemens Healthineers identified a fragmented continuum of care as one of the biggest challenges for the hospitals that were interviewed.

Respondents' key challenges:

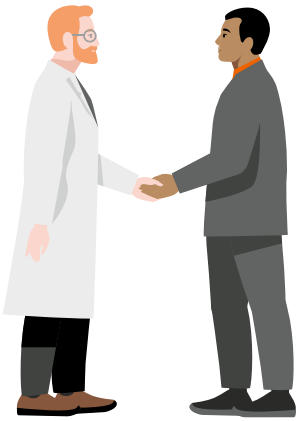
- Collaboration with third party care providers
- Lack of systems to provide telehealth
- Budgetary issues

Collaboration with third-party care providers

57% of respondents reported working with third-party providers, whether for transportation, human resources, or other services. Many hospitals wish to improve collaboration with third-party care providers to optimize transfer of patients to other hospitals. Others need a group-level approach to patient journey management, keeping track of bed availability in neighboring hospitals or connecting with external partners to grow their patient base. Third-party collaboration can also help those who wish to improve their links with payers.

57%

of respondents reported working with third-party providers



Technology and the continuum of care

The COVID-19 pandemic has accelerated the adoption of technologies for a more effective continuum of care and greater financial sustainablity moving forward. Telehealth is an example of this: a technology-enabled service enabling healthcare providers to monitor patient changes without the need for additional staff, overhead, or hours and offering a potentially significant source of revenue. Using this technology, they can assess patients with chronic diseases and prevent unnecessary hospitalizations or ED visits.[13]

France has allowed telehealth services since 2009, but many other governments, due to COVID-19 and restricted movements, have rapidly adopted laws to support telehealth. These quickly created "stop-gap" laws have expiration dates, but there is likely to be continued interest in telehealth after the pandemic.[14] Variations and changes in rules governing electronic health records (eHR) and data protection across borders add more complexity to providing these services. New systems, developed or adopted quickly to meet the demands for remote care during the COVID-19 pandemic, may not be suited to ongoing increased demand. Depending on a healthcare institution's location, telehealth services may be legal, even if reimbursement has not been finalized. Up to 22% of respondents were interested in telehealth. Some were in countries without payer reimbursement for telehealth, while others were already using remote care programs to support their patient population. Some respondents said they monitored patients prior to admission and after discharge, while others lacked the mobile phone technology or communication applications needed to provide telemonitoring services.

Financial performance

Financial performance was a critical concern for all respondents, due to new local guidelines meant to ensure that patients, the government and/or insurance companies receive return on investment. In some regions, value-based care models are pushing hospitals to keep healthcare costs per patient as low as possible, while still providing high-quality medical services. Models like accountable care organizations and integrated delivery networks are gaining ground in some markets with extensive private insurance networks. In these value-based paradigms, providers are reimbursed based on outcomes – potentially including patient-rated outcomes – rather than traditional fee-for-service arrangements.

Each respondent had a different area of particular interest, whether it was reimbursement and billing, occupancy levels, length of stay, revenue, or expenses. One respondent said that real-time tracking of billable charges could help reduce losses. Authorization processes from different insurance companies add complexity to reimbursement and billing. Respondents were eager to ensure that occupancy level stayed high, without overwhelming staff. Respondents said that the primary key performance indicators for patient flow were inadequate for their location. At a French hospital, one respondent faced challenging budgetary constraints when employees could not be transferred to other hospitals in high-need areas, even though the main location was overstaffed and under-utilized. Another respondent said that their hospital needed scaling, due to a limited building and availability in the headquarters. Another respondent noted that acute care beds were expensive, indicating a need for forecasting ICU needs.

Recommendations to turn data into value

Data and analytics are key to obtaining healthcare insights for increased efficiency. The wealth of untapped data on patients and processes grows exponentially, but these data cannot be leveraged effectively without innovative, digitalized solutions. A platform to connect these data automatically and act as a central host for a broad range of Artificial Intelligence (AI)-powered applications is essential for improved decision-making. By making healthcare information accessible to caregivers at any level and standardizing data-informed decision-making, health systems can can turn data into value.

Hospitals can benefit from analyzing data and making data-driven decisions on staffing, allocation of resources, and workflow maps in order to provide quality care that transforms the patient journey. Macro-level mapping can be used to analyze overall flow, while identifying capacity limits and bottlenecks. AI-based tools can be used to continually optimize performance by predicting care utilization rates and adjusting staff, equipment, bed, and materials availability to suit demand.

Most respondents indicated that communication infrastructure can help solve many issues, through coordination of all systems and tools involved. The continuum of care was a common theme, with many respondents eager to engage with patients after discharge via telehealth and/or telemonitoring to reduce future re-admissions, a key performance indicator in value-based care models.

Analytical data of patient flow at overutilized hospitals can help ensure that the right services are offered where the population need is greatest. It may help improve capacity management, staff satisfaction, and the patient experience. However, many organizations will benefit from optimizing their whole infrastructure to anticipate demands on the system.

Emerging clinical and non-clinical roles for AI

AI can lead to better patient outcomes and improve the productivity and efficiency of care delivery. For example, order scheduling and patient screening in radiology are areas in which AI algorithms could quickly identify specific safety requirements for certain patients, such as contra-indications for contrast.

Using AI, Siemens Healthineers performed a pilot at the University of Pennsylvania (HUP) and deployed 20 high-performing models that combined department and modality to predict the expected monthly volume of procedures. This scheduling solution automates the generation of weekly staff schedules, optimizing them to manage variations in the radiology workflow (exam demand) and staff parameters (availability, staffing practices etc) by:

As a result, the HUP Perelman Center for Advanced Medicine reduced exam time by 20% (or 113 hours) for a cost-savings of up to $300K annually for MTAs Automated scheduling using AI technology also led to the potential for 156 additional exams per week – a potential yearly revenue increase of up to $6.4 million.[15]

AI is already beginning to play a role in optimizing image acquisition and interpretation in radiology. More broadly, clinical decision support tools that utilize AI are becoming more common and more sophisticated.* It is worth noting that these tools will not make human staff redundant, but will instead allow them to extend their capabilities to more patients by automating a variety of important but labor-intensive tasks. This will help hospitals meet the challenges presented by an aging population and increasing fiscal pressures.

Improving staff allocation by

- predicting technologist requirement for upcoming weeks
- increasing predictability and reliability of schedules
- managing variations in workload

Enhancing financial performance by

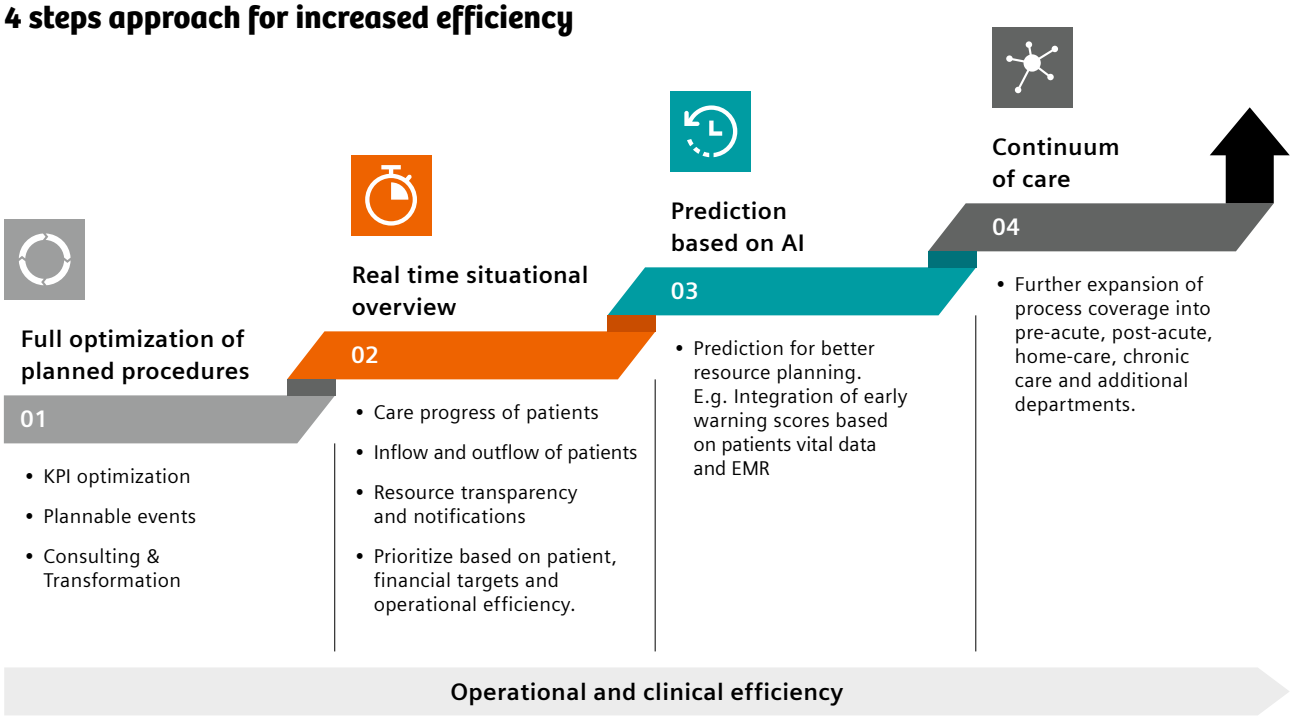
- better ROI from increased throughput
- cost savings from automation of schedule
- cost saving due to less MTA hours

Advancing device utilization by

- faster clearing of backlog, leading to higher throughput and improved utilization

Complete system alignment

4 steps approach for increased efficiency



Optimization for the benefit of the entire organization must be the goal, with each specialty and department in a healthcare system working in alignment for the financial health of the organization, and the satisfaction of patients and staff. By gathering data, analyzing patterns, and applying evidence-based solutions, hospitals can gain insight in how best to adjust services to real-world needs.

Regardless of what stage of the process is currently being perfected, there are always tools available to help your organization increase efficiency.

Provider organizations should continue to collect and analyze data in order to continually optimize efficiency and quality of care delivered. The goal is to create a "virtuous circle" of measurement, analysis, and improvement. Increased visibility into the real-world performance of care pathways and processes allows providers to assess the impact of those processes on both clinical and financial outcomes. This is the concept of the "learning healthcare system," a continually self-improving healthcare institution that is the product of both culture and technology.

Workflows, resources, and patient flow must be aligned to develop streamlined solutions that deliver superior patient and staff experiences, coupled with efficient use of resources. Transformational consulting plays a key role in this process to activate and leverage untapped potential.

This approach is inherent to the Siemens Healthineers Value Partnerships framework, enabling healthcare providers to leverage evidence-based solutions and tailor them to their specific situation. By providing guidance on optimizing performance, expanding capabilities, and transforming care delivery, Siemens Healthineers Value Partnerships can help healthcare providers improve efficiency, the overall patient experience, and quality of care.

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About Value Partnerships

Siemens Healthineers Value Partnerships combine holistic medical technology management, operations management, and consulting. Our technology management services include asset and capacity analysis, technology optimization, multi-vendor technology management, and change management capabilities. With sustainable consulting and transformation services and future-proof design planning, we are well positioned to co-create a solution with and for you.

Siemens Healthineers Value Partnerships can help you optimize operations today, expand with new capabilities tomorrow, and advance the level of innovation in your network.

The products/features and/or service offerings (here mentioned) are not commercially available in all countries and/or for all modalities. If the services are not marketed in countries due to regulatory or other reasons, the service offering cannot be guaranteed. Please contact your local Siemens Healthineers organization for more details. The results described herein by customers of Siemens Healthineers were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist (e.g., hospital size, case mix, level of IT adoption), there can be no guarantee that other customers will achieve the same results.

The scientific overlay on the title is not that of the individual pictured and is not from a device of Siemens Healthineers. It is modified for better visualization.

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