EXECUTIVE INSIGHTS

RESILIENCY + RECOVERY

THE SMART HOSPITAL JOURNEY

Hyperconnected environments for a patient-centric experience

American Hospital Association™

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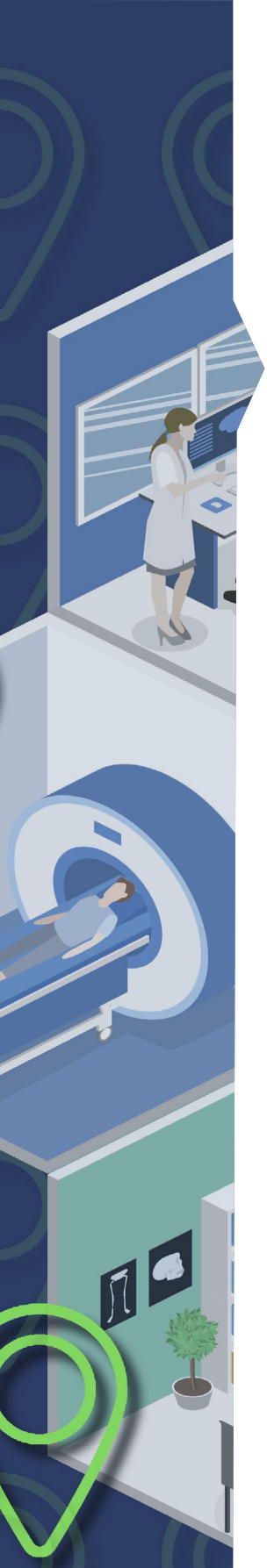


The Smart Hospital Journey

Hyperconnected environments for a patient-centric experience

Embarking on the journey to becoming a smart hospital begins with exploring what kind of experience the health system wants to provide for patients and employees and in what ways the care journey might be transformed. Faced with significant challenges to operational efficiency, patient experience and staff safety, health care executives are looking for real-time visibility and instant notifications of important changes to enhance the patient experience, improve patient workflows and alleviate some of the burden on health care workers. This executive dialogue examines how health care organizations are using data generated by smart hospitals to inform and expedite decisions, deliver more personalized care, improve visibility into resource utilization and better manage fluctuating caseloads.

10 STRATEGIES

for a smart connected hospital

Implement a real-time locating system (RTLS) to track and identify devices and optimize equipment use. Use RTLS with panic buttons in high-risk areas for staff safety and security.

Create a better work environment and experience for the care team. Examine how work is done, who's doing work and how communication with patients and families can be improved (e.g., smart patient-communications program in the emergency department).

Optimize decentralized and patient-centric services beyond the hospital walls into the home, whether it's hospital at home or telemedicine.

Commit long term to upgrading and integrating siloed, legacy infrastructure systems — the electronic health record and enterprise resource planning system.

Learn from other industries on how to use and mine data to create better experiences, better engagement and better interaction. Customize interactions for diverse patient groups.

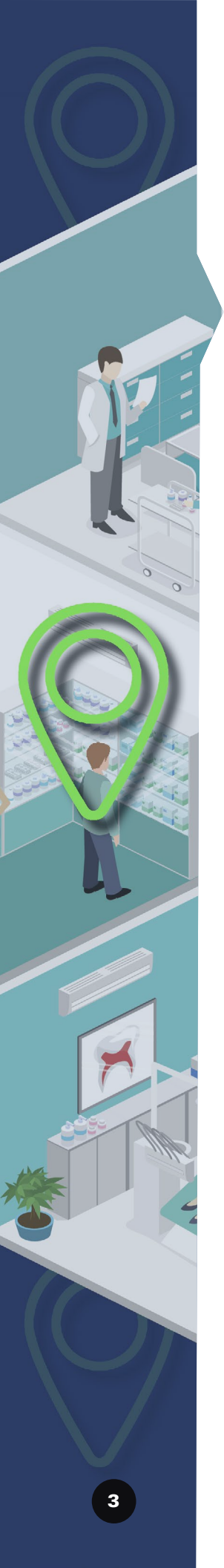
Deliver value from digital systems by connecting and integrating technologies to reduce workflow complexity.

Employ electronic wayfinding to improve scheduling, throughput and the efficient use of resources.

Examine new technologies like artificial intelligence and machine learning to reduce documentation burden and improve personal contact with patients.

Develop bottom-up approaches that bring the front lines into the innovation circle to support the workforce, e.g., a virtual nursing pilot in the telemetry unit.

Move to an automated environment in which data from smart devices integrate with smart systems to aggregate and generate insights to improve clinical outcomes and quality, such as patient-deterioration alerts.



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QUESTION

MODERATOR *(Suzanna Hoppszallern, American Hospital Association):* **When you think/hear about the term 'smart hospitals,' what does it mean to you and your organization? Are you focusing more on patient care, operational efficiency, patient experience or staff experience?**

KAT RONDEAU *(Dignity Health):* We look at how we can streamline both our patient and caregiver journeys and that includes patient experience and care, staff experience, and operational efficiency. I host an innovation incubator clinical strategic council that meets monthly with our chief medical officer. We look at ways in which we can help our caregivers work to the highest level of their licensure. We ask questions such as: What can we hard-wire through technology and other areas that will give our caregivers time back? Will it improve our caregivers' experience, improve operational efficiencies or add value in supporting caregiver communication with our patient and families? We also look at it from a patient and family view and ask questions such as: Will this enhance our patient and family experience? Will this solve a pain point for our patients and family members? If we begin to see that it may be impactful, then we do a deep dive and see what other opportunities exist. It may enhance patient care.

For example, we rolled out a cloud-based, patient communication platform that works with our electronic health record (EHR) to provide real-time updates to our patients in the emergency department (ED). Keeping patients and key support people well informed on the patient's journey while moving through the ED quicly, reduces uncertainty and improves experience. Additionally, the plaform provides a clear patient journey end, post-discharge, by providing access to the patient portal and the opportunity for scheduling follow-up care in the network. Now, we're finding other areas to enhance: how we deliver that work; who's delivering that work; and how we can communicate better with patients and their families while giving them opportunities to identify how quickly we respond to their needs. We have now expanded this platform into our acute inpatient setting which incorporates dynamic care coordination and patient-centered services.

SHARON TOUPS *(St. Tammany Health System):* It's about how we use technology with today's workforce issues to its fullest to enhance the caregiver/physician experience, the patient experience and the employee experience. How can we use technology for all three constituents to make their work easier and enhance their experience? We're focused on the patient experience and trying to enhance how our patients interact with us through technology.

Craig, our chief information officer, will share more details about what we're working on. He has an electronic wayfinding application that we're implementing. We're offering the ability to schedule appointments online. Kerry, our chief nursing officer, can talk about the virtual nursing pilots.

"We look at ways in which we can help our caregivers work to the highest level of their licensure. What can we hard-wire through technology and other areas that will give our caregivers time back?"

— Kat Rondeau—
Dignity Health

CRAIG DOYLE *(St. Tammany Health System):* Leaders such as Sharon and Kerry talk to me about technology and solving problems in the workflow and in the workforce for our patients. Technology alone is not going to solve the problems; you must understand the entire ecosystem. I am always thinking ahead to determine if we do find a solution for the challenge in front us, will this solution create another, unintended challenge we need to resolve down the line?

Case in point, we are an Epic shop and

Rover is a mobile application interface on a handheld device that clinicians roam around with. They love it. However, logging in is a challenge because typing in the password is cumbersome. To alleviate this, we're going to add another technology, using the phone to tap and automatically log in.

We are in the process of launching an electronic wayfinding application that uses the internet to display the path within the hospital to get from Point A to Point B. We also use blue-dot navigation so that if you use the app on your phone, it follows you to ensure that you stay on course to your destination. As we grow, I know that our colleagues will use it — especially new employees. This is a product that will be beneficial and satisfying to both our employees and our patients.

IVAN DURBAK *(BronxCare Health System):* We see a smart hospital as using technology to address the tremendous stress that we see in our doctors and my nurses. In a 10-to-15-minute visit, the doctor spends part of the time talking to the patient, then turns his or her back to the patient, and spends time on the computer. The doctors tell me they didn't go to medical school to become overpaid data-entry clerks.

How can we help our key resources — our clinicians, doctors and nurses — with technology without making it an additional burden? We're hoping to move into conversational artificial intelligence (AI). Let the computer figure it out so that the doctor can have those 15 minutes of uninterrupted eye contact with the patient. That's one of my highest priorities for this year.

With our patient population, we're trying to get them involved in telehealth. We put 2,300 blood pressure-monitoring devices into our patient's homes, and we wish to engage them more. The challenge is the bandwidth that our patients have.

THOMAS MARCHLEWSKI *(AtlantiCare):* The health care field is in its infancy in the smart technology journey. I'm here with my CMIO, Paul Ehrlich. AtlantiCare's goals are improving clinical outcomes and gaining workflow efficiency for physicians, clinicians and the overall care team and enhancing the patient experience. It's not just a single focus, it's multifaceted.

PAUL EHRLICH *(AtlantiCare):* Health care organizations across the country are facing workforce issues, particularly around nursing. New Jersey alone has a deficit of 13,000 nurses compared with the need. We're looking at smart hospital technology as a mechanism to optimize our team members' experiences in delivering quality, efficient, patient-centered care. For example, we are onboarding 100 new nurses, who are fresh out of nursing school. We're looking at how we can we use these technologies to provide a virtual partner to a bedside nurse to enhance the onboarding experience.

QUESTION

MODERATOR: How will your hospital operations change in the next five to 10 years? How do you see your journey to becoming a smarter hospital easing or overcoming these challenges?

ASHLEY CAPPS *(Tidelands Health):* Our regional market is one of the fastest-growing in the nation. We anticipate nearly doubling our county population over the next five to 10 years from approximately 350,000 to more than 600,000. In three to five years, we'll likely add a third acute care hospital with the integration of smart technology. Right now, we are amid a full system Epic conversion that is taking 40 or so disparate systems across inpatient and ambulatory settings that don't interface and integrating them into Epic. We're also looking at virtual nursing, systems automation and interoperability, and expanding surgical robotics.

I feel as though we're in our infancy, but we need to

be sprinting to keep up. Through robust, shared governance and engagement among our workforce, we're trying to take a bottom-up approach that brings our front lines into the innovation circle to help us help them. If it is an evidence-based best practice, we're going to go for it to try to support our workforce.

KERRY MILTON *(St. Tammany Health System):* Having innovation in a hospital is a big retention and recruitment feather in your cap. In August 2022, we initiated a virtual nursing pilot with a 33-bed telemetry medicine unit — with a virtual nurse in a bunker on the day shift and one on the night shift. The pilot's intent was to support the bedside nurse with documentation in Epic, and paperwork processes like discharge information, medication reconciliation, care planning and other tasks.

Now almost a year later, it is a second resource for the nurse at the bedside for questions related to patient care; for example, 'I've never changed the central line dressing, can you talk me through it?' The bedside nurse talks to the virtual nurse through the technology we have, and it supports the work they're doing.

Beyond that, AI, which we are getting with Epic, can anticipate deterioration alerts in patients by capturing data from labs and vital signs. Those deterioration alerts are firing off to our house supervisors, who then immediately go to the bedside to evaluate the patient and access our Department of Hospital and Medicine as a next step, if necessary. We've been happy with the outcomes for patient care.

MICHAEL McKENDALL (*East Jefferson General Hospital):* A majority of our patients are on Medicare, so we maintain a fine balance between automation and efficiency and providing personalized care to our patients. Over the next several years as the population continues to age, especially within the community, the challenge becomes how we're going to balance connecting with our patients and utilizing technology. When you bring an iPad into a patient room to use for documentation, an elderly patient may wonder, 'What are you doing? What are you documenting?'

"We're hoping to move into conversational artificial intelligence. Let the computer figure it out so that the doctor can have those 15 minutes of uninterrupted eye contact with the patient."

— Ivan Durbak —
BronxCare Health System

We're still in the beginning stages of trying to implement technologies like MyChart and telehealth. These platforms allow patients easier access to their medical records and appointment requests and gives our organization the opportunity to gather data which helps us improve patient experience and figure out service recovery opportunities.

Right now, we're integrating with Tulane Medical Center. A significant investment is being put into our campus. We're exploring electronic wayfinding as many of our services are relocating and we want our patients to navigate our beautiful updated campus with ease.

QUESTION

MODERATOR: George, hospitals are in different phases of their smart hospital journey right now. What are the key characteristics of a smart hospital and where are organizations going?

GEORGE VALENTINE *(Cox Prosight):* We worked with the AHA on a survey of health care executives and came up with eight characteristics of a smart hospital and a framework or strategy. First, smart hospitals are connected. The hospital has a reliable broadband network, advanced wireless capabilities, and a foundation to connect all your systems, devices and people.

Second, they're integrated. How integrated is the system? Do the core platforms connect and talk to each other in real time and connect with everything else?

Third, they're data-driven. How is your organization integrating unique data sets across different applications? Does it use data analytics, involving an increasing number of data sources to support real-time decision-making? The EHR is the perfect place to start. The Number 1 indicator for organizations that are focusing on being data-driven has been the rise of the chief digital officer.

Fourth, they're automated. Do you think about automation from a patient perspective or from an operation perspective? How do you serve the same number of patients with half the people in 10 years? It's going to be through automation of procedures and getting rid of manual tasks, the things that just create pain.

Fifth, being safe and secure is a big component, but it's table stakes for most organizations. When we say safe and secure, we're talking about both physical security of patients and staff as well as digital security.

The sixth characteristic is being experience-centric. Many of you mentioned clinical outcomes, patient outcomes and a better patient or family experience. Health systems are taking lessons from other industries to think through how to use and mine data to be able to create better experiences, better engagement and better interaction.

The seventh characteristic is being innovative. The larger systems have innovation groups aligned with the goals and objectives of the overall organization. They are piloting technologies that move those goals and objectives and can easily scale these technologies. Someone mentioned the use of AI generative charting. That will transform how hospitals operate in five to 10 years.

Being virtualized is the last characteristic. How do you extend beyond the hospital walls into the home, whether it's hospital at home or telemedicine? This is a large component of the smart hospital.

QUESTION

MODERATOR: How are health systems getting stakeholders to participate in decisions and implement some of these smart hospital technologies. What challenges have you faced and what successes have you experienced?

CAPPS: Moving into the testing and training phase to prepare for a go-live, our champions and superuser groups will be in on the front end of this conversion. Our focus is on workflow-change adaptation and optimizing best practices in existing workflows. We needed to identify our informal leaders, early adopters and the ones that were going to be change-management advocates and lead the way for our group, especially given the level of integration that we're seeking.

"Health systems are taking lessons from other industries to think through how to use and mine data to be able to create better experiences, better engagement and better interaction."

— George Valentine —
Cox Prosight

With our exploration of virtual nursing and after talking with other chief nursing officers and other systems, it's an additional resource to mentor and support in hospital nurses. While virtual nursing extends the hands and the minds that are providing the care, these additional resources are going to add to the worked hours bottom line. Better understanding of how to transition manual workflows to virtual and automated work allows bedside clinicians to focus on the touch care that remains even after technology and innovation are optimized.

Our system has a robust recruitment

strategy for graduate nurses and international nurses. Over the next couple of years, we need to consider the training, competency and onboarding of larger cohorts of nurses (20+) that will be joining us at one time in one location. We're partnering with our school and nursing programs to provide faculty, simulation opportunities and other opportunities for learning destinations.

In the near term, our local shared governance and innovation groups will continue working to recover and make up some of the gains lost during COVID-19.

DURBAK: I'm finding that unlike a couple of years ago, the board and senior management are frequently asking me, 'What are you doing about cyber insurance? About AI?' So, getting the attention is not the big deal that it used to be, which is good news. Then, the discussion comes down to resources.

RONDEAU: For us early on, it was identifying pain points for both patients and caregivers, identifying a solution to help solve the pain point, while being careful not to add work, but streamline the work. Working directly with our operational teams and garnering their input and designing the process with them allowed us to get early buy-in with the ability to iterate and improve along the way. A multidisciplinary team that includes front-line caregivers, a stakeholder or executive champion, like the CEO, is a critical partner for moving things forward, allowing for iteration, and continued deployment. In this example, this program has been deployed in our freestanding EDs, critical access and community hospitals, Level I trauma and teaching hospitals.

An example of success is when we launched a smart patient-communications program in our ED that redirected call button communication to the appropriate person and reduced nurse interventions by about 30%. We've been able to reposition what nurses do with that time because the patient-centered services that were incorporated into the platform's algorithm appropriately redirects typical call button requests, such as the patient requesting a blanket, from nursing directly to housekeeping.

We've also put in place all the educational components for a patient discharge whether they are going home or to an observation bed, or getting admitted to the inpatient setting. We've built into this electronic tool ways to inform loved ones. It keeps a family engaged, involved and educated along the way. If a patient is being moved into an inpatient unit, communication with the patient and family members occurs before the move, along with where they're going, who the doctor and the care team will be once the patient arrives.

"Our focus is on workflow-change adaptation and optimizing best practices in existing workflows. We needed to identify our informal leaders, early adopters and the ones that were going to be change-management advocates and lead the way for our group,"

— Ashley Capps—
Tidelands Health

We started this particular program in the ED to solve two things: patient experience and our ED bottlenecks. Arizona is ranked 48 out of 50 states in primary care access and a very high percentage fail to schedule follow-up care; this program is a way we could provide assistance to our patients to obtain the right care in the right setting when they leave the ED. In April 2020, we launched our first site with this platform; we now have 17 CommonsSpirit Health EDs live and 12 EDs in implementation.

EHRLICH: Our biggest challenge is what we refer to as shiny-object syndrome. People in the organization, physicians and non physicians alike, see a new technology and want to move headfirst into implementing it. To encourage innovation and buy-in, we've set up a cross-functional team to vet products and offerings.

Our physicians and clinicians are engaged with smart technology. We have a physician medical director of virtual care who is involved with setting up a command center for virtual nursing. This partnership allows for smooth implementation and adoption from the broader change-management perspective.

QUESTION

MODERATOR: Are you using real-time locating systems (RTLS) in your organization? What are the challenges and the benefits?

DOYLE: We use RTLS in several ways when it comes to asset tracking. We use it to identify whether equipment is in a clean storage room ready for use, or in a dirty storage room awaiting cleaning for use. This lets us optimize our equipment use because we have limited resources.

We do not use it in the patient space. I am intrigued by the new wayfinding because they're bringing out an RTLS solution as well and, if proven, that seems to be a better technology for us.

TOUPS: To address workplace violence and safety, we've implemented panic buttons with RTLS in a lot of our high-risk areas that pinpoint exactly where the person is so that security can respond to an incident. That's been a real win for our team in using technology to support the need of making staff feel safe and secure in the organization.

QUESTION

MODERATOR: Going forward, what's critical for the future of your hospital and patient outcomes?

TOUPS: We rely on technology for the hospital's basic functioning today. One of our concerns or challenges is planning for what happens if we have significant downtime due to a cyberattack. There are a lot of people who haven't functioned in the hospital in the paper world, and we need to think through the backup processes when systems are down. It's a crisis.

DOYLE: We're talking about wonderful technology everybody's putting in, but don't forget about the communication part and always invest in that as well. We have an internal, businesslike social media type of software that all of our colleagues use. This is a great form of communication for us. We also have the capability to send every colleague a blast through text messaging in an emergency situation, and in situations that are critical to the function of the hospital. This is truly meeting our colleagues where they are.

McKENDALL: Craig, to your point, effective communication is critical. It's imperative that people stay connected. While we've invested in software to improve the patient experience, we still need to make sure that we're connecting personally with our patients. We've found that our patients really value quality connections. They want eye contact and clear and direct communication. We even tried to automate our financial payment systems and, after listening to patient feedback, we saw that our patients prefer to talk to somebody face to face.

It can be challenging to provide personalized care to our older patients while implementing the new technology that the younger generations expect.

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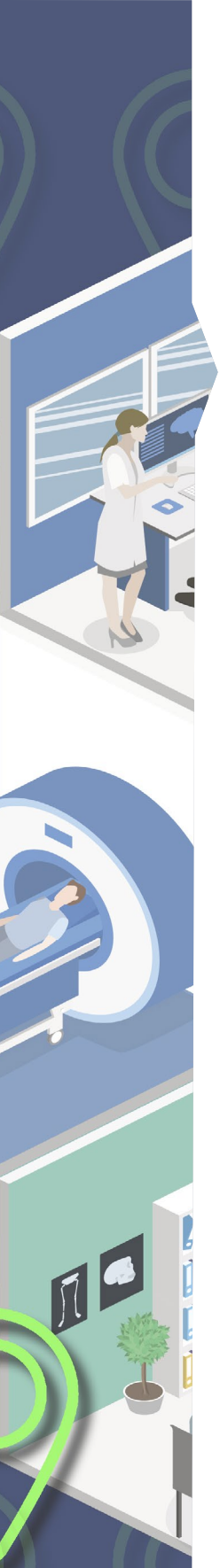

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