



strategically at how to design infrastructure that will allow them to advance telehealth programs and adopt new technologies. “One of our clients is adding the infrastructure to support cameras, microphones, and speakers in every patient room in a hospital that will open in 2022,” he says.

Industry experts also say movement is afoot to invest in technologies, including remote monitoring, that improve how providers triage and treat patients. Innovations new to healthcare, such as wayfinding technology, are also gaining traction in both large and small health systems looking to design a better patient experience. At the same time, “look for hospitals to harness artificial intelligence as a tool for accomplishing everyday processes ancillary to patient care, such as documentation or patient triage,” says Ryan Marling, research associate at the Clayton Christensen Institute, a nonprofit, nonpartisan think tank with offices in Boston and Silicon Valley.

Moreover, healthcare organizations are making a greater effort to connect technology decisions to critical goals. “We are seeing a significant move by leading health systems to re-orient IT road maps and strategies more directly to defined business needs,” says Tim Needham, executive director and healthcare advisory practice leader at the Chicago-based Burwood Group.

For example, five years ago, a health system IT road map would dedicate roughly 75% of the budget toward projects classified as upgrades or sponsored primarily by IT—

Next-Generation Technologies

Hospitals pave the way for innovation in 2018

insights, says Neil Patel, president of Healthbox in Chicago, a healthcare innovation services firm that works with leading health systems, including Intermountain Healthcare. “Organizations are getting more sophisticated around identifying the problems they need to solve and how technology and innovation can support them.”

Deploying powerful technologies

Indeed, hospital leaders are looking to technologies that tie more systems together to produce targeted data, says David Glenn, systems designer at the Pittsburgh-based Sextant Group. 2018 will be about “optimizing and integrating new pieces of technology.” Also, he points out, with hospital construction on the rise, healthcare leaders are looking more

As healthcare organizations move into 2018, they are rolling out next-generation technologies to address key goals in areas that are still front of mind, including value-based care, population health, consumerism, clinical integration, and the revenue cycle. While there’s a lot of innovation happening, healthcare leaders are also focused on applying it practically and harnessing data to drive clinical and operational

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basically keeping the lights on, says Needham, who specializes in emerging healthcare technology and commercialization strategies. “While this is still common, leading health systems are now implementing formal methodologies and business analyst teams to realign IT spend directly along broad organizational goals—typically with a focus on growth, quality/safety, and patient experience.”

Empowering caregivers

As more healthcare organizations take on risk-based models, care management practices and the technologies that support them are advancing. Innovative technologies that enable remote monitoring from the patient’s home are moving out of the pilot phase and becoming the norm in 2018. “Organizations with robust care processes in place have better-than-the-national-average readmission rates and better outcomes,” says Patel. Now, these organizations are introducing remote monitoring and “flipping the paradigm on its head, so that instead of managing by schedule, you’re managing by exception.”

Care managers can access medical devices via remote monitoring, including blood pressure cuffs, blood glucose monitors, and weight scales; they can also use diet and exercise apps, and pinpoint prevention strategies as well as address red flags immediately. “Now it’s not just data collection and aggregation on the care management side, but putting the analytics in place and alerting before things happen,” says

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they carry to each patient room, everything is on a single device with multiple apps.” Nurses’ phones integrate with the EMR and handle nurse call paging, secure text messaging, and barcode scanning. “As our clients build new facilities, this is an opportunity to test and roll out new technologies and devices to optimize productivity.”

Leveraging EMRs

The electronic medical record (EMR) is at a tipping point, says Patel. Now that it has been optimized for billing and coding, there is a new focus on innovating workflows to reduce physician and nurse burnout related to these types of tools. “If we’re going to ask physicians to do things in a certain way, the technology needs to help them do that more easily.” For example, he says, one cutting-edge company has developed software that sits on top of the EMR and uses artificial intelligence to alert providers when they are overprescribing an imaging or diagnostic test. The determination is not purely formulaic, Patel points out. “It looks at the free text in the notes, in addition to the coded diagnoses, and uses algorithms to surface an alert saying you should or should not do this.”

There is also a growing movement to integrate mobile equipment and devices to the EMR, says Glenn. For example, he says, there is a “huge effort to migrate to wireless IV pumps and connect them to the EMR.” The same holds true with consumer wearables. “Patients are more engaged in their health and want better control over their data,” says Glenn. They want to share data from wearable technology with their doctor. Providers are taking this seriously and looking to interface with these consumer devices. “This will pick up even more traction in 2018,” he notes.

Creating a better patient experience

Consumerism will continue to change the landscape and drive technologies that allow patients to interact more effortlessly with providers, including through wayfinding technology. While wayfinding has been more prevalent in transportation hubs, such as airports and train stations, some hospitals see it as a valuable tool to improve patient navigation, says Brian DeCicco, web technology team lead with Kaleida Health in Buffalo, New York. “Wayfinding kept coming up as a patient satisfaction issue that our individual hospital presidents wanted to resolve. It gives us a lot of flexibility that can’t be done easily or inexpensively with physical signage.”

The four-hospital system rolled out its wayfinding platform in November 2017, which allows patients to access a map of the hospital through a smartphone app. The technology offers real-time positioning—using Bluetooth beacons—within the hospital, directing patients to their appointment or other destinations. “Older hospitals are pretty much a maze of building upon building that have been added to over time,” says DeCicco. The technology also provides pathways to help employees navigate the back of the house. Eventually Kaleida hopes to send out appointment reminders that have built-in wayfinding options; it also wants to use the technology to create efficiencies in surgical areas by tracking equipment and required personnel. “We are right at the beginning of this.” ■

Patel. “That’s a pretty remarkable thing that we’re seeing happen across the country, and it’s growing significantly.”

The companies that produce these technologies are maturing. “Small to medium-sized health systems are looking at these technologies as a competitive advantage in the marketplace and saying, ‘This is how we have to do business now,’ ” he adds.

Additionally, more hospitals are taking advantage of mobile phone integration for nurses, says Glenn. “Instead of nurses having a tool belt with a half dozen devices that

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Creating a Successful Modern Telehealth System

In the age of the healthcare consumer, telehealth offers patients greater convenience, allowing them to take more control and choose how and when they see their physician. For healthcare organizations, there are opportunities to create high-quality, cost-efficient consumer care models, says Brian Cea, senior business development manager for healthcare at Insight. He discusses the key strategies, success factors, and red flags to watch out for when creating a telehealth system.

Q: How would you describe a modern telehealth system?

Brian Cea: Telehealth quickly and efficiently diagnoses and monitors patients, while keeping them engaged in a treatment plan. It also shares information with other providers in real time, securely and across disparate platforms. So, there's a strong need for continually evolving technology. It's important to remember that telehealth is still a relatively

more than just convenience. It has to offer the same high level of care the patient has come to expect from his or her provider.

Q: How does telehealth benefit patient care in terms of quality, efficiency, and productivity?

Cea: Telehealth simplifies many processes. Patients may quickly schedule their appointments online, receive

“Telehealth quickly and efficiently diagnoses and monitors patients, while keeping them engaged in a treatment plan.”

new way to engage patients. People are used to going to a doctor's office, and while it can be inconvenient and time-consuming, for the most part, it works. Therefore, a successful telehealth program must provide

email confirmation, and see a provider at their convenience. For example, a patient living in a rural community and just out of recovery can skip the 20-mile car ride and see the physician in the comfort of their home.

It also allows physicians to follow a more efficient triage care model, whereas a standard model limits the number of patients they can see.

Q: What technology and IT expertise is needed to be successful?

Cea: On the surface, telehealth appears simple and seamless to patients. In reality, it involves a robust technology solution that supports a new care model, engages patients in their treatment plan, and meets broader organizational goals. The technology must address the needs of many stakeholders, including providers, patients, payers, pharmacies, and more. On top of that, you will need specific expertise when choosing everything from the right audio-video device to a communications product that will enable your network to handle increased activity. Also, providers are in a data-driven business now. A technology platform must be able to manage, secure, share, and use data; otherwise,



Brian Cea
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telehealth is nothing more than a communications device.

Q: What are the biggest barriers to offering telehealth services?

Cea: It's easy to become overwhelmed by telehealth's complexities. In addition to creating a technology solution, there must be a process for gathering patient information and making sure treatment is covered. Determining electronic medical record (EMR) compatibility as well as how to securely capture and share data are other major hurdles. The government is cracking down on data breaches, which can be a significant cost issue for hospitals that don't protect patient data adequately. All of this requires a broad team of experts who understand how to create a strong telehealth program. ■

