

Beyond the hospital walls: Connected healthcare solutions engage patients around the clock, at home, at work and on the go

Key Takeaways

1. *Connected healthcare isn't just about clinical and medical data.* Ambient data can provide important insights into a patient's condition and environment.
2. *Patients feel more engaged with connected healthcare.* They can decide how, when and where to interact with providers.
3. *Connected healthcare enables clinicians to work at the top of their licenses.* Data-based risk assessments inform when clinical interventions are needed and when they aren't.
4. *Careful implementation is the key to minimizing administrative burden.* Connected healthcare solutions must integrate into existing workflows and systems. Filtering out unnecessary alerts is also critical for addressing alert fatigue.
5. *Successful connected healthcare programs provide comprehensive patient education.* This means clear communication in the office and simple instructions in the kit sent to the home.


Hospitals and health systems increasingly recognize the importance of engaging, supporting and empowering patients throughout their care journey. In fact, research suggests only about [10 to 20 percent of a patient's full health profile](#) is determined in the clinical setting.

With connected healthcare, clinical and care teams have many more opportunities to understand a patient's health and put people on a care plan that they will follow. Additionally, connected healthcare solutions can help enable healthcare organizations to achieve the Quadruple Aim: reducing costs, improving population health, enriching the patient experience and enhancing team well-being.

Connected healthcare widens the aperture for improving patient engagement and outcomes

The goal of healthcare is to interact with patients no matter where they are — at home, at work or even on the go, using mobile and wearable devices that support remote monitoring. "There are more and more connected health options today," Steve Bock, chief technology officer at Trapollo, said. "There's so much data available to manage patients remotely. We can monitor vital signs and trigger alerts when vital sign measurements exceed a baseline or hit a threshold."

Connected healthcare isn't just about clinical and medical data. It also includes ambient or environmental data, such as air quality or motion detection, that can round out the full picture of a patient's condition and environment.



Technology gives clinicians a better line of sight for treating the whole person. The focus isn't just vital signs, it's medication adherence, activity, sleep, nutrition and social determinants of health. Clinicians may gain insights into simple things like transportation or access to food that would be helpful for a patient.

Interconnected digital ecosystems can improve both the patient and provider experiences

The foundation of connected healthcare is more frequent and richer data collection. That information is transformed into insights care teams use to make smarter decisions and intervene more quickly. For example, some data can help assess the severity of a disease before symptoms even emerge or it can help detect infections. "With COVID-19, studies showed that changes in heart rate variability potentially indicated the presence of a COVID infection days before symptoms appeared," Mr. Bock said.

In terms of patient engagement, connected healthcare also creates choices for individuals about how, when and where they want to interact with providers. "When organizations offer an omni-channel consumer experience, patients have the option to communicate by text, phone, email or virtual visit," Mia Barb, director, solution development and vendor management at Trapollo, said. "It allows people to gravitate to the medium that resonates the most with them."

By using data to assess risk, connected healthcare can also identify when clinical interactions are truly necessary and when they aren't. This is crucial because most health systems want clinicians to work at the top of their licenses, but it can be hard to meet that goal due to current labor shortages and high volumes of patients — many of whom may not need care on-site.

On the flip side, connected healthcare can help also prevent false positives. By continuously monitoring a patient's health and environment, care teams start to understand what the norm is for that individual. They can tell whether changes in data are aberrations or something to be truly concerned about.

"Preventing false positives can reduce unnecessary ER and ambulatory care," Andrew Goldberg, vice president of corporate strategy at Cox Communications, said. That frees up healthcare facilities and clinicians for people who are truly in need. By lowering hospital readmissions, connected health could also reduce financial penalties for health systems.

Connected healthcare solutions show great promise, but only if they reduce administrative burden

To be effective, connected healthcare solutions must be integrated into clinician workflows and systems. The key is to filter out the unnecessary alerts and notifications, so providers only receive the most important. Minimizing alert fatigue is critically important to adoption of new technologies. As a result, the right alerts need to go to the right person at the right time.

Unfortunately, adding the home as a site of care and a new source of data creates disruptions in traditional clinical workflows. Organizations who fail to account for that often experience frustration, even though connected healthcare offers the prospect of better health outcomes.

Health systems must address staffing models head-on. One option is for administrators to create a small, dedicated team to monitor patients in the home and to respond when rising risk warrants it. That team can be ramped up, as programs grow.

Another alternative is to modify staff hours. Some employees can be cross-trained to work on the floor at certain times of the day or days of the week, and then monitor and respond to rising risk among at-home patients at other times.

Ms. Barb believes optimizing the provider experience and reducing administrative burden are important aspects of connected healthcare. "During the pandemic, there was an exodus of clinicians due to burnout," she said. "There are more patients coming with the 'silver tsunami,' so anything we can do to make providers' jobs easier and restore the joy of practicing medicine makes sense."

Although many health systems have adopted connected healthcare, scaling these systems can be challenging

To scale connected healthcare solutions, better integration with the EMR is essential as this is the interface that healthcare employees are trained to use. The EMR drives workflow and serves as the bridge that unifies disparate pieces of patient information that are collected in the clinical setting, at home and on the go.



Patient enrollment, engagement and support as well as reimbursement models are additional barriers to more widespread adoption of connected healthcare. Health system leaders that have embraced value-based care intuitively understand the value of connected healthcare — they see how it can help lower care delivery costs, while maintaining or potentially improving health outcomes.

In fee-for-service models, however, billing is critical. “Historically, adoption of connected care has been limited for these organizations by the lack of CPT codes. Today, due in part to the pandemic, codes now exist for devices, as well as for device set-up for monitoring and intervention,” Mr. Goldberg said.

To improve digital patient engagement and adherence, focus on simplicity

Simplicity is a best practice when it comes to patient communication, as well as connected healthcare system design. Engagement starts the moment a nurse or doctor tells a patient they will be monitored at home.

Patient engagement is stronger when that conversation is clear, simple and easily understood. The patient has to understand the justification and why it’s important. While that’s easy to say, it’s harder to put into practice. Sometimes, that conversation is emotional. Depending on the provider’s communication style or bedside manner, additional reinforcement may be needed outside the office.

Successful connected healthcare programs also require education at home, starting when the patient receives a monitoring kit. A best practice is to include clear and simple instructions for set-up and use and support for program or device-related questions.

“It’s important to eliminate technical barriers that can hinder patient adoption and adherence, such as manually pairing devices via Bluetooth or connecting to a home wi-fi network,” Mr. Bock said. “For example — devices that automatically connect to the internet and software applications with a voice command interface which is helpful for visually impaired individuals or more elderly patients who may find it difficult to navigate a smartphone.”

Another best practice is providing patients with an easy-to-use engagement app they can use to access a mobile device. Engagement apps typically serve as an automated data-collection hub that gathers and organizes biometric and sometimes environmental information in one place. These apps may also include features like secure provider messaging, televisits, educational content, surveys, nutrition coaching and even gamification to keep engagement levels high.

“To achieve the desired results with connected healthcare, we need to focus on eliminating the barriers to adoption and adherence,” Ms. Barb said. “We have amazing tools and technology, but how do we get the rubber to meet the road and solve for the ‘last mile’ in healthcare?”

Conclusion

Connected healthcare has the potential to improve the quality of life for patients and clinicians alike. With greater access to data, providers have the opportunity to take a more holistic approach to care. At the same time, patients can interact with physicians using the communication channels that they like best. Thoughtful deployment is the key to maximizing patient and provider satisfaction with this powerful new technology. ●

With over 10 years of experience, Trapollo is a leading provider of connected health solutions and services to enable care delivery outside of a hospital setting in support of the quadruple aim. In 2015, Cox Communications acquired Trapollo to further their dedication of reinventing the health care journey to a more personalized, frictionless and overall better patient experience while improving the quality of life in the communities we serve.