



Patient Engagement Now Playing: Using Smart TV to Improve the Hospital Experience

Nursing 2.0 Series

Put together, technology innovation and nursing can decrease costs, and lead to a better patient experience and improved population health. This series of case studies explores different types of technology innovation being deployed in the field of nursing. It features members of the Innovation Learning Network, a community of health care leaders and innovators focused on making health care better through good design.

This case study about interactive TV systems as a patient engagement tool is part of a series titled *Nursing 2.0: How Technology Innovations Are Enhancing Care*, which can be found at www.chcf.org/nursing-technology.



Hospitals can be confusing environments for patients and their family members to navigate, especially when they are feeling exhausted, stressed, overwhelmed, or all of the above. When they need help in their rooms, inpatients often resort to the only resource they are aware of: the call bell. Nurses are frequently called to perform non-nursing tasks, such as ordering food, changing room temperatures, and opening window blinds, taking them away from patient care duties. The inpatient experience can also be fraught with gaps in information and communication: “What did the nurse say about my care instructions? How do I order food?”

These inefficiencies and gaps in the care environment are leading to lower patient satisfaction scores, reduced patient engagement with their own care, and delays in healing, all resulting in large financial costs to the health care system.¹

While television (TV) has long been the primary form of in-room entertainment in hospitals, new technology is blending this form of entertainment with

1. J. E. Prey et al., “Patient Engagement in the Inpatient Setting: A Systematic Review,” *Journal of the American Medical Informatics Association*, 21(4), 742-750 (2014).

Bedside learning.

This patient is learning how to use the interactive TV system to find out more about her medications.

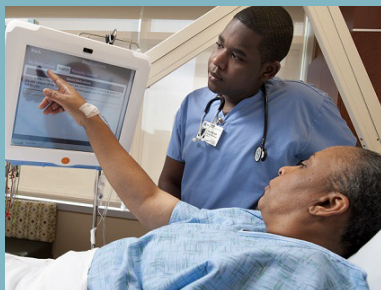


Image courtesy of the Carolinas HealthCare System.

information, education, and intelligent routing of patient requests. Informally termed “infotainment,” and more formally known as interactive patient care (IPC), this technology is changing the patient experience and the provider workflow.

An innovative care delivery model based on the premise that a more engaged patient is one with better health outcomes, IPC systems create opportunities to:

- ▶ Deliver educational materials to patients in their rooms. Customized to the patient’s condition, videos can be prescribed as part of the treatment intervention.
- ▶ Allow patients to make nonclinical requests, which are routed directly to appropriate hospital staff, reducing the amount of interruptions nurses experience for such requests.
- ▶ Enable patients to enter data about their current condition and hospital stay, such as an hourly screen display asking patients to rate their pain level.

Additionally, patient satisfaction scores are now being used to measure hospital performance under

the Affordable Care Act. Because of this change, hospitals and health systems are looking for tools to help increase patient engagement and satisfaction.

A Pilot for Enhanced Patient Care

The Carolinas HealthCare System (CHS), a large health care organization with 900 facilities in North Carolina, South Carolina, and Georgia, saw a need to enhance the patient experience and create an environment in which patients actively participate in their care. With goals to decrease the length of hospital stays and readmissions, as well as better educate patients on how to take care of themselves at home, CHS began piloting the GetWellNetwork system in 2013.

GetWellNetwork leverages in-room TVs to involve patients and their loved ones in the care process by creating experiences tailored to the patient. There are programs for children, adults, and seniors, and programs about specific medical conditions. Using an interactive TV screen, patients can watch videos about their condition, learn about their medications, make requests across the spectrum of hospital services, view scheduled appointments, rate their pain, and use the Internet — among other features.

This IPC system is integrated with CHS’s electronic medical record system and can send alerts to nurses’ phones, providing instant information to care team members, who can more easily monitor patients’ activities and needs. The system also has a survey function allowing patients to send real-time feedback to the hospital.

Two nurses and one clinical informatics supervisor at CHS shared how the IPC technology has impacted patient education, provider workflow and efficiency, the discharge process, and the overall patient experience. Craig Harder, BSN, RN, clinical nurse supervisor and assistant nurse manager, summed up his experience:

“[The IPC technology] is definitely a great tool in our tool belt to foster discussion on a variety of health care topics with the patients. Some patients are better able to receive the technology than others. A lot of it has to do with their age and comfort level with using technology in general, but overall, it has enhanced patient care.”

Virtually all of CHS’s patients use the IPC system. In 2014, 98% of patients interacted with the technology during their hospital stay.



Image courtesy of the Carolinas HealthCare System.

Just for kids. Young patients receive programming that is age-appropriate. The system’s cartoon graphics of different hospital features capture the attention of this young inpatient, her little sister, and their mom.

Smart TV. This screenshot of a TV monitor shows the different ways inpatients can get health care information or contact hospital staff.

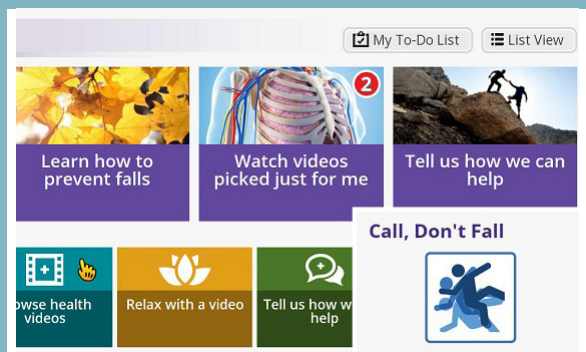


Image courtesy of the Carolinas HealthCare System.

Better Patient Education and Engagement

One of the most notable and intentional benefits of this technology is improved and more streamlined patient education. The nurses reported that the IPC system stimulates better conversations between nurses and patients, and helps nurses be more consistent in their patient education messages. The videos and other interactive tools reinforce the messages shared through CHS's more traditional patient education vehicles: discussion with a nurse and handouts.

Another useful feature of the technology is its ability to track whether a patient has watched an informational video. At the end of each video, viewers are prompted to take a quiz. Essentially, nurses can prescribe a video about a patient's condition and then monitor whether the patient adhered to the treatment plan.

CHS has developed a large and growing selection of informational videos — more than 500 at the time of these interviews. They have also linked the IPC system to their online patient portal, MyCarolinas, so

that patients can access their prescribed videos, as well as other videos in the system, from home.

Both nurses observed eye-opening moments for patients with chronic conditions that were facilitated by use of the IPC system. For example, Amanda Gregory, MSN, RN, clinical nurse leader, shared a story about a patient on her fourth hospital stay for pneumonia, who said she had never understood certain information about her illness until learning it through the IPC system. Although patients like this one likely had received such information previously, the innovative use of the in-room TV caused them to retain it more easily. Melissa Gregg, MSN, RN, clinical informatics supervisor, shared a similar patient story:

"We had a patient with sickle cell anemia, and he told us, 'I've had sickle cell my entire life and, until I watched this video, I did not realize how much I did not know about myself already.'"

Improved Workflow and Teamwork

Routing patient requests through the IPC system has allowed nurses to focus their time on patient care without distraction from nonclinical requests. Patients are required to watch a welcome video on how to use the system, hospital safety, and hand hygiene within four hours of admission. Until the welcome video is viewed, patients are prevented from using other functions on the TV.

With the IPC system, patients can make requests directly to the appropriate hospital department. For example, patients can contact dietary staff for meal requests and environmental services staff about a problem with the hospital bed. Routing these requests directly to the relevant staff person prevents nurses from being interrupted unnecessarily to handle the requests. Gregory explained:

"[The IPC system] has absolutely cut our work down.... We teach the patients upon admission how to [use] the system and they can make their own requests, whether it's maintenance in their room or needs from dietary. This has alleviated a lot out of our day to not have to chase these calls down."

She added that by having requests routed directly to the appropriate departments, requests are typically fulfilled faster.

Gregg also observed that the technology has improved the way teams work together. Noting that teams previously had different ways of interacting with other departments, she said:

"I've seen multidisciplinary cohesion with our teams that we didn't have before. We're more open to sending requests through the system now that we've seen it work. We've seen the maintenance responses, we've seen the patients comment back on how appreciative they are and how on-the-ball we are. [Previously] we mostly felt like segregated disciplines within our own facility."

Streamlined Hospital Discharge Process

The IPC system has also helped CHS improve the discharge process. During their hospital stay, patients are prompted by the system with medication information and given the option to receive their medication and instructions for its use in their room. This process helps minimize delays on the day of discharge and offers an additional venue for educating patients on how to take their medication at home. To date, between 46% and 76% of patients at different CHS facilities using the IPC system have clicked through their medication instruction information from their hospital room.

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She added that the technology's ability to track this patient engagement data presents opportunities to make evidence-based care delivery decisions in the future. For example, if the patient does not understand certain treatments, education can be tailored to this need. Enhanced patient engagement like this has the potential to improve health outcomes.

Anecdotally, the CHS staff members shared their belief that these improvements in the discharge process and the overall patient experience may help prevent readmissions since patients are leaving the hospital better educated about their health and how to care for themselves at home. While it is too early to present supporting data for these outcomes, health care systems like CHS are watching these data points with a hopeful eye.

Patient Satisfaction

The CHS nurses also spoke about the entertainment value of the IPC technology and how this alone has contributed to the overall improvement of the inpatient experience. With IPC, patients have access to the Internet, something patients previously did not have in hospital rooms. Harder explained some of the unexpected benefits of the IPC system for patients:

"I do think [the technology] increases patient satisfaction. I'm surprised at how many people are so excited that they can access the Internet and Facebook. They like the videos and the calming relaxation music and videos as well. It gives them a sense of control... especially if they are technologically savvy. There's a population of patients that aren't interested in using the technology at all... but I think as time goes on, more and more

of the population will be comfortable using the technology and will want to use it."

Gregg said they were surprised by how much they saw patient satisfaction scores increase after implementing the IPC system. Between 2012 and 2015, CHS's patient satisfaction scores increased from 4% to 15% on nurse communication, doctor communication, staff responsiveness, medication teaching, and discharge information.

Summary of IPC Technology Benefits

- ▶ **Better patient education.** More tools and infotainment through videos supplement the provider-patient dialogue about health conditions and treatment.
- ▶ **Strong patient buy-in.** Almost all — 98% — of CHS's patients used the IPC system during their hospital stay in 2014.
- ▶ **More streamlined in-room patient requests.** This has led to fewer interruptions for nurses with non-nursing requests.
- ▶ **Increased team cohesion.** Greater coordination among hospital departments has resulted from direct routing of patient requests through a unified system.
- ▶ **More empowered patients and families.** Patients can make requests during their hospital stay and learn how to better care for their condition at home after discharge.
- ▶ **Improved hospital discharge process.** More efficient medication distribution and

education process minimizes delays on the day of discharge.

- **Increased patient satisfaction.** Patients experience better, faster service and are more involved in their own care.

Challenges and Considerations

Along with significant benefits, the IPC technology brings new challenges and needs for adjusted or new practices. A key component to addressing these challenges and establishing best practices at CHS is its Patient Care Champions Council, which meets monthly to trouble-shoot and formulate solutions (see sidebar). Gregory summed up the team approach to solving problems while adapting to new technology:

“As soon as we find a barrier, we bring it to the team, and it’s fixed.”

The following emerged during the pilots:

CHALLENGE: Nurse buy-in. Some nurses were initially hesitant to use the new technology and integrate it into their daily workflow. While it can save nurses a lot of time, it can feel like an increased workload when first using it.

How to overcome. Training and a solid on-boarding process to use the IPC system are critical to helping nurses feel comfortable using the technology and training patients to use it and to ultimately seeing the benefits. The CHS nurses check in about patients’ use of the new technology during morning

huddles. CHS has institutionalized an IPC system training program, which also experienced a technological upgrade — moving from a paper-based to an online format.

Managing patient expectations is another important component of controlling the workflow for nurses. While patients are empowered to make direct requests, they also need to be realistic about response times. The CHS nurses already using the technology said that other nurses are seeing the benefits to patients, which justifies the work the new technology also adds.

CHALLENGE: Patient buy-in. While tech-savvy and younger patients typically embrace the technology enthusiastically, some patients are less eager or even unwilling to use it. For example, many patients start but don’t finish watching informational videos about their condition. The system alerts nurses when patients don’t finish a program, but encouraging patients to watch the full video can be a challenge and can interfere with time required to address other care needs.

How to overcome. The Interactive Patient Care Champions Council meets regularly to discuss what works and gives nurses the tools to address challenges like this one. The nurses found that giving patients a solid orientation on how to use the IPC system upon admission, as well as having realistic expectations about which patients are more likely to use it, helps manage frustrations. The CHS nurses work to strike a balance between empowering patients and their families with this new tool while not pushing it on people who are not ready to embrace it. During their pilot, the CHS nurses found

that the vast majority of patients use the system in some way, while the consistency and type of use varies significantly from patient to patient.

CHALLENGE: Inappropriate Internet content. With this new technology, patients can access the Internet in their hospital beds through a service provided by the hospital. While the IPC has firewalls to block inappropriate content, the system does not block all negative content, as material on the Internet is ever evolving. Further, content that may be appropriate for some patients can have a negative impact on others, such as anorexic patients accessing social media accounts and confronting social pressures that exacerbate their condition.

How to overcome. Determining how to encourage patients to interact with the IPC system should be dealt with on a case-by-case basis. The Interactive Patient Care Champions Council assesses the challenges that arise, and develops protocols for

Patient Care Champions Council

The Carolinas HealthCare System (CHS) established a committee of clinical staff from multiple CHS facilities, called the Interactive Patient Care Champions Council, to make coordinated decisions and provide ongoing provider training, communication, and leadership to promote the integration of IPC into daily clinical practice.

Council members meet monthly to trouble-shoot problems, evaluate user and nurse feedback, and recommend improvements to the protocols, content, and other system elements.

particular cases, such as working with parents of underage patients to ensure their Internet use is appropriate. CHS is also in regular contact with the technology provider to monitor necessary Internet firewalls.

Lessons Learned and Looking Ahead

CHS is expanding use of the IPC system and currently has several new pilots under way, with some using an iPad version of the technology. The nurses said that they are learning new strategies every day to better use the technology. They also have ongoing conversations about new topics for patient education and new videos to add to the system.

The future of patient engagement technologies hinges on the evidence generated by valid and reliable research related to patient outcomes, such as through the experiences of health care systems like CHS. More data are needed to assess the effectiveness of IPC systems, taking into account the cost of implementation, but evidence is mounting that this technology is yielding major benefits to patients and providers.

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