

## Parkland Health & Hospital System integrates patient interactive platform into fully digital environment



Opened in August of 2015, the new Parkland Memorial Hospital campus in Dallas County, Texas, was conceived and built as a fully digital facility, with an infrastructure designed to evolve and grow along with technology and patient expectations. The all-private-room facility serves a high indigent population and averages over a million outpatient visits per year. It has been recognized as one of the nation's Most Wired™ hospitals by Hospitals & Health Networks® Magazine in 2015 and 2016. The magazine designates this distinction to hospitals and health systems that excel in creating a digitized health care environment. Parkland's commitment to leading-edge technology aids in their mission to increase patient education and build patient engagement, leading to greater patient satisfaction.

"Eight years ago, when they started the concept for this new hospital, it was well-known that technology was becoming the catalyst in change for health care," said Parkland Health & Hospital System SVP and Chief Information Officer, Matthew Kull. At the heart of this strategy was a desire not only to keep pace with medical advances, but also to increase patient engagement via the technology that has become central to our lives. "We just started seeing things like smartphones coming to bear. Tablets ... consumer-based technologies ... and people were starting to expect those technologies in their everyday life."

## Many touchpoints make up a cohesive interactive experience

The interactive experience starts when patients or visitors walk in the door. Multiple kiosks throughout the lobby assist in wayfinding, with maps and information available in multiple languages. Inpatient care begins with an introduction to the footwall found in each patient room. The footwall is an interactive system mounted on the wall at the foot of the patient's bed with a large monitor as the central feature. The patient controls the footwall system from their bed, using a very intuitive remote that is similar to a TV remote they are already familiar with.

The footwall offers myriad services beyond standard television and entertainment, including educational videos that can be tailored to each patient's needs via caregivers' recommendations. "Using the interactive platform from the patient's perspective really helps engage them in their own care. A lot of times patients don't know what questions to ask. And seeing educational videos can trigger questions that they should be asking their doctors," said Amy Van Cleave, a burn unit nurse educator at Parkland. Linked to the EMR, the interactive system tracks which recommended videos a patient has watched, so caregivers can enter each patient's room ready to discuss the topics further, representing added efficiency.

The interactive patient experience system also links to a mobile alerting system in the form of a smartphone-style mobile device issued to each nursing staff member. "So, if I'm a patient and I get prompted to enter a pain score on the footwall, if I respond that I'm in pain, an alert will be routed to the nurse," said Kull. "We also capture and analyze that data throughout the lifecycle of the patient, to determine other potential risks that the patient may have." Furthermore, the mobile alerting system has escalation protocols built in, "so the patient can actually stratify the level of the employee assistance they want on the very first level, which is a huge efficiency for our nurses," said Judy Herrington, vice president of Nursing for Medicine Services at Parkland. That means that if a patient is in pain, the nurse will be alerted; whereas if they need to use the bathroom, the nurse's aide will get that alert, keeping the nurse free for more pressing tasks.

As Herrington explained, the mobile devices can also be used to set care reminders. "One of the standards with Joint Commission when you give an IV pain med, is to reassess that patient within 30 minutes to make sure the pain med was effective. We always struggled with compliance with that, because, as nurses, we get busy, we're multi-tasking. In the new system, we can actually set the call system to ring back to the nurse's phone, that indicates pain reassessment due. You can do that for a patient that's at high risk for pressure ulcers. You can set it to ring you every two hours to remind you to go turn and reposition that patient. So that's hugely efficient for the nurses." She sums up the mobile system's benefits, "If you can't be in the room with the patient, this is acting as your safety net for your patient."

## A technology platform built to last

The team that developed Parkland's technology platform planned for the future, knowing that technology is expanding and evolving at an exponential rate. Kull said, "We have about 50 percent expansion capability within our Ethernet environment ... we've purchased technologies and implemented technologies and platforms that we believe will grow with us, over the next 60 to 80 years." Added Herrington, who was on the original build team with Kull, "By having an all-digital system, the nice thing is, it's layered. We can always go back and add different things ... so it's important to build a platform that's sustainable."

The possibilities for future functionality extend beyond what can be currently imagined, but the team has their eye on some specific features they'd like to roll out soon. One is video conferencing, which may be executed via the footwall or mobile devices such as tablets. This will allow caregivers to connect directly with patients from an offsite location. The benefit goes beyond making a personal connection to actually enhancing care. Kull noted, "The doctor can see the patient, so they're not only hearing the voice, but also seeing the facial expressions. If they're saying, 'I'm fine,' but with a hint of a pained look in their face, that's able to be noticed by the physician."

---

**"Using the interactive platform from the patient's perspective really helps engage them in their own care."**

---

---

**"... we've purchased technologies and implemented technologies and platforms that we believe will grow with us, over the next 60 to 80 years."**

---

The team is also looking into leveraging the large appetite for content on the footwall TV screen to encourage greater patient engagement in their education. Kull described it as akin to the concept of, “You can’t watch TV until you finish your homework.” He continued, “So, if the patient has training, we can delay the presentation of the television until they finish their training, or at 30 minute intervals. You’ve watched 30 minutes of TV, now it’s time to do some training.”

### Implementation: patients lead the way

Naturally, when implementing a new technology-based system, adoption by all parties is a concern. As described by Kull, “We brought on core functions on day one. And we started to phase in different apps in this platform. And with that, we found that not only were our employees impressed with the capabilities, but one of the biggest obstacles we thought we were going to face, was our patient adoption.” As it turned out, “What we found as we started to round the floors and interact with our patients after the go-live of the hospital, was that they were showing us how to use it. Our patients knew inherently how to navigate the screens, because they were built in a very familiar manner to your phone or your television.”

The launch of the patient interactive platform at Parkland proved that technology has become a universal part of our lives, including within the underserved population that Parkland serves. In addition, Herrington noted that the straightforward, icon-based nature of the interface at touchpoints such as the kiosks was helpful to successful implementation. “Our education level, our reading level at our institution is an average of 6th grade, and so the interfaces that the patients go through with this technology are pretty straightforward,” she noted, adding, “That’s (also) great because we have a very multi-lingual patient population.”

### Tips for developing a successful interactive platform

As pioneers in developing a wired hospital with a fully digital patient platform, the Parkland team members have gained some valuable insight into a successful approach. Kull noted, “We realized after looking at the market that what we wanted — what we thought patient experience was going to be — really wasn’t an available product in the market. So we started with our own focus groups of doctors and patients and industry experts here within Parkland, interviewing them about what they thought the future of the patient experience was going to look like.” They soon came to realize the answer wasn’t to adopt an existing product, but rather, “What we were looking for was a platform,” said Kull.

To create that platform, Parkland partnered with Cisco, who helped develop the first generation of interactive patient services deployed in the new facility. Looking forward, Optum® is Cisco’s exclusive partner in further developing the solution for other health care providers in the United States.

Herrington noted the importance of integrating the IT workflow into the hospital functionality beyond the traditional helpdesk role. She also recommended building a Nursing Informatics Department, consisting of nurses who have gone on to obtain IT degrees, to bridge communication between IT and caregivers, “Because sometimes we speak different languages. And that’s frustrating, because we know what we want, but we can’t put it in terms that they necessarily know how to build.” She continued, “They also help us find barriers and things that are going to be hardships for us that we’re not seeing. So, if a facility is thinking about really embracing technology, that’s a role they might want to consider.”

From a nursing perspective, Van Cleave added, “If you’re going to introduce any type of technology, especially in a health care facility, it’s so important to get the viewpoint of the nursing staff, from the people that are going to be using it, because they may think of things that you don’t think of ... and it helps them take ownership. They’re much more receptive of utilizing technology if they play a part in implementing it and designing it.”



## Outcomes and benefits: improved patient experience, happier employees

"In looking at the totality of our experience system, this is not something that is just based on entertainment or convenience for the patient. What we're really doing is we're seeing a level of improvement in outcomes," said Kull, adding, "It's really clear that we have a patient population who is more at ease. They are more comfortable."

Herrington notes that these outcomes can manifest in tangible results. "From a patient-centered perspective, they're a lot happier. They have immediate access and, you know ... it significantly impacts patient satisfaction. And in today's health care world, patient satisfaction means HCAP scores. HCAP scores drive reimbursement, so that has a huge impact on us as a system."

"Our interactive platform takes information directly from the patient's chart that was entered in by the doctor, and communicates that in the patient's room. It shows up on their footwall. The patient can see who their doctor is, who their nurse is, who their nurse's aide is," said Van Cleave. "And it's also very helpful for the nursing staff as well, we're all on the same page, we know who is a fall risk, who is not, who is NPO, who can't eat anything. And it really helps close that communication gap, and prevent some of that miscommunication that is so common in health care facilities." Kull concurs, "We really look at the fact that our physicians and our patients are having an easier time because of this technology."

"As an administrator, it makes my nurses happy," said Herrington. "The acquisition of all this technology that's made their life better, has also in turn helped me, because my turnover currently is less than 5 percent, which is better than national standard. I think the patients are more satisfied and so are the nurses, because they feel their time is being used better." She continued, "Nurses that are coming out of nursing school now are extremely computer literate. They go to school with laptops and they're on their smartphones; they expect us to provide that same level of technology."

The role of patient interactive technology in outcomes may prove to have far-reaching value. "One of the most unanticipated benefits of all of this new technology, is that in the first year of opening, we have collected data points in the amount of over 150 million unique data records that are not started within our EMR," said Kull. "So, this comes from our biomedical devices, this comes from our patient experience system ... we're starting to build algorithms that are predicting readmissions, predicting sepsis. When you look at what a fully digital hospital means, that's really starting to get to the bounds of what we're going to be able to do. We're going to start being able to look in the future and make really good predictions about people's health."

Herrington sees another benefit from the administrative standpoint, "We have the ability, when we load a video, that we can track whether or not the patient watched it. Automatically, the nurse can choose to upload that into the EMR, so she doesn't have to waste time charting it, so it leads to efficiencies. And then we can, in turn, take that data and look at whether or not our staff are meeting our regulatory requirements. So from the standpoint of maintaining our compliance with Joint Commission and CMS and those agencies that oversee our license, we can validate that."

Herrington sums up the benefits thusly, "Now that we have this digital hospital, we now have a digital workforce, we have engaged patients, we have engaged staff, and everybody's benefitting, it's a more exciting place to work, and the patients are safer and happier."




---

**"In looking at the totality of our experience system, this is not something that is just based on entertainment or convenience for the patient. What we're really doing is we're seeing a level of improvement in outcomes,"**

---



11000 Optum Circle, Eden Prairie, MN 55344

Optum® is a registered trademark of Optum, Inc. in the U.S. and other jurisdictions. All other brand or product names are the property of their respective owners. Because we are continuously improving our products and services, Optum reserves the right to change specifications without prior notice. Optum is an equal opportunity employer.

© 2016 Optum, Inc. All rights reserved. WF270184 12/16