

# SPECIAL REPORT



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By Richard Slawsky | Digital Signage Today



We've all been there: arriving 10 minutes early for a doctor's appointment or other medical procedure, only to be left sitting in the waiting room for 30 minutes or more flipping through a year-old copy of *Field & Stream*. If a patient's blood pressure wasn't elevated before then, it likely will be through the roof by the time the nurse calls his or her name.

Other sources of exasperation for patients include doctors explaining medical issues and procedures in, well, doctor-speak — a language incomprehensible to most of us.

Or how about visiting a downtown medical complex for a series of tests, only to spend half the day fruitlessly navigating a seemingly endless series of identical hallways? And when the patient finally finds someone to give directions, more often than not it turns out the correct office is a block or more away.

Those are just a few of the issues causing dissatisfaction among consumers over their health care experience. In fact, a recent Consumer Reports survey indicated long waits to see the doctor and an unclear explanation of a medical issue as some of the top gripes people have with their doctors.

One of the ways health care facilities are addressing those issues, and others, is through the use of digital signage networks. They are becoming

ubiquitous in hospitals and doctors' offices, and new uses for such networks are being tested on a regular basis.

In this mini-guide, sponsored by Digital Signage Today, we'll look at the use of digital signage networks in health care facilities, spotlighting some of the obvious and not-so-obvious uses of those networks.

### Hospitals and clinics

Many cities around the country have some type of medical district: an area that may cover several blocks and contain a variety of facilities, including those specializing in a particular issue such as cancer, heart disease or children's health. In Digital Signage Today's hometown — the modest-sized city of Louisville, Kentucky — the medical district encompasses more than six full city blocks, featuring dozens of facilities and hundreds of offices.

The medical districts in larger cities can cover even more ground. The Illinois Medical District near downtown Chicago, for example, includes 560 acres of medical research facilities, labs, a biotech business incubator, two universities, raw development area and more than 40 health care-related facilities. The IMD is anchored by four major hospitals.

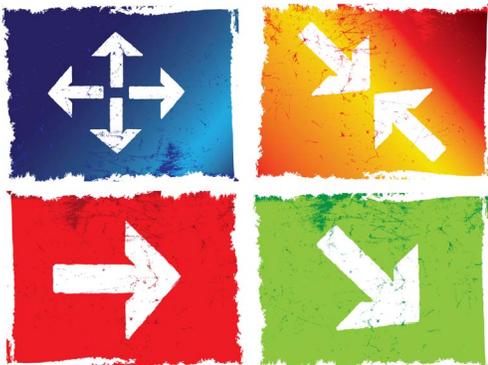
Obviously, navigating such massive complexes can pose a challenge even for people who work in those facilities every day, not to mention first-time patients and other visitors who may have more pressing issues on their minds.

That challenge opens the door to one of the most obvious uses of digital signage in health care: wayfinding.

"From the moment patients and visitors enter a health care facility, they expect to be informed and guided through the often-hectic health care environments," said Jamil King, national health care sales manager for technology provider Panasonic System Communications Company North America. "Wayfinding tools can both greet patients and visitors and can help them easily navigate through a medical building or hospital complex."

The Robley Rex VA Medical Center in Louisville, for example, is an acute care and outpatient facility located on a 47-acre hilltop overlooking the Ohio River, with more than 250 doctors on staff. With such a large staff, occasional staff changes and office moves make maintaining the "Main Directory" static signage nearly a daily chore.

To address those challenges and reap a double benefit of being able to save money while better serving those who visit the facility, the medical center plans to deploy a touchscreen wayfinding system in summer 2015. The alphabetical touchscreens will make it easier for veterans, visitors and staff to



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— Jamil King, national health care sales manager for Panasonic System Communications Company North America.



locate the right offices or services, while making it easy to keep that signage updated and attractive.

And when Children’s Hospital of Orange County in California was in the midst of constructing a state-of-the-art hospital tower on its main campus in 2012-13, directing a steady stream of visitors, patients, families and employees posed a logistical challenge.

Once completed, the 425,000-square-foot tower would be seven stories tall, tripling the size of CHOC’s existing patient care facility and housing new services, including a dedicated pediatric emergency department, advanced operating rooms, a clinical laboratory, and pathology and imaging services.

“There were a lot of moving parts — and things were constantly changing,” said Mellisa Henry, director of marketing for CHOC. Management continually had to redirect traffic through new pathways, doorways and detours.

“We needed a way to communicate up-to-the-minute messaging to keep people informed,” she said. “We also needed to accommodate various languages, change messages quickly and capture people’s attention through something other than static posters.”

To eliminate confusion, CHOC deployed high-definition EP4610 ePosters from ViewSonic in several locations around the new facility. The stand-alone 46-inch digital posters offer a sleek design, slim footprint and versatile input connections for multimedia content uploading.

“Our ePosters really caught people’s attention and helped us direct them to the proper locations,” Henry said. “Plus the devices gave us the flexibility to change messages quickly, scroll between messages and communicate in multiple languages.

Construction of the new tower has been completed, but the wayfinding system has been left in place. In addition, the hospital now uses those displays for ongoing communication to physicians, employees and visitors.

“In an effort to create a cleaner, more professional environment, we’ve restricted the posting of fliers on walls and in elevators,” Henry said. “With our ePosters, we’ve now created strategic places where people can find the latest messages — and in a much more aesthetically pleasing manner.”

Digital signage also can play a role in health care facility security, Panasonic’s King said.

“In the event of an emergency or an unauthorized individual in the building, content to inform and direct both hospital guests and staff can be easily streamed over displays throughout the facility,” he said.

## Recognizing supporters

Donor-recognition signage allows health care facilities to transform static entryways into a digital experience that recognizes the benefactors who made the facility possible. Displays can offer optional interactive capability, allowing health care patrons to interact with the application to learn more.

Vancouver, Canada-based BC Children's Hospital Foundation, for example, supports the people, places and things required to ensure children in British Columbia have access to outstanding pediatric care. So when the foundation launched its \$200 million Campaign for BC Children, it sought a more provocative way of communicating with hospital employees and visitors.

Ultimately, it set its sights on an interactive donor wall, tapping 2C Visual Communications (since renamed Fire&Light Media Group) in Vancouver, along with digital signage software provider Scala Inc.

The wall had to attract the attention of passing visitors and encourage donations, profile key donors, educate the public about the capital campaign and keep everyone up to date on the progress of the new hospital construction and campaign proceeds. By integrating a mural with simple floor decals, sensors, LCD screens, video, DMX lighting and other special effects, the system could educate and entertain hospital visitors and staff in keeping with the campaign's "Be a Superhero" theme.

The partners worked together to create a 10-foot-by-15-foot display featuring four LCD screens, four audio speakers, two motion sensors, four distance sensors, lighting and a cast of financial supporters and other everyday men and women who are the heroes of BCCHF.

When someone enters the space and steps on the floor decals, motion sensors activate short loops of content on the main screen that tells viewers how they can interact with the mural. At the same time, a soundscape consisting of muted city sounds — such as skateboarders cruising by, buses driving along and people chatting — will begin to play.

The floor decals give viewers directions such as "Stand here to play." There is a decal for each screen, four in total. When a person is detected on a floor decal, the video content associated with that decal begins to play with the connected screen.

Although the main hub for managing the interactive donor wall lies within BCCHF's information systems department, the donor relations team can manage content for all four LCD screens from anywhere in the hospital that is connected to the network.



## Digital signage and wonder: 50-foot video wall brings adventure to children's hospital

By Christopher Hall, editor, *Digital Signage Today*

Unless someone is having a baby, a trip to the hospital is rarely a joyous or fun occasion — especially if you're a child; doubly so if you're a child and the patient.

So when Nemours Children's Health System recently undertook a \$270 million renovation and expansion of its Alfred I. duPont Hospital for Children in Wilmington, Delaware, it paid special attention to the experience of its young patients.

And when chemicals titan DuPont — more fully, the E. I. du Pont de Nemours and Co. — came to Nemours Children's Health with a generous donation and a specific challenge, the stage was set to bring a very special interactive digital signage experience to the hospital's youthful patients.

According to pediatrician Dr. Neil Izenberg, the chief executive of the Nemours Center for Children's Health Media, the donation and challenge was to “create something spectacular in this soaring new atrium that would bring joy to kids and a little fun and a big wow factor.”

The hospital's new Discovery Zone is a 50-foot-wide by 9-foot-high video wall featuring Microsoft Kinect gesture-interaction technology that will allow up to 30 children (and adults) to interact with the on-screen landscape, flora and fauna.

“Actually we expect that, contrary to the usual feelings about a hospital, kids are going to really love being here,” Izenberg said in a recent interview. “And we just hope



we can tear them away so they can go to their doctor's appointments.”

The Discovery Zone was designed by Kinesis Studio of San Francisco, which creates large-scale gestural technology experiences frequently deployed as entertainment and therapeutic stations in children's hospitals. It comprises 45 model X464UN 46-inch displays from NEC Display Solutions of America.

“We are delighted to be a part of such a worthwhile initiative, especially one that will bring joy to children during their hospital stays,” Ashley Flaska, NEC's vice president of marketing, said in the announcement. “This combination of video wall and gesture technology expands all our imaginations, and underscores the commitment that Nemours and Kinesis Studio have made to creating something spectacular.”

### Making the wait less painful

No matter what changes will occur with the U.S. health care system over the next few years, one feature is likely to remain the same: the amount of time spent in the waiting room of a doctor's office.

Those waiting rooms long have been stocked with medical brochures or dog-eared copies of *People* magazine or the aforementioned *Field & Stream*, but



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— Mike Zmuda, director, VUKUNET Global Systems and Operations for NEC Display Solutions.

digital signage quickly is supplanting those old standbys. Once patients arrive where they need to be, the next role digital signage can play in a health care facility is, to put it simply, to make the time go by more quickly.

“As you can imagine, reducing the amount of time a patient feels like they’ve been sitting in the waiting room waiting to see the doctor definitely helps,” said Joe Contreras, director of product and solutions for technology company Toshiba America Business Solutions.

Those screens are being used for much more than playing today’s broadcast of “The Bold and the Beautiful” or reruns of “Judge Judy.” In many cases, what is played on the screens was created by companies that specialize in creating content for waiting rooms.

When digital signage was in its infancy in the 1990s, for example, anchor-woman Joan Lunden hosted a series of special reports specifically designed for medical waiting rooms. Other content opportunities include informational pieces on specific medical procedures, benefits of certain medications and dietary and exercise tips.

“Digital signage is considered one of the most effective communications tools due to the dynamic nature of the screen content changing from image to image or pure video, versus the use of static signage,” said Mike Zmuda, director, VUKUNET Global Systems and Operations for Itasca, Illinois-based NEC Display Solutions. “Simply put, good digital signage content is relevant for the audience and the environment and offers context based on what is relevant at that particular time, in that particular health care facility.”

The Robley Rex VA Medical Center, for example, is using HughesON digital signage from Hughes Corp. to keep patients informed at its main facility and to push out educational and informational content to eight outpatient clinics in Kentucky and Indiana.

The information, shared in real time, ranges from contact and educational information about the Veterans Crisis Line to content about special events, advertisements for upcoming classes available to special groups, changes to benefit information, information from headquarters in Washington D.C., current events and notices about the quarterly veterans town hall meetings with hospital directors.

In many cases, the facilities aren’t paying a cent for those waiting-room networks. Instead, the cost of the hardware is supported by the advertisers whose content is featured on those screens.

“What’s happening is that integrators and providers are using that as a way to fund the system,” Contreras said. “The integrator may say, ‘Hey, let us come

in and install this digital signage, and by the way you won't have to pay for it because the cost is covered by the messaging on the screens.”

In some cases, that messaging may result in incremental revenue for the office.

NEC's VUKUNET, for example, is an automated ad-delivery platform and marketplace for digital out-of-home networks. The VUKUNET suite of software products includes a universal ad-serving solution with modules that enable network operators to make money through advertising simply by providing time on their networks. Other facilities may choose to sell ads on their own or run strictly internal promotions, such as spots featuring the hospital's gift shop or dining facilities.

### Helping with the paperwork

From the patient's perspective, filling out a stack of paperwork on the first visit can be nearly as painful as the wait to be called back to the examination room. For the doctor, patient check-in can be one of the most costly and error-prone aspects of treating patients.

Once the forms have been completed, a receptionist or other administrative person must enter that information into the office computer. Deciphering a patient's handwriting often can involve a judgment call that can result in incorrect information being included in a patient's file.

At many facilities, digital signage is being integrated with kiosk technology to allow patients to fill out forms electronically rather than with pen and paper.

Espanola Regional Hospital and Health Centre in Espanola, Ontario, Canada, for example, worked with York, Pennsylvania-based Livewire Digital to deploy interactive self-service check-in kiosks with integrated digital signage functionality to optimize patient check-in. The system issues each patient a printed receipt with a number along with an explanation and overview of how the process works.

The patient's arrival then is posted to digital signs in staff areas to alert relevant hospital workers.

“This is a great way for Espanola Hospital to manage patients in their triage area in an effective and timely way,” Livewire Digital CEO David McCracken said in a news release. “We see more and more healthcare properties introducing interactive technology to their new facilities to improve the patient engagement process.”



## Health Media Network partners with heart doctors on digital signage deployment

Digital media company Health Media Network has partnered with the American College of Cardiology on a project that will increase the size of HMN's Cardiology Network while broadening the distribution of ACC's CardioSmart initiative. CardioSmart provides tools and resources to heart-health providers and the populations they serve to foster communication and improve health outcomes. The ACC is a 47,000-member nonprofit medical professional society whose mission is to transform cardiovascular care and improve heart health.

Under the agreement, HMN is granted the exclusive right to install digital screens featuring CardioSmart TV content in the waiting rooms of more than 13,000 cardiovascular practices nationwide. In addition, CardioSmart TV content will be distributed across HMN's existing Cardiology Network footprint, providing additional high-quality educational content to almost 4 million cardiology patients every month.

"The goal of Health Media Network is to enrich the patient experience at no cost to the physician, so this is a great benefit to physicians and patients, while also providing a credible and impactful advertising platform for pharmaceutical and con-



**HEALTH Media NETWORK**

sumer packaged goods as well as other companies that need to engage with patients interested in heart health," HMN's COO Larry Newman said.

Dr. William Zoghbi, ACC's former president, said the collaboration will make it easier for the ACC and its members to bring reliable information about preventing and managing heart disease to patients, caregivers and all members of the care team.

"Patients must be well informed in order to be active participants in meeting health goals, and this program will support our members' efforts to involve patients and caregivers in improving their own health outcomes," Zoghbi said.

### On the horizon

Health care providers, insurance companies and consumers continually are seeking ways to better manage health care costs, and digital signage is playing a prominent role in that effort.

New uses for digital signage in a health care facility include functions such as displaying a patient's progress in surgery on a status board, in much the same way flight status is updated at an airport. The facility simply replaces the patient's name with a code number known only to the immediate family as a way to avoid running afoul of the Health Insurance Portability and Accountability Act. Over the course of the procedure, that patient's status can be updated from "in surgery" to "in recovery" to "ready to receive visitors," or a similar message.

In addition to providing information throughout a health care facility and in the waiting rooms of doctors' offices, digital screens increasingly are being used to educate doctors and deliver health care itself.



**“We are developing practical applications for these technologies so that surgeons in any setting can have access to the global surgical community from within their own operating rooms.”**

— *UCLA surgical resident Dr. Justin Wagner*

The Liberty Science Center in Jersey City, New Jersey, for example, offers a “Live from Surgery” program where students and educators can view a medical procedure on a video screen while the procedure is taking place. Participants are to ask questions of the operating-room team to help them gain new insights into surgical procedures, anatomy, risk factors and careers in technology and health care fields.

Sessions available for viewing include heart surgery, kidney transplants, neurosurgery and orthopedic procedures. The center also offers prerecorded sessions on heart transplants and neonatal surgery.

Others are incorporating up-and-coming technology with digital screens to deliver health care education. In 2014, UCLA surgeon Dr. David Chen and surgical resident Dr. Justin Wagner began using Google Glass to teach hernia-repair procedures to doctors around the world. Google Glass is worn like conventional glasses, but it houses a tiny computer and high-definition camera that can connect wirelessly to stream live.

With the assistance of Chen and Wagner, surgeons at a hospital in Paraguay wore Google Glass while performing adult surgeries to repair a common type of hernia in which an organ or fatty tissue protrudes through a weak area of the abdominal wall in the groin.

The surgeries were streamed to a group of doctors in the United States, who could watch and oversee the procedures on video screens. They also could transmit their comments to the surgeon, who could read them on the Google Glass monitor.

The UCLA team also visited Brazil, where they used Google Glass during three hernia surgeries and streamed a live debriefing session afterward. The projects are part of an educational arm of Hernia Repair for the Underserved, a nonprofit organization dedicated to providing free hernia surgery to children and adults.

“We are developing practical applications for these technologies so that surgeons in any setting can have access to the global surgical community from within their own operating rooms,” Wagner said. “Even after the training is over, local surgeons can be teleproctored remotely so they will remain connected to experts worldwide.”

Telehealth, as the concept is known, uses technology to allow patients remote access to doctors and health care professionals they normally wouldn’t be able to access because of distance. The American Telemedicine Association estimated that more than 800,000 online patient-doctor consultations took place in 2014.

“This is expected to grow rapidly as more consumers, providers and payers look to the convenience of online services,” the ATA said in December.

In Montana, for example, St. Vincent Healthcare has launched a pediatric tele-neurosurgery consultation project, which allows some pediatric patients who have received a head injury to stay in Montana without transport to a metro area for care.

Standards for care of children with head injuries require the patient to receive a computed tomography (CT) scan, be observed for 24 hours and then repeat the scan. For patients in Billings, Montana, that means a 550-mile trip to Denver, where the nearest pediatric neurosurgeon is located.

Typically, the patient was transported to the Children’s Hospital Colorado in Denver via air ambulance for observation at an estimated cost of \$15,000, while that child’s parents made an eight-hour drive by car.

With telehealth, on the other hand, the child receives the CT scans in Billings while the neurosurgeon in Denver reviews the CT and conducts a video assessment of the child. If the neurosurgeon and the doctors in Billings determine that the child is at low risk for complications, that child is able to stay in his or her home community without the need for a costly and disruptive trip.

“For those pediatric patients requiring transport to the Children’s Hospital Colorado, once the child is discharged, follow-up visits can be conducted via telemedicine,” the ATA said. “The telemedicine service provided is more convenient for our Montana pediatric patients and saves travel costs for them without compromising the quality of care.”

## Conclusion

It wasn’t long ago that digital signage was a rarity in health care facilities. Today, it is rare not to see digital screens in those venues.

As technology changes, the use of digital signage in a medical facility likely will change as well. Just a few short years ago, touchscreen wayfinding solutions were unheard of, while today it’s something we’ve almost come to expect. And while not long ago running a video conference to an operating room in South America and observing a medical procedure through the eyes of a doctor would have been considered an impossibility, today it is nearly impossible to believe that it can’t be done.

Where health care will be in 10 years is impossible to know. It’s a good bet, though, that wherever health care is in that time digital signage will be playing a key role.

