Digital Media in Healthcare
Bringing the Patient, the Staff, and the Hospital Together.

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Digital Signage in Healthcare

Of all the industries that benefit from information management, healthcare is one of the strongest candidates for a robust, multi-channel digital media network. The amount of information that passes among hospital administrators, doctors, staff, and patients is staggering. On average, a doctor spends almost one-third of a day away from patients, with most of that time dedicated to paperwork.¹

The access to patient information spans the spectrum of administrators and doctors who can learn about procedures, to pharmacists who work with doctors in supplying the correct medication, to nurses, aides, and interns responsible for attending to patients, to the patient, the one on which all the information pertains.

A digital media network is an incredible benefit, acting as the superhighway for information because of its ability to house and share relevant information as desired. When a doctor sees a patient, she can access the pertinent information of the patient quickly, reliably, and securely. At Crouse Hospital in Syracuse, New York, dozens of doctors have been given iPads with remote access to the hospital’s data centers for faster, better, and easier sharing of information needed for patient care.²

And, of all the industries that must rely on information that is accurate and available, healthcare again sits at the top. The most important thing a hospital can do, from administration to medication to entertainment, is be relevant and timely. Every patient is unique, regardless of procedure. Like patients, no two conditions are exactly the same. It can be matter of life or death that the information the hospital collects and uses is germane to the individual patient and the situation.

Two key practices in health care have developed through the use of digital media networks.

Telemedicine and Telehealth
Telemedicine is a growing practice in systems with sprawling facilities. Defined by Wikipedia,

“Telemedicine is the use of telecommunication and information technologies in order to provide clinical health care at a distance. It helps eliminate distance barriers and can improve access to medical services that would often not be consistently available in distant rural communities. It is also used to save lives in critical care and emergency situations.”³

1. Gilchrist, Valerie, MD; McCord, Gary, MA; Schrop, Susan Labuda, MS; King, Bridget D., MD, McCormick, Kenneth F., MD, Oprandi, Allison M., MD; Selius, Brian A., DO; Crosher, Michael, MD; Maheshwary, Rishi, MD; Patel, Falguni, MD; Shah, Ami, MD; Tsai, Bonny, MD; Zihlman, Mia, MD. Physician Activities During Time Out of the Examination Room. *Annals of Family Medicine.* 11 July, 2005. http://www.annfammed.org/content/3/6/494.abstract


Telemedicine focuses on the curative aspects of health care, the ability to render a diagnosis and prescribe a solution through electronic channels. Telehealth, “…is the delivery of health-related services and information through telecommunications.” It is much more broad in its scope of the healthcare field. It includes clinical aspects such as videoconferencing among staff and transmission of medical documents for diagnosis, as well as non-clinical uses, like patient education, Continuing Medical Education (CME) for physicians and staff, and administrative communication.

The big factor in this ecosystem of technology is digital media and digital signage, the screens and applications.

**Digital Signage in Healthcare**

Digital signage is a network of managed digital displays designed to drive awareness and engagement within pre-determined objectives. It is both the platform and the content on which the telecommunication activities of the system reside.

What makes digital signage an attractive proposition for venues is its control over the network and its ability to incorporate various channels seamlessly. In its earlier forms, digital signage was only a computer server sending video to a screen. Today, that server can manage various kinds of input – data, still images, video, online content such as social media and RSS - and deliver it in any customized format to any kind of screen with passive (one-way “push” messaging) or active (two-way interactivity) behaviors. Further, digital signage has begun to develop intelligence to learn from interactivity and data on what works best in given scenarios, such as time, place, and audience.

It is no secret that telecommunications technology over the

Various forms of content, including video, data, documentation, and medical information are acquired - including the ability to digitize physical material - and managed through a centralized server. The server can then deploy the content to any type of output device or screen (such as a TV, tablet, mobile smartphone, or diagnostic device) depending on need. In addition, those devices can communicate with the server based on interactivity from the user.

The server can acquire and deliver content securely over wired or wireless methods, including satellite.

past few years has had a tremendous influence on healthcare. But the appeal of technology’s capabilities must be matched with the right strategy to implement a network in an information-heavy industry. The devil is in the details. Simply dropping a screen in a building does not make the system more efficient. A strategy is paramount to learn and understand the details in deploying a digital media network.

In this paper we’ll examine the three factions in a hospital system – the patient, the staff, and the hospital itself - and how they can benefit from a digital media engagement.

The Patient

A trip to the hospital is both something that will happen in our lives, yet is a trip that we are not eager to make. For the patient, the anxiety of visiting a hospital is never minimized. From a fear of procedures and devices to the general unknown of outcomes, a hospital or clinic visit can be a nerve-wracking event.

Reducing Anxiety

Over the last several years, hospitals have evolved. In the past, hospitals wore the stigma of an over-sterilized and compartmentalized facility where the sick and weak went for care. Patients were sequestered in rooms down long white hallways where only doctors and weary relatives were to be seen. Now, hospitals have begun to adopt resort-style amenities to make a patient’s stay more comfortable. From on-site restaurants to private, multi-room suites for a patient and family, hospitals are now evolving into facilities with a focus on providing a better experience for the patient beyond the procedure.
One of the earliest adopters of understanding that video can impact a patient’s stay was Kaiser Permanente in Roseville, California. In 2004, they ran a pilot program where they showed a video to incoming patients that outlined the details of the patient’s stay. The pilot was so well received that Kaiser Permanente rolled out to all of its locations in 2006. Right away, leveraging digital video to educate the patient about the hospital can reduce his anxiety. “This video empowers the patient by providing much-needed, basic information about their hospital stay—from acclimating them to their surroundings to providing counsel on where to go for what they need while they are in our facility,” said Kurt Swartout, M.D. with Kaiser Permanente.5

Research has shown that providing education about a procedure to the patient before the patient undergoes the procedure can reduce the patient’s anxiety levels.6

One particular situation can be especially unnerving: Getting the diagnosis. Philips Electronics has created an ambient experience involving both video and audio with an “Uptake Room,” and an “Adaptive Healing Room,” rooms designed to reduce a patient’s anxiety while undergoing PET-CT imaging, a combination of PET (Positron Emission Tomography) and X-ray CT (Computed Tomography). Here, digital media benefits the doctor’s ability to treat the patient by affecting the physiology of the patient for a better diagnosis as well as help to reduce the patient’s own anxiety over receiving the diagnosis.7

In fact, physicians have said they place considerable weight on the patient experience when deciding where to refer patients, and data suggests that patients will choose a hospital based on amenities and non-medical characteristics.8

Digital media is a big influence on this trend. Starting with the TV in the patient’s private room, he can now access multitudes of video entertainment, much like a hotel or spa. The big addition is access to the hospital system itself. Hospitals can leverage the in-room screens to provide access to hospital information.

**Patient Education**

The traditional standard operating procedure for digital signage is that the venue creates messages for the viewer. In this case, it’s never more important than when a patient can access information about conditions and procedures. This gives the patient a lot of knowledge about the experience, and can help generate much stronger dialogue between the patient and the doctor. The patient understands the steps when undergoing a procedure, and the doctor can share the education with the patient using dynamic media designed to help convey the information.

There are two ways a patient can access information through digital media: Active and Passive. In the active mode, a touch-screen application can be used, where the education is delivered at the pace and comprehension level of the patient, not necessarily the doctor. The patient can get answers to common questions, learn more about the staff and facilities, and discover what procedures may take place during his care. The passive mode can deliver education that may be more general and be delivered through screens throughout the facilities on strategic locations, such as patient rooms and waiting rooms.

Providing programming tailored to the patient offers several benefits. In addition to reducing anxiety, it can boost the hospital’s branding as a patient-friendly facility, a now common trait among the most desired hospitals. Griffin Hospital, located in Connecticut, decided to allow patients full access to their own medical records. The result was an 80% increase in referrals.9

Dr. Carl Abramson, a Chiropractor in Los Angeles, uses digital signage to educate patients about the benefits of and science behind chiropractic. “It’s about awareness. Videos will usually encourage deeper conversation about procedures and results, while eliminating any apprehensions that the patients may have had.”

**The Pediatrician’s Office**

In all of healthcare, the field of pediatrics stands out as a beneficiary of delivering relevant education while reducing anxiety. For parents, few things may be more traumatic than a trip to the doctor for a child. The waiting rooms and examination rooms have evolved into warm, inviting areas designed to appeal to the children to reduce anxiety. How does digital signage fit into this mix? Digital signage can be placed in waiting rooms and parents and children can access the screens for entertainment or education. “There has been great response from our clients and we think the programming content is good,” said Rahni Patel, M.D. at North Penn Pediatrics in Lansdale, Pennsylvania. “The parents are very happy that we offer this.”

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Family and Friends
Another big trend over the past several years has been the inclusion of family and friends in the patient’s experience at the hospital. Now, family members can be next to the patient for the entire experience, only absent when absolutely necessary. The family is exposed to the information, strengthening the bonds between the entire family and hospital, an ongoing effort to reduce anxiety.

The ability to share information about health care can extend beyond the hospital itself. With web-based, HTML digital signage, health care facilities can share their digital screens to outside participants through the internet by providing a simple web address. For healthcare facilities specializing in rehabilitation, physical therapy, and long-term care, access to the daily events or schedule can generate a key connection point between family members and patients.

Reducing the Perception of Time
Whether it’s waiting for a doctor, while a loved one goes through a procedure, or for results, waiting is simply a fact of life with healthcare. Unlike time flying when having fun, waiting can wear down a person due to the mental strain of the situation.

Digital media has the benefit of suspending the perceived waiting time.

It is often assumed and stated that an audience in a waiting room is a “captive audience.” This is not true. The waiting room is full of people pre-disposed with thoughts of their loved ones being cared for. A squawking box in the corner does not necessarily take their minds of the reason they are there. Yet the waiting room is an optimal opportunity where hospitals can share information to help bring greater awareness and understanding.

People in waiting rooms have questions, concerns, and a desire for information. When addressed with targeted and relevant digital signage, the content can reduce anxiety, boost the viewer’s knowledge base, and reduce the perceived waiting time.

An effective content model has proven to work. In a 2009 Arbitron study of the CARE Media Network, 92 percent of viewers thought CARE Media TV programming was a good thing for doctors’ offices to offer in the waiting room, and 88 percent of viewers found the health education credible and useful.10
Digital signage can provide programming with running times that fit the environment and situation. Instead of 30- or 60-minute programs, the content can be five minutes, or 10 minutes, long enough to engage a viewer, but not too long that a viewer will bore of the program. As a distinct medium, digital signage is not bound by broadcast standards of running time. This is especially beneficial to different areas of hospitals where waiting times may vary.

Every single part of a program can be tailored to the environment, audience, and purpose. In contrast to programming where only parts of it may appeal to a viewer, the entire program can benefit an audience because it’s so tightly tailored to the criteria of the situation.

The Marketing of Medicine
Much like shopping online, many people now head to the Internet to learn more about medical conditions and procedures, especially before visiting the hospital. The hospital and staff build stronger bonds with a tech-savvy audience by presenting digital media access and partnering with the patient through the process. While the medical community is traditionally a mission-driven destination – a destination of need, not a destination of desire - the marketability of a digitally connected facility resonates not only with a generation that has grown up around computers, but also with older patients as well. In late 2011, a study revealed that cancer patients in their mid-60s were much more likely to use web-based technology. In fact, a tech-savvy hospital can reap rewards. In early 2012, Takoma Regional Hospital in Greeneville, Tennessee, was reimbursed $1.3 million in federal money for its efforts in converting to electronic health records.

Phil Cohen, President and CEO of Care Media sums it up, “A Digital screen in a medical waiting room serves the patient / parent by providing information directly related to her top-of-mind presence, the reason they are there. It serves the practice by motivating the viewer to ask questions, report observations, and reduces perceived waiting time. It serves the advertiser by providing that viewer engagement resulting in recall, as well as being associated with the viewer’s doctor carrying her perceived recommendation. You hear win-win in many situations but this DOOH in a medical waiting room is truly a win-win-win…oh, and good for the network also. So it’s win-win-win-win!”

In the end, the goal for all medical care is the well being of the patient. Hospitals, leveraging the best digital media solutions, can improve a patient’s experience with medicine, a solution that benefits everyone.

The Staff

Patients come and go, though, and often the real beneficiary of a digital media network can be the staff. By their very nature, hospitals operate under a very high level of awareness and preparation. At any moment, a patient could come through the doors that could tax the resources of the staff. It’s vital that everyone on-site be ready to go. Digital signage is a medium of time and relevance, where information can be delivered instantly.

The Admission Process
It used to be that paperwork was the first order of business when checking in. Some parents remember the feeling of watching mom-to-be fill out paperwork as she was in labor. From medical and safety standpoints, the documentation could contain extremely important information – whether a patient is allergic to any medications, for example. But once entered, it’s difficult to know who will see it and when. By using online resources coupled with the digital network, the staff now has access to this information upon arrival. Then staff at all levels can access it to quickly determine the best course of action for the patient.

Information and Alerts
Hospitals are living-breathing entities with schedules that change by the minute. When events have moved to different locations or times, or new events occur, the ability to share this information with everyone on-site in a timely and relevant fashion is critical.

Imagine a scenario where a large-scale accident is sending dozens of patients to a single emergency room. With digital signage, messaging can be provided not only to the ER but also to all other floors and levels where patients may need immediate care. Instead of hearing about something on the news, the hospital can control the flow of information that is important to the hospital, including any information gathered on-site that gives the staff the advantage of better care once the patients arrive.

Any changes that affect the patient – a surgical procedure moved to another location due to an emergency – can be delivered to the right personnel instantly. When medicine is involved, timing can be everything; delays can affect treatment. Digital signage’s ability to eliminate delays is a benefit to those who rely on timing as a key factor in treatment.

Locate, Navigate, Medicate
Hospitals are no longer single-building facilities. They are sprawling complexes, sometimes covering several hundred acres in several buildings. Two ways in which digital media has grown to bring the three factions – the patient, the staff, and the hospital – close, is through navigation and Telehealth.

Interactive, wayfinding digital signage can show the patient the right way to the specific office or specialist. If the doctor is working at another building, the appointment may be changed to suit the doctor and the patient.
**Telehealth**

But wayfinding is often limited only to the immediate location or complex. Doctors and staff are rarely grounded to one building or area, routinely working at various locations within the system. Almost like an airport terminal, digital signage can provide staff with updates on the locations of specialists and doctors at any given moment during the daily schedule.

Applying the practice of Telehealth, the network of screens, interactivity, and messaging can bring together staff and patients in real time. This benefits the entire system. Urgency may require attention that would otherwise not happen due to distance or an inability to communicate. Overcoming these barriers are direct results of an integrated digital media network.

**Doctor Education**

Doctors are always learning. In fact, every licensed physician in the U.S. must go through a certain amount of Continuing Medical Education, or CME, every year to maintain a license.13

Digital signage provides a huge benefit to physicians and learning. Digital signage networks that have day-parting control or on-demand features can allow staff and physicians to watch videos on the same network during off-hours, reducing the need for another channel of programming. They can simply tune in the same channel that patients watch when the clinic is closed.

**Take Two, and Call Me in a Few Minutes**

As we have seen, digital networks have a solid advantage in conveying information. When a patient is prescribed medication, it’s important that the prescription is accurate and ready when the patient needs it.

“Digital media is a key benefit to getting the right medication in the hands of our patients,” says Kary Mansu, Doctor of Pharmacy at Sutter Health Medical Center in Sacramento, California. “There are two areas where digital signage is beneficial to Pharmacists and healthcare providers. First is getting the correctly prescribed medication in the hands of our patients. Since the prescription is delivered digitally, we are able to fill it much faster than if a patient brings in a written prescription, which they could lose in transit. The second, and even bigger advantage, is the power interactive programs give Pharmacists to capture drug interactions within a patient’s profile, allowing us to address patient safety concerns and tailoring medication regimens specific to each patient. It also presents opportunity for Pharmacists to educate patients regarding their medications.”

Digital signage can offer a more dynamic method of drug instruction and use, and can follow the FDA guidelines for prescription drug advertising.14

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Hospitals are much like humans. They have many end-points that work under both voluntary and involuntary actions. While much of the operation of a hospital system comes from a central location, that operation is affected by internal and external influences. If you consider the scenario where a massive accident could send dozens of patients to an emergency room, it alters the course of the day for the rest of the system. The flow of information, immediate or gradual, direct or indirect, can have impact to even the farthest reaches of the system. A centralized digital signage network empowers the system to communicate with determined speed and accuracy, to keep everyone informed, and to provide a degree of efficiency in the management.

The medical field is continually evolving with regulations, laws, forms, and procedures around the well-being of patient. Every facet of health care is always under scrutiny and very often subject to change. Interactive content delivered by the administration can give the staff relevant and timely information as it pertains to the system as a whole.

The Tools
Technology is not just seen in screens. Every day new technology enters the medical field, from surgical devices to health monitors to robots and tiny cameras that assist surgeons in the operating room. In the same way that digital signage can deliver videos about procedures, digital signage can deliver educational material about the hospital infrastructure. Considering the number of people who may come into contact with any given device in a patient’s room, the ability to share out instruction can be a huge benefit to the staff, and providing dynamic video instruction compared to paper instruction can improve retaining the information. Further, because the videos are located on a central server, they can be accessed anywhere at any time – there is no need to haul around instruction manuals.

Philanthropy
Fundraising has become a major revenue stream for hospitals, especially for non-profit hospitals and facilities that care for large numbers of under- or uninsured patients. In 2010, over $8.2 billion were donated to health care facilities. In state-of-the-art facilities, donors are recognized by interactive screens instead of plaques bolted on a wall. Screens provide greater visibility to the philanthropic community. Viewers can learn more about the donor, show where the donor’s money may be going, and offer greater recognition for the donor’s activities with the facility.

Advertising
A hospital can deliver a very targeted audience that may be very attractive to certain types of advertisers. Advertising in hospitals may not only be encouraged but welcome. When partnering with outside companies looking to get the word out to personnel and patients in a hospital, the benefits can be substantial. Hospitals are unique environments where human traffic can be substantial but the propositions are small. There is very little inside a hospital that is unrelated to the hospital itself. With advertising on a hospital’s network, restaurants and businesses around the hospital can see an influx of traffic from large healthcare systems. On the other side, hospitals can see a potential financial revenue stream from the right kind of advertising. Because digital networks are almost pure cost centers, justifying their existence may include opportunities for revenue generation. Whether it’s the local eatery, concert hall, or cinema, the opportunity to advertise can be a win-win for both parties involved.

Hospitals can use digital signage to promote surrounding businesses and partners that strengthen the relationship between them for the benefit of the patient. For example, a hospital may allow pizzas to be delivered to the hospital for the patient and family. Allowing the pizza restaurant to promote on the network strengthens the restaurant’s awareness inside the facility, and brings more amenities to the patient. This establishes and grows the hospitals brand in the experiential marketing that many health care facilities are aiming to achieve.

Reduction of Errors
Some of us may have seen prescriptions written by a doctor, and wonder if the pharmacist has any way of interpreting the chicken scratches. One of the human traits that digital networks can reduce is misunderstanding due to poor communication. Due to their closed-circuit nature, digital signage networks offer a level of control where individuals can monitor and filter every piece of content being pushed out over the network. Often, more eyes fall on content than just the doctor and the patient. This encourages viewers inside the system to be quality assurance specialists as well, ensuring that all content going out over the network is accurate without any need to question whether that doctor’s I was a T or an L.
As you can see, the flow of information through a hospital system is massive. Trying to create a digital network that can help the system manage this flow – including those who have access to it and those who can deliver it - can be equally Herculean. The appeal of hanging pretty screens all over and handing out iPads might trump the strategy of doing it, but the most important thing a hospital facility can do is develop a strategy before any screen is mounted on a wall.

**The Benefits**
There are three core benefits to digital signage in a health care facility. The first is access to information. Patients, staff, and administration can share and access information that is timely, relevant, and valuable to the viewer.

The second benefit is relevance. Information can be delivered quickly, efficiently, and accurately. When the well being of a patient rests in the documentation, the right information delivered at the right time can have a big difference.

Finally, digital signage can generate revenue and reduce costs. From the expense of supplies such as copies, mailings, and paperwork, to human resources such as travel, digital signage can turn a globe into a village by centrally hosting all content for any on-demand situation, and can connect two or more parties together instantly. And when appropriated with advertising, many costs may be offset, even to the point where the hospital may see a profit.

But how do you get there?

**Strategy First**
When considering a strategy, there is a logical and deliberate process. The very first thing to do is understand the objectives. Given the magnitude of influences on a network, the complexity can compound as desired outcomes are discovered and discussed.
Objectives will drive the strategy. In turn, the strategy will be a roadmap to deployment and execution. It includes understanding the software and hardware needs for the entire environment.
It’s Not About Technology

It seems antithetical to explain it this way, since technology is at the very core of digital media, but technology is only a vehicle. What is most important is the message. Well-executed digital networks are rarely ever noticed for their hardware and software. The ability to send the right message to the right screen at the right time will trump the viewer’s perception of the technology, instead putting the focus on the content – the reason the network is in place.

Software, hardware, indeed all technology that is required to deploy a network is a function of the form you wish to install into the system. Consider that some hospitals may want tablets that enable their staff to manage in a paperless system, while some rooms may offer wireless keyboards at the bedside of the patient to use the screen not just for entertainment but for web browsing as well.

It’s important to begin with the end in mind – the patient. Since the goal is the well being of the patient, that will affect how you start your project, build your strategy, and execute. Yet in the end, the rewards will be substantial because of the effort put into the planning.
At Saddle Ranch Digital, we specialize in helping clients build stable and effective networks by employing a sound strategy.

The goal with any digital media deployment is to ensure the perfect combination of right content, right place, right time.

Saddle Ranch Digital is a creative media powerhouse in providing high-impact digital content and performance-managed solutions. We help organizations improve their user experience and deliver on a variety of business objectives through enhanced digital video communications. We are a recognized and award-winning leader in content strategy, design and deployment with more than two decades of experience transforming ideas into successful dynamic digital solutions. We have a 100% success rate. Our philosophy from day one has been to focus on content first and not get distracted by the excitement of technology. It’s a simple focus that works.

We invite you to learn more about Saddle Ranch Digital at saddleranchdigital.com

About the Author

Paul Flanigan is Vice President of Content Strategy with Saddle Ranch Digital. In his role, Paul oversees content and business strategies for Saddle Ranch Digital clients.

Paul is a deeply seasoned veteran of digital signage, multi-channel digital media, and viewer engagement. He is a frequent speaker and writer for several publications covering topics such as digital signage, digital and social media, and shopper marketing. He has consulted several Fortune 100 clients on consumer engagement best practices and strategies.

Prior to Saddle Ranch, Paul was Vice President of Marketing and Business Development for Rise Vision, a web-based software platform for digital signage. From 2005 to 2009, Paul managed Best Buy’s five-billion-dollar in-store digital media network. Before Best Buy, Paul spent seven years in professional sports developing customer experiences for Major League Baseball, the National Football League, minor league sports, and collegiate sports programs.

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