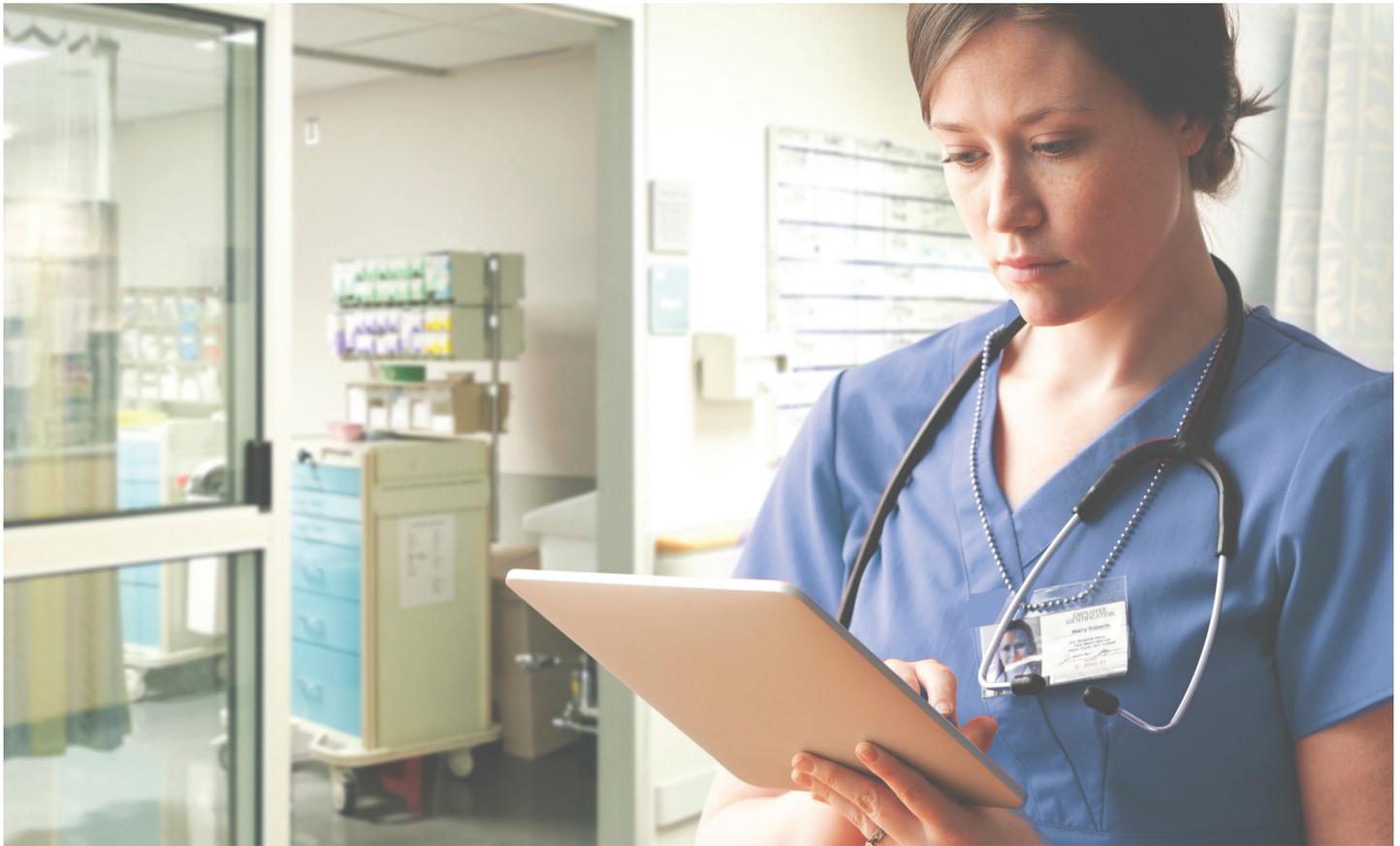


# Raising the Bar on PATIENT SAFETY

Today's technologies are improving care coordination while reducing incidents



Not long ago, the typical nursing station consisted of a centrally located hub serving long hallways of patients who communicated with nurses through bedside remotes. Giant dry-erase boards were manually updated around the clock, and special instructions, such as no food and water for pre-op patients, were posted on room doors using colored Post-It notes or magnets on mini white boards.

Those time-consuming, inefficient communication tools have given way to a more decentralized, modern approach to patient care made possible by recent technological advances. Nurses now work out of mobile workstations inside alcoves close to patient rooms. They respond more quickly to room-sensor alerts sent to their mobile devices. They also convey important patient information in any language using in-room electronic message boards. "In the past, we relied on nurses' and clinicians' eyes and ears to manage everything safety-related, and they can't be everywhere," said HIMSS Informatics Senior Advisor and RN Joyce Sensmeier. "Not having to just rely on a person

and instead being able to leverage the technology around them really brings us into a new phase of patient safety."



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Joyce Sensmeier | Senior Advisor and RN | HIMSS Informatics

The potential to improve care collaboration and coordination using today's digital technologies allows more time for patient interaction and less time manually inputting data. Electronic signage throughout a hospital not only helps visitors find their way, but it can serve as an emergency broadcast system to quickly evacuate when needed.

Additionally, room monitors and bed sensors reduce the risks of falls that raise hospital costs and impact patient satisfaction.

Lee Kim, Director of Security and Privacy for HIMSS, is intrigued by today's digital technologies' possibilities to improve the quality of care by leveraging electronic medical and health records and reducing mishaps from miswritten or misread charts or orders.

"When you think about it, a person can only focus on one thing at a time well with something as complex as patient care," Kim said. "Would you rather have care providers busy with paperwork behind the scenes rather than interacting more with the patient? Of course not. So, the more that can be done digitally, the more time a doctor has to think about the situation, with fewer manual disruptions."

### Fall prevention in U.S. hospitals

A major concern at any acute care or long term care facility is fall prevention. Though typically associated with the frail and elderly, any patient is susceptible to falls due to medical conditions, medications, and other factors that leave them weakened or confused.

Accidental falls are among the most frequent incidents reported in hospitals. A study published by the National Institutes of Health several years ago showed U.S. hospitals experience 3.3 to 11.5 falls per 1,000 patient days, which translates to more than a million patients. Those incidents resulted in an average 6.3 additional hospitalization days at an average cost of \$24,962 according to data from the Centers for Disease Control.

"It's amazing the impact a fall in a hospital has, on all involved," said Stan Swiderski, National Account Manager for Healthcare at NEC Display Solutions of America. He believes that hospitals are doing everything they can to reduce fall risks, but the number of incidents could possibly rise in coming years due to the aging population.

"Hospitals are doing a lot with physical design where they can, such as improved flooring and better positioned hand rails," he said. The other thing having a significant impact is installing bed sensors so that when a patient gets up, an alarm is sent wirelessly to a display or mobile device (or both). "This way, nurses can immediately ask the patient to stay in bed until someone arrives to assist them," he explained.

### Fewer mishaps, more patient time

As hospitals modernize and rely more on electronic displays to assist patients and families, it's important that information is displayed to the right patient at the right time and location. Humans still need to double-check data displayed for correctness and regulatory compliance. Information technology and operational technology teams also need to be sure no one tampers with the systems running on the backend of these displays.

"The main issue, as I see it, is to ensure in the course of care that the information being displayed is correct and accurate and shown in an appropriate context," Kim said. "You also want to make sure that with any of these devices, there aren't any backdoors to get into the system and get to the data."



*"Nurses are no longer spending time filling out paper charts and old-fashioned white boards. They can now spend more time interacting with the patient. And they can also display the information in a patient's native language."*

Stan Swiderski | National Account Manager for Healthcare | NEC Display Solutions of America

When software and hardware work as intended, the improvements to patient safety are almost immediate. There's a significant time savings when select data automatically is pulled from an electronic health record (EHR) onto a screen, monitor, or digital board to be read and updated as needed. "Nurses are no longer spending time filling out paper charts and old-fashioned white boards," Swiderski said. "They can now spend more time interacting with the patient. And they can also display the information in a patient's native language."

Elsewhere in a hospital, live streamed videos and collaboration boards allow for multi-site conferencing when specialists are off-site. Wall-mounted monitors in patient rooms can display check-out instructions, freeing up staff to do other things.

The move to digital displays also follows a trend to create clutter-free patient and waiting rooms. A more high-tech environment helps people and their families feel safer and calmer during what can be a chaotic or traumatic time.

### Incident response and emergency broadcasts

Today's digital displays also provide another level of security and safety in the event of an emergency. During a mass disaster, displays can help to triage and streamline care under intense circumstances. "We never want to think about this, but especially when there's a mass casualty situation, I can certainly see how these smart displays can significantly save time to treat patients most in need first," Kim said. "People know where to go and let others wait, even though it's inconvenient."

For instance, if there's a critical need for blood because a patient is bleeding out, other departments can be quickly notified using digital communications and displays faster than making a series of phone calls, she said. "That's important when seconds count."

Some other ways that various digital displays can improve overall security include:

- Video walls that assist in evacuating vulnerable populations first in an emergency situation.
- Digital signs that quickly convert to a hospital-wide emergency broadcast system.
- Displays that provide photos or descriptions of dangerous people at large, such as someone who just robbed a pharmacy and is attempting to escape. Facial detection and recognition software can help here too.
- Wayfinding solutions that provide directions to the nearest exits.
- Safety awareness training videos and public service announcements prominently displayed in lunchrooms and other staff areas.

### Greater awareness and higher patient satisfaction rates

Patients notice when there's a delay in care or a pause in communications, both of which impact HCAHPS scores tied directly to government reimbursement rates.

"There's so much focus now on consumer engagement and getting patients involved in their health and their care," Sensmeier said. "And I think enabling the patient to feel like a part of this improves their experience, the satisfaction, and their outcomes. Clinicians also gain more satisfaction in their jobs from having more direct contact with patients."



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Sensmeier recommends hospitals initially invest in technology that can be applied where the patient is located. "The access to data and information by the clinician at the point of care is the real value because there can be immediate response and action," she said.

For instance, if a nurse is preparing to give a patient a medication, and the patient claims it was already given, the nurse can instantly access the electronic chart at the point of care to confirm that medication was dispensed. A nurse can also get a full picture of the patient from those health records, including any complicating factors – all without leaving the bedside.

One health organization that has fully embraced intelligent digital whiteboard display solutions is St. Luke's Hospital's Miners Campus in Pennsylvania. The success of technology upgrades in its Universal Care Suite, including improved HCAHPS survey scores, led to similar rollouts in the hospital's intensive care unit and emergency department.

In the ICU, digital patient room whiteboard displays communicate care information, including pain and medication management plans, as well as photos and names of the attending care team. The Emergency Department Electronic exam room now includes a display conveying vital patient data, real-time alerts, and care team photos and names.

"It's exciting to see we're almost there," Sensmeier said of all the digital transformations underway. "It's no longer just a top-down hierarchy from staff to patient. It's now a shared decision-making process, and I think it's exciting that technology can support that."

Is it possible for healthcare organizations as busy as hospitals are today to ever reach zero incidents in terms of patient safety?

"Probably not," Swiderski responded. "I don't think it's realistic. Accidents happen and we're all human. But we try to mitigate that as much as we can through any technology we can."

#### *About NEC Display Solutions of America, Inc.*

*NEC Display Solutions of America, Inc., a leading designer and provider of innovative displays, offers the widest range of products on the market, such as commercial- and professional-grade large-screen LCD displays, desktop LCD monitors, direct view LED displays, a diverse line of multimedia and digital cinema projectors, and integrated display solutions. Benefiting from the technologies of NEC Corporation and its own Research and Development, NEC produces leading-edge visual technology and customer-focused solutions for a wide variety of markets, including education, retail, transportation, broadcast, enterprise, healthcare, houses of worship, and many more. NEC is orchestrating a brighter world with the quality and reliability of its products and outstanding customer service. For additional information about NEC Display Solutions of America products, call (866) NEC-MORE, or visit the website at [www.necdisplay.com](http://www.necdisplay.com). Follow us on our social media channels: Facebook, YouTube, Google+, Twitter and LinkedIn.*

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