ED Management®
Best Practices – Patient Flow – Federal Regulations – Accreditation

June 2012: Vol. 24, No. 6
Pages 61-72

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System-wide flow initiative slashes patient wait times in the ED, boosts volume by 25%

Patient-centric care at the heart of new approach

Process improvements typically take center stage whenever hospital administrators decide that patient throughput and patient satisfaction are not where they need to be. But moving the needle in a positive direction will be slow-going, if not impossible, if there are larger problems in the work environment. That, at least, is what **Assaad Sayah**, MD, chief of Emergency Medicine at Cambridge Health Alliance (CHA) in Cambridge, MA, discovered

EXECUTIVE SUMMARY

Emergency department administrators at Cambridge Health Alliance, a three-hospital health care organization in Cambridge, MA, implemented a system-wide flow initiative that has reduced the average length-of-stay for rapid assessment patients from three hours to just over an hour. Under the approach, patients are immediately placed in a room, and providers and registration staff come to the patients rather than the traditional approach of having patients constantly move from place to place with wait times in between each interval of care. The approach relies on "patient partners," non-clinical personnel who are trained in customer service, to greet and quick-register patients who present to the ED for care.

- Administrators say 97% of patients who present to the ED are in a room within five minutes, and over 90% of them are seen by a provider within 14 minutes.
- The leave-without-being-seen (LWBS) rate has been slashed from 4.5% to 0.6%.
- System-wide ED volume, which was dropping before the new approach was implemented, has gone from 77,000 patients per year to nearly 100,000 patients per year.

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when he was brought in to the organization in 2006 to conduct a major overhaul.

Not coincidentally, 2006 was the year health reform was implemented in Massachusetts, and administrators were worried about the law's impact on safety-net facilities. "They felt there needed to be an improvement in the patient experience across the board because if all of a sudden a lot of patients had an insurance card, they would have the choice to go anywhere they would like, and they may not come here," recalls Sayah.

At the time, volume was dropping at CHA's three facilities, patient satisfaction was among the worst in the state at CHA's Cambridge facility, and relationships with the prehospital community clearly needed work, says Sayah. However, multiple efforts to improve the patient experience had resulted in little to no gain. "The administration realized that there needed to be something more drastic happening, so I was recruited to lead those changes in the ED," he says.

Make sure staffing, compensation are reasonable

Even though CHA's facility in Cambridge is a safety-net hospital, it is a Harvard teaching hospital, so physician recruiting shouldn't have been a problem, says Sayah. However, in 2006, Sayah found that there were chronic physician vacancies. "I just couldn't understand why a hospital in this location with this reputation and affiliation would have any kind of difficulty," he says. "But there were good reasons why that was the case."

Sayah discovered that the physicians were being compensated at less than the 20th percentile for the market, and the emergency physicians were expected to do much more than emergency medicine. "People who are trained in a discipline want to practice what they are trained to do, not more and not less. But for various reasons historically, at two or three [CHA] campuses, the ED physicians were writing admitting orders for admitted patients, which is an inpatient service, and responding to inpatient services to take care of patients," explains Sayah. "You are not going to be able to recruit and retain quality physicians with that kind of compensation package and scope of practice."

Consequently, even before he signed a contract to come to CHA, Sayah received promises in writing from the organization that physician compensation would improve and that he would have the opportunity to improve the work environment and the scope of practice for physicians.

ED Management® (ISSN 1044-9167) is published monthly by AHC Media, a division of Thompson Media Group LLC, 3525 Piedmont Road, N.E., Six Piedmont Center, Suite 400, Atlanta, GA 30305. Telephone: (404) 262-7436. Periodicals Postage Paid at Atlanta, GA 30304 and at additional mailing offices.

POSTMASTER: Send address changes to **ED Management**®, P.O. Box 105109, Atlanta, GA 30348.

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Editor: **Dorothy Brooks** (dobr@bellsouth.net).
Managing Editor: **Leslie Hamlin**
(404) 262-5416 (leslie.hamlin@ahcmedia.com).
Executive Editor: **Shelly Morrow Mark**
(352) 351-2587 (shelly.mark@ahcmedia.com).
Senior Vice President/Group Publisher: **Donald R. Johnston**
(404) 262-5439 (don.johnston@ahcmedia.com)

Editorial Questions

For questions or comments, call **Leslie Hamlin**, (404) 262-5416.

There were also problems on the nursing side. While compensation was reasonable for the market, the EDs were chronically understaffed, says Sayah. "We found that, based on national benchmarks, our EDs were staffed at about the 20th percentile, so we were understaffed, based on our volume," he explains.

To correct the problem, Sayah worked with staff to prepare a proposal that would bring nurse staffing up to the 40th percentile. "It was halfway through the budget year, but I wasn't going to wait six months to start making these changes because you need to have the right ingredients to build on to improve your flow," he says. "You need to have the right physicians and the right staffing."

Put patients at the center of your process

It took two to three months to implement the staffing and compensation changes, but once they were in place, Sayah turned his attention toward co-chairing, with the chief nursing officer at that time, a system-wide flow initiative that included all disciplines and all three hospital campuses.

There were multiple problems with the existing system, but Sayah says chief among them was the fact that patients had to move constantly around the providers, going from one place to another with multiple waits in between the stops. It was like going to an amusement park where you have to continually stop and wait to get on the next ride, recalls Sayah. So he endeavored to replace this approach with a system that put patients at the center, with the providers moving around the patients. "We really spent a lot of time rethinking the process without spending a lot of money or increasing our footprint," explains Sayah. "The work was done using the same resources we negotiated [during the earlier steps] to make sure we were at least at the 40th percentile in staffing."

The only additional expense involved in the initiative was the creation of a new position within the ED called a patient partner. "This is a non-clinician who is the first person a patient encounters when he walks into the ED," says Sayah. "The patient partner's job is to smile, be helpful, and to answer questions. The patient partners are multilingual, and their training is in customer service."

Under the new process, when a patient first enters the ED, he or she will be greeted by a patient partner, who will ask for three pieces of information: a name, either a social security number or a date of birth, and the chief complaint; the patient partner will then quickly register the patient and bring him or her immediately back to a room, explains Sayah. "If a rapid assessment room is available, the patient will go there. If a rapid assessment room is not available, but there is a room available in the main ED, the patient will go there," he says.

While the patient partners do not have medical training, they are empowered to immediately bring a patient into the main ED if that patient does not look well or is experiencing problems such as chest pain or difficulty breathing. "They put the patient in a wheelchair without asking any questions, and he or she is brought into the main ED, bypassing rapid assessment," explains Sayah.

"The way patient partners know where the rooms are is they have computer access to our tracking board. They know the rooms that are available in the whole ED, so that takes care of that whole first step," adds Sayah. At two of the three CHA campuses, patient partners are on staff 12 hours per day, and there is 16-hour per-day coverage at CHA's busiest campus in Cambridge.

To eliminate bottlenecks, streamline care process

Where triage used to take place in one room with one nurse, creating a bottleneck with a queue of patients lined up, there are now three nurses and somewhere between 5 and 14 rooms available, depending on the campus. "There is no bottleneck anymore," adds Sayah. "If at any time the nurse gets to a point where she feels a patient is too acute for rapid assessment, the patient will be moved right away to the acute side [of the ED]," notes Sayah.

However, for the less acute patients, the Emergency Severity Index (ESI) 4s and 5s, the nurse will continue with triage and she will also handle the nursing assessment. This is in contrast to the way things used to be done. "Historically, the nurse would do triage, then the patient would go back out into the waiting room. Then at some point, the patient would come back into a room and another nurse

would ask the same questions all over again," explains Sayah. "Now it is the same nurse doing triage, the nursing assessment, and care in rapid assessment."

Further, if the physician assistant on staff in rapid assessment is available, he or she will join the nurse while she is collecting clinical information so that the patient only has to provide information one time to everyone. **Nancy Sears-Russell**, BN, BSN, MS, associate chief nursing officer, Emergency Services, at CHA, acknowledges that many nurses have difficulty making the adjustment to this type of process. "A lot of them have a hard time with this because they don't want the provider in the room until they are done with the patient, but that creates waiting time for the patient," she says. "They have to make adjustments, and to be sensitive to each other's work."

Also, at some point during this phase of care, a registration person will come into the patient's room to complete the registration process. Then providers will continue with any treatment or care of the patient that is required, and the patient will be discharged. The new approach has delivered significant dividends, trimming the average LOS from three hours to just over an hour for rapid assessment patients, says Sayah. "Now, 97% of our patients are in a room within five minutes, and over 90% of them are seen by a provider within 14 minutes of arrival," he says.

Match resources to patient needs

The transformation in emergency services at CHA has been so successful that visitors from other health care organizations stop by at least twice a week to learn how they might implement similar changes. Sayah is adamant that change on this scale is not possible without strong institutional support. "I don't care how good you are in the ED, you are not going to be able to get to this level of efficiency without everyone in the institution buying in and giving you a hand," he says.

Sayah says he was fortunate that CHA administrators were already on board and looking for a change agent when he joined the organization. "The system was ready for change, and the change came like a tsunami because we changed everything in all three EDs simultaneously in a span of 2.5 years," he says. "Prior to [my arrival] the system had probably had no change for 25 to 30 years."

With the improved efficiency, volume at the three EDs has increased from 77,000 patients per year in 2005 to close to 100,000 patients per year today. And the leave-without-being-seen (LWBS) rate has been slashed from 4.5% to 0.6%.

At its heart, Sears-Russell says the new process is about matching resources with patient needs. "Patients who are at ESI triage level 4 or 5 should have a very short LOS because they don't need much. They may have a sore throat, an ear ache, a small cut on their finger, or an X-ray that is normal," she says. However, Sears-Russell stresses that many EDs still make these patients wait behind the patients who need multi-hour-long workups. "With our approach, all patients get into a room right away, the nurses and the providers see them at the same time right away, and then they are out the door."

Sears-Russell says she sees too many ED administrators pointing their fingers at other departments or tinkering around the edges rather than thinking through what changes are really needed to get a different result. You have to look at patient flow from the perspective of the patient, and eliminate long waits as an option, she says. "Some people try to come up with reasons as to why a patient should wait when there is a room available," she says.

What's required is a wholesale change in culture, says Sayah. "The new culture is that the patient is in the room, and we are going to move around that patient," he says. "The nurse will come in, the doctor will come in, and registration will come in, whereas before the patient was moving around us." ■

SOURCES

• **Assaad Sayah,** MD, Chief of Emergency Medicine, Cambridge Health Alliance, Cambridge, MA. E-mail: asayah@cha.harvard.edu.

• **Nancy Sears-Russell**, BN, NSN, MS, Associate Chief Nursing Officer, Emergency Services, Cambridge Health Alliance, Cambridge, MA. Phone: 617-665-1000.

Leverage front-line expertise to maximize trauma prevention efforts

Focus outreach on vulnerable populations, referring facilities, and EMS providers

There is nothing like working on the front lines in a busy emergency department to learn about the impact of traumatic injuries. Consider, for example, the experiences of **Brent Parry**, NREMTP. Serving as a paramedic for LifeFlight, and as a tech for the ED at Geisinger Wyoming Valley (GWV) Medical Center in Wilkes-Barre, PA, Parry is often among the first to see patients who have been seriously injured. Connecting such individuals to care quickly is a critical part of Parry's job, but now he is also being given an opportunity to intervene at an earlier stage, perhaps preventing some traumatic injuries from occurring in the first place.

In December 2011, the trauma prevention program at GWV tapped Parry to take on the additional assignment as trauma injury prevention outreach coordinator. In this position, Parry regularly reviews data from Geisinger's trauma registry to see where there are opportunities for community intervention. "I will look at the information to determine what types of injuries we are seeing and what the volume is, and that tells me where I need to go in terms of prevention education," explains Parry. ***(See also "Management Tip: Access valuable resources through networking," p. 66.)***

For example, in the past few months, Parry has been speaking at senior centers, health fairs, and other community settings about fall prevention. This activity was triggered by a consistently high rate of fall-related injuries among seniors older than the age of 65 in Geisinger's trauma registry. In fact, the trauma prevention program at GWV has been targeting the community with education on this issue for more than a year, and there is evidence that these efforts are making a dent.

"We monitor [our success] through the data that is extracted to our registry," explains **Terry Heller-Wescott**, RN, the trauma program manager at GWV. "We have seen close to a 10% decrease in fall [related injuries] in the past year. That is a positive outcome and that is what we want to see."

In addition to fall prevention, Parry is also actively engaged in initiatives aimed at curbing motor vehicle crashes, which have been occurring at a higher rate at both ends of the age spectrum: among the very young and the very mature driver populations. The two age groups require different types of prevention outreach — so Parry is participating in a mature driver's task force while also visiting schools. (***See also "Study: Preventive steps needed to curb stair-related injuries in young children,*" p. 67.**)

EXECUTIVE SUMMARY

The trauma prevention program at Geisinger Wyoming Valley (GWV) Medical Center in Wilkes-Barre, PA, has enlisted the assistance of an experienced paramedic and ED tech to spend part of his time targeting prevention education toward populations that have been experiencing high rates of traumatic injuries. While community outreach has long been a priority for the trauma prevention program, the new position is enabling GWV to boost the magnitude of its prevention efforts, and to reach out to referring facilities as well. Program administrators say a similar outreach effort aimed at EMS providers has strengthened relationships and helped to improve trauma care at the facility.

- The new trauma injury prevention outreach coordinator has focused his first efforts on fall prevention and curbing motor vehicle accidents among very young and very mature driving populations.
- Data from GWV's trauma registry suggest that its fall prevention efforts are having an effect. The incidence of falls among patients over the age 65 is down by about 10% at the facility since it began targeting education at the community's senior population.
- Administrators say a monthly lecture series aimed at the prehospital community has gone a long way toward nurturing ties with EMS providers. Called "EMS Night Out," the series covers a range of topics, but the most popular programs involve case reviews.

Reach out to referring facilities

The trauma prevention program has always been involved with community outreach, stresses Heller-Wescott, noting that as a trauma facility GWV is required to engage in prevention and outreach. However, she says that Parry is enabling the program to increase the magnitude of these efforts. "He also goes to other facilities that refer patients to GWV as a trauma center," she explains. "We are

developing what we call the *Rural Trauma Team Development Course* for smaller, outlying facilities that are not able to care for injured patients."

The course, which covers the rapid assessment and transport of such patients, is primarily focused on making sure that ED personnel are equipped with the skills they need to connect these patients with appropriate care quickly. "Time is always of the essence in caring for all of these patients that get transferred to us," adds Heller-Wescott.

While Parry is new to the trauma prevention program, the idea of leveraging front-line expertise has long been a key preventive strategy. "We are involved on a daily and hourly basis sometimes," explains **George Rittle**, RN, CEN, the operations manager of the ED at GWV. And the ideas for improvement can flow in both directions. "Brent works in trauma as the outreach coordinator, but he also works in the ED as a tech, so he gets into the thick of things in the ED, and he is able to make recommendations and observations to us on how we can improve trauma care," adds Rittle.

For example, Rittle recalls that the trauma service was the first to notify him that there was a problem with the pediatric mobilization device that the ED was using. "Without someone informing me of that, the problem would not have been identified as something we needed to fix. And we fixed it immediately," he says.

Another issue that the trauma program identified was that the trauma flow sheets were not always being signed appropriately by the people responding, and sometimes there were delays in getting people to a resuscitation," says Rittle. "By just having anecdotes of these things, we were able to trouble-shoot and resolve these issues," he says.

Nurture relationship with EMS providers

Rittle emphasizes that the trauma program has been particularly successful at nurturing strong relationships with the EMS providers that serve the facility. "We have an EMS outreach coordinator whose job is primarily to communicate with EMS," he says. And one strategy that has strengthened these ties is the development of a monthly lecture series called "EMS Night Out," that focuses on education for the prehospital community and nursing staff.

"We have been having large turnouts at these lectures for the last six to eight months. We have anywhere between 50 to 75 attendees," says Heller-Wescott. The topics can vary, although the most popular sessions involve case reviews. "We will start with the prehospital phase and review the case from the time EMS had contact with the patient to time the patient is discharged."

The EMS providers are often eager to know what has happened with patients they have brought to the hospital for care, and they can also learn a lot by reviewing the cases, explains Rittle. "No department is a silo when it comes to a trauma patient," he says. "We could not have the success we have without our EMS partners. ■

SOURCES

• **Terry Heller-Wescott**, RN, Trauma Program Manager, Geisinger Wyoming Valley Medical Center, Wilkes-Barre, PA. Phone: 570-808-7300.
• **Brent Parry**, NREMTP, Trauma Injury Prevention Outreach Coordinator, Geisinger Wyoming Valley Medical Center, Wilkes-Barre, PA. Phone: 570-808-7300.
• **George Rittle,** RN, CEN, Operations Manager, Emergency Department, Geisinger Wyoming Valley Medical Center, Wilkes-Barre, PA. Phone: 570-808-7300.

Management Tip

Access valuable resources through networking

Educational tools are available in abundance to trauma prevention programs that are willing to reach out and network with state and national organizations, explains **Brent Parry,** NREMTP, trauma injury prevention

outreach coordinator, Geisinger Wyoming Valley Medical Center in Wilkes-Barre, PA. "There are a lot of good resources out there. It is just a matter of tapping into them," he says. Organizations that should be on your list of contacts include the American Trauma Society (www.amtrauma.org), Safe Kids (www.safekids.org), and your own state EMS authority, but there are many others, says Parry. ■

Study: Preventive steps to curb stair-related injuries in young children

Trauma prevention program administrators might want to brainstorm about how to best prevent stair-related injuries in young children in their communities. This is in light of new findings, suggesting that a young child is rushed to an emergency department in the United States as frequently as every six minutes with just this type of injury.

In a study from the April 2012 issue of *Pediatrics*, investigators from the Center for Injury Research and Policy of the Research Institute at Nationwide Children's Hospital in Columbus, OH, report that from 1999 to 2008, more than 93,000 children younger than 5 years of age were treated in emergency departments in the United States.[1]

While the data show that the rate of stair-related injuries is trending downward, this type injury is still common among young children, according to the study's senior author, **Gary Smith**, MD, DrPH, director of the Center for Injury Research and Policy at Nationwide Children's Hospital, and a professor of pediatrics at Ohio State University College of Medicine in Columbus, OH. Smith advises that such injuries can be prevented through a combination of parent education, broader use of stair gates, and changes in building codes designed to make stairs safer.

In the study, the researchers report that a majority of the injuries were the result of children falling down stairs without mention of another object or activity involved. However, one quarter of the injuries that occurred in children younger than the age of 1 year happened while the children were being carried down the stairs, and these children were three times more likely to be hospitalized than children with other types of stair-related injuries.

Among all the stair-related injuries, soft-tissue injuries were the most common, followed by lacerations and puncture wounds. The injuries most commonly occurred in the head and neck regions, followed by injuries to the upper extremities. ■

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Real-time tracking data drive process improvements, even while ED volumes continue to climb

Technology uses sensors, infrared signals to capture patient-staff interactions

Christiana Hospital in Newark, DE, averages between 315 and 320 patients per

EXECUTIVE SUMMARY

Christiana Hospital in Newark, DE, has been able to dramatically reduce length-of-stay in the ED by making use of data derived from a real-time location system (RTLS) that tracks the movements of patients, providers, and staff. Administrators say that while some efficiencies are gained from the system alone, most of the positive impact is derived from using the RTLS data to focus on specific processes and make refinements.

- Within one year of implementing the RTLS technology, LOS in the ED was reduced by 40 minutes for admitted patients and 18 to 20 minutes for the treated-and-released population.
- A work group focused on process improvements in the ED's fast track section reduced the average LOS from 2.5 hours to 60 minutes or less.
- Similarly, a work group focused on the ESI 3 population reduced the average treatment time for this population from 5 or 6 hours to 3.4 hours.
- Administrators say key steps toward a successful RTLS implementation are careful planning for how you want to use the technology, and alleviating staff concerns about why their movements are being tracked.

day. It's a huge ED, taking up a lot of space, explains **Amy Whalen**, RN, BSN, SANE-A, the assistant nurse manager in the ED. And Whalen recalls that it used to be quite a chore just trying to locate patients, providers, and staff. "We were spending a lot of time just at triage trying to find a patient to go back to a room," she says, noting that it could be equally time-consuming to try to find a provider. "You would be calling down corridors, and looking under the curtains for feet. It was just very difficult."

Today, however, locating a patient or provider is just a few clicks away on a computer screen, thanks to the real-time location system (RTLS) that the health system installed in 2004. Using sensors that are housed in the ceilings, the technology can immediately identify the location of any patient, provider, or tech who is wearing a special badge that emits infrared signals that the sensors pick up.

It has taken time to take full advantage of the system's capabilities, but administrators say that within a year of implementing the RTLS-driven approach, the average length-of-stay (LOS) in the ED was slashed by 40 minutes for admitted patients, and by 18 to 20 minutes for the treated-and-released population. However, these improvements just scratch the surface of what you can do when you have real-time data to work with, explains **Linda Laskowski-Jones**, MS, RN, ACNS-BC, CEN, vice president, Emergency and Trauma Services, Christiana Care Health System. "Where you really get the benefit is when you sit down with a group of people and you focus on a particular process that you really want to optimize," she says. "It is what you can do with the information and how you can look at your world and really know your process."

Track intervals of care

Laskowski-Jones explains that continuous improvements in LOS have taken place while volume has continued to climb. Back when the RTLS system was first implemented in 2004, the ED was seeing 90,000 patients per year; today the ED sees 117,000 patients per year, she says. The efficiencies are possible, at least in part, because the RTLS system is able to keep track of all the patients as well as all of the care processes they interact with as they move through the system.

The tracking begins as soon as a patient enters the triage phase of care. "We quick-register the patient, and during that process we give the patient a tracking badge," says Laskowski-Jones. "That tracking badge is entered into the quick registration system so that it identifies the patient and their real-time location from that point of initial registration."

As the patient moves through the department, sensors interact with the badge so that any clinician can see where the patient is at any point in time by dialing up the RTLS software on a computer screen. "We have more than 400 sensors throughout the department, not just in the ED, but also in radiology and in our ultrasound area," explains Laskowski-Jones. "We have, basically, a real-time itinerary of all the patient's intervals of care. All of our physicians, nurses, and techs also wear tracker badges, so as the patient interacts with these individuals, those interactions are captured as well."

Whalen, who has been employed at Christiana Hospital since before the RTLS system was implemented, recalls that while hospital staff were apprehensive about the technology, they quickly embraced its capabilities. "Within that first day everybody became hooked. It just completely changed the way we took care of patients," she says. "It changed how we could see what was happening in the department, how we could find patients and each other. And it changed how we functioned."

The health system has gradually made the technological infrastructure of this system even more robust by building interfaces with the laboratory, radiology, and, most recently, the health system's computerized physician order-entry system (CPOE). This makes it possible for a clinician to view the patient in many different ways from the same tracking board, explains Laskowski-Jones. "You can see what labs are new orders, what labs or diagnostic studies are pending, and which ones are available — all through a color change," she says.

The RTLS system is also interfaced with the hospital's bed-management process so that when a patient in the ED needs to be admitted, ED personnel can actually use the system to provide information that the bed board needs in order to find the right bed for the patient.

"The information seamlessly flows onto the bed management dashboard, and when [bed management staff] identify a bed and assign the room, and environment services is finished cleaning that room, all of those milestones are indicated back in our tracking system," explains Laskowski-Jones. "We can also then request transport via our tracking system."

Whalen says the technology makes it easy to quickly ascertain where there are holdups. "It just enhances our team approach because you can quickly figure out what someone is waiting for, whether it is a test, transport to a floor, a bed assignment, or whatever," she says. "You can get a global look at what is going on."

Use data for process improvement

There is no question that some efficiencies are realized by not having to manually make a notation every time a patient encounters a new care process. The RTLS system makes these notations automatically and the data are real, stresses Laskowski-Jones. However, she stresses the biggest opportunity for improvement comes from acting on the information. "We get a whole summary of patient movement, interactions, and basically the process of care through the tracking system," she says. "But the impact comes from actually taking those time intervals, knowing your results, and engaging in process improvement."

For example, in 2008, a group of ED leaders worked with members of the health system's Operational Excellence Department to overhaul the ED's fast track area. "At the time, we had about a two-and-a-half hour LOS for fast track patients, and we created a stretch goal of getting that down to 60 minutes or less," explains Laskowski-Jones.

The work group poured over the tracker data, including all the intervals that occur for patients who flow through that part of the ED, and they made decisions about what processes could be combined or eliminated. "Originally we had six triage rooms, but the way we had our teams configured, the six rooms didn't help us, so we actually reduced that down to two triage rooms, with a third room to be used for procedures," says Laskowski-Jones.

Using the tracker data, the work group created a mechanism so that staff would see a color change on the tracking board whenever a fast track patient was in treatment for more than one hour. "We were actually able to lower the LOS for fast track patients to pretty reliably less than 60 minutes," says Laskowski-Jones. "And we monitor those results every day."

More recently, ED administrators and staff have been focusing on the Emergency Severity Index (ESI) 3 patients. "These are the patients who typically have a very long LOS in any ED in the country," explains Laskowski-Jones. "They often have abdominal pain or some undifferentiated medical issues."

Administrators created a group called SPEED, for synchronized provider evaluation and efficient disposition, and used tracker data to identify any barriers to flow or opportunities to synchronize efforts in the care of ESI 3 patients. The SPEED group has already made substantial gains, trimming the average LOS of these patients from 5 or 6 hours, typically, down to about 3.4, but the improvement efforts are ongoing. "Our goal is to create a community of scientists so that we can then take that information and experiment, and keep trying to refine the process," explains Laskowski-Jones.

Take time to plan

While using RTLS technology is now business-as-usual at Christiana Hospital, Laskowski-Jones advises ED administrators who are considering this type of strategy to invest a considerable amount of time in planning for how you will use the technology, and for bringing staff up to speed on this vision.

"We used a business process approach where we brought all the key stakeholders, including frontline staff and ED leaders, into a room and outlined the current process very, very specifically," explains Laskowski-Jones. "This was so we could really look and see where the opportunities were, and how we could leverage the technology to be the best it can be."

A critical step in the planning process is staff education because there are likely to be some major concerns, at least by some personnel, about why you want to track their movements, says Laskowski-Jones. "You can mitigate these concerns," she says, noting that she held several meetings with staff to answer their questions. "I wanted them to understand

what was in the technology for them, and there were two things."

First, Laskowski-Jones explained to staff that the technology would enable them to quickly ascertain the activity of the department and what was going on with their patients, and the second benefit was that whenever there was a patient with lice or a communicable disease, the technology would make it much easier to identify which personnel were exposed.

The safety aspects really registered with staff, emphasizes Laskowski-Jones. "They feel good about these protections, especially the staff members who are pregnant," she says. "Probably weekly we are tracking back to find out who took care of a patient who turned out to have pertussis [or some other communicable disease]," she says.

Even with these benefits, it took three or four years before administrators began tracking staff because Laskowski-Jones wanted to make sure they were comfortable with the technology, and why it was being used. "Now we have staff location tracking in place for clerks, nurses, and techs as well as for physicians, and we have never done anything with it that would cause staff to distrust us," she says.

While tracking technology would seem to be best suited to large, high-volume EDs, Laskowski-Jones says it is also proving valuable at the health system's hospital campus in Wilmington, DE, which has a much smaller ED. "It sees about 53,000 patients a year. And despite the fact that it is not a big, busy, Level I trauma center, we still can look at the data and optimize flow," she says. "There is not a minute that goes by in any part of the day that the tracker isn't up and somebody isn't using it to make a decision."

In addition, the health system will be using the tracking technology in a freestanding ED now under construction that is only expected to see annual volumes in the 20,000 to 30,000 range, says Laskowski-Jones. "Clinical documentation systems are excellent for what they do. This is another piece to an ED. This is how the system functions," she says. "It is sort of like putting a probe into your system and then assessing the health of that system. This is what RTLS tracking does that is different than other ways of deriving data that might give you a sense of your operation." ■

SOURCES

• **Linda Laskowski-Jones**, MS, RN, ACNS-BC, CEN, Vice President, Emergency and Trauma Services, Christiana Care Health System, Newark, DE. Phone: 302-733-1000
• **Amy Whalen,** RN, BSN, SANE-A, Assistant Nurse Manager, Emergency Department, Christiana Hospital, Newark, DE. E-mail: awhalen@christianacare.org.

CNE/CME INSTRUCTIONS

HERE ARE THE STEPS YOU NEED TO TAKE TO EARN CREDIT FOR THIS ACTIVITY:

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CNE/CME OBJECTIVES

1. Apply new information about various approaches to ED management.
2. Discuss how developments in the regulatory arena apply to the ED setting.
3. Implement managerial procedures suggested by your peers in the publication. ■

CNE/CME QUESTIONS

1. According to **Assaad Sayah**, MD, what was the chief problem with patient flow at CHA facilities when he co-chaired a system-wide flow initiative aimed at improving throughput?
A. poor communication
B. disgruntled staff
C. nurses were not comfortable working in tandem with physicians
D. patients were having to move around providers with multiple waits in between each phase of care

2. What do "patient partners" do in the EDs operated by Cambridge, MA-based Cambridge Health Alliance?
A. They schedule follow-up appointments.
B. They explain complex medical information to patients and their families.
C. They greet patients, register them, and bring them back to a room.
D. They serve as a liaison between patients and medical professionals.

3. What does the trauma injury prevention outreach coordinator do at Geisinger Wyoming Valley Medical Center in Wilkes-Barre, PA?
A. He reviews data from Geisinger's trauma registry to see where there are opportunities for community intervention.
B. He delivers trauma-prevention education to populations at risk in the community.
C. He delivers education about rapid assessment and

transport to referring facilities.
D. All of the above

4. Researchers from the Center for Injury Research and Policy of the Research Institute at Nationwide Children's Hospital in Columbus, OH, report that a young child is rushed to an ED in the United States as frequently as every six minutes with a stair-related injury. According to this research, what part of the body is most commonly injured from these accidents?
A. the head and neck regions
B. the lower extremities
C. the back
D. the hands

5. At Christiana Hospital in Newark, DE, the locations of patients, providers, and staff are tracked through the use of a real-time location system (RTLS). How are sensors, located in the facility's ceilings, able to track people?
A. through the use of video technology
B. through the use of badges that emit infrared signals
C. through the use of global positioning software
D. all of the above

6. According to **Linda Laskowski-Jones**, MS, RN, ACNS-BC, CEN, why are Emergency Severity Index (ESI) 3 patients a special concern in many EDs?
A. because these patients typically have a very long LOS
B. because these patients frequently present for care
C. because these patients are difficult to treat
D. because the conditions of these patients can deteriorate quickly

ED ACCREDITATION UPDATE

Covering Compliance with The Joint Commission Standards

Culture of no harm fuels improvement, attracts national attention

ED-focused interventions slash LWBS rate, door-to-provider times

Since 2007, Henry Ford Health System (HFHS) in Detroit, MI, has been on a highly publicized quest to eliminate harmful events from the health care experience. The organization is going about this task methodically, first identifying and studying the root causes of harm, and then developing solutions and changing health system practices for the better. The work can be tedious to be sure, but it is also clearly effective.

From 2008 to 2011, administrators report that the health system's "No Harm Campaign" has resulted in a 26% reduction of harmful events and a 12% drop in mortality. While it is true that most hospitals are successfully reducing harmful events, the average annual reduction in harmful events is just 1% or 2%, according to HFHS administrators.

For its efforts, the health system was recently selected by The Joint Commission (TJC) and the National Quality Forum (NQF) to receive the 2011 John M. Eisenberg Patient Safety and Quality Award for innovation and patient safety and quality at the local level. But its campaign is hardly over. The health system is aiming to reduce harmful events by 50% by 2013, an ambitious goal, but one that the organization is on track to achieve, according to **William Conway**, MD, senior vice president and chief quality officer, Henry Ford Health System, and chief medical officer, Henry Ford Hospital in Detroit, MI.

"We are focused on a couple of high-volume categories this year," he explains, noting that quality teams are applying the health system's data-driven improvement efforts at reducing pressure ulcers and urinary tract infections (UTIs), which are both common events in the hospital setting. "As we approach the 50% mark, the rate [of reduction] is going to slow down a little bit because we tend to harvest a lot of low-hanging fruit initially."

EXECUTIVE SUMMARY

Henry Ford Health System's "No Harm Campaign" is attracting national attention for its success in rooting out medical errors and other harmful events across the system. Through the use of a "no harm index," the hospital regularly tracks data about harmful events, and keeps the pressure on improvement teams to make progress. Since 2008, administrators say the approach has reduced harmful events by 26%, and they say the health system is on track to reduce harmful events by 50% by 2013.

- ED-focused interventions have reduced the left-without-being-seen rate from 5% or 6% to just over 2%, and they have slashed door-to-provider times from 50 minutes to 26 minutes.
- To conserve resources, the health system uses existing committees and structures to implement its "no harm" campaign.
- Administrators say leadership support is critical to the campaign's success, and they stress that process improvements cannot be sustained without culture change.

Financial Disclosure:
Managing Editor Leslie Hamlin, Author Dorothy Brooks, Nurse Planner Diana S. Contino, and Executive Editor Shelly Morrow Mark report no consultant, stockholder, speaker's bureau, research, or other financial relationships with companies having ties to this field of study. Executive Editor James J. Augustine discloses that he is a stockholder of EMP Holdings.

Pressure ulcers and UTIs are just two of roughly 30 categories of harm that the health system regularly tracks in what administrators are calling the "harm index," says Conway. "We have teams working on addressing most of those things," he says, explaining that the ever-present data keep the pressure on these teams to find new ways to reduce harm.

An example of this, says Conway, is the way one of these improvement teams addressed blood stream infections related to catheter use in dialysis patients. "We tried very hard to reduce catheter use, which, for a variety of reasons, was very hard to do," he says. "We kept pressing the group to find a way to eliminate blood stream infections, and so they found an approach that involved closing the catheter at the end of dialysis with an antibiotic solution. This has reduced blood stream infections by 70%." (***See also "Building blocks for success in establishing a culture of 'no harm,'" p. 3***)

Lean facilitators drive ED improvements

The ED has been the focus of many of these improvement efforts aimed at reducing harm. For instance, in 2009, the ED at Henry Ford Hospital put its patient flow process under a microscope in an effort to eliminate bottlenecks and reduce the leave-without-being seen (LWBS) rate, which was running at 5% to 6% at that time. "We had a stacked process," explains **Joyce Farrer**, RN, MSN, the administrator of Network Emergency Services at the hospital. Essentially, the practice of fully registering patients toward the front end of their visit was bogging the system down, she says.

Farrer decided that a team of front-line staff should investigate solutions and actually drive the improvement effort, so she interviewed nurses and techs interested in becoming "lean facilitators," and she tapped four of these candidates to actually participate in an ED collaborative sponsored by the Michigan Hospital Association. The team also had the assistance of Kevin Castile, a management engineer at HFHS who has been working with the ED on its improvement efforts.

A key aspect of the lean team's redesign of the patient flow process was the implementation of bedside registration. However, the ED got stiff resistance to the idea from registrars, who were part of a different department. "We were not getting very far with the registration staff, so we decided that we would train all the nurses to do quick registrations as well as triage," says Farrer. This was a battle in itself, she says, because the nurses were not particularly happy about taking on an additional responsibility. "However, they recognized that something needed to be done," she says.

To get 170 personnel up to speed on how to do quick registrations, the lean team first trained super users, and then the super users worked with the lean team to train the rest of the staff, adds Farrer. At the same time, the lean team reengineered the front end of the care process so that many of the tasks that were traditionally completed at triage, such as medicine reconciliation, for example, were moved to later in the care process so that patients could be placed in a room and connected with a provider as quickly as possible, explains Farrer.

When the ED went live with the new approach in February of 2011, the four-member lean team took charge of driving the implementation. "For the first two weeks, they made sure that they were covering almost every shift, so they were able to talk people through [the new process], and there was a lot of resistance," recalls Castile. "However, having them there to trouble-shoot and help people through made a difference."

Persistence is essential

Since the start date, there have been a number of tweaks to the system, not the least of which is a new willingness on the part of registration staff to complete the registration process for patients at the bedside, using new computers on wheels provided by the ED. "Having the nurses agree to do the quick registrations at triage almost became a bargaining chip," says Castile. "There were a lot of meetings between the ED staff and the registration staff around this issue."

A year after implementation, the LWBS rate has been more than halved to just over 2%, and the average door-to-provider time has gone from 50 minutes to 26 minutes. While there is still occasional staff grumbling about the process, the results have gone a long way toward quieting such discontent. "The nurses still may not think that they should have to do [quick registrations], but they know it was the right thing to do," says Farrer.

Physicians are pleased with the new process, too, primarily because they are getting to the patients sooner, explains **Gerard Martin**, MD, chairman of the Department of Emergency Services at HFH. However, he credits the success of the approach to the front-line staff who drove the process. "They met every week, they took feedback from everybody, and they took a lot of heat, but they kept coming back and they didn't give up," says Martin. "I think if you don't have dedicated people who are constantly working at this, you

may be able to make some changes, but they won't be sustainable. That is the key thing — to sustain it." ■

SOURCES

• **Kevin Castile**, Management Engineer, Henry Ford Health System, Detroit, MI. E-mail: kcastil1@hfhs.org.
• **William Conway**, MD, Senior Vice President and Chief Quality Officer, Henry Ford Health System, and Chief Medical Officer, Henry Ford Hospital, Detroit, MI. E-mail: wconway@hfhs.org.
• **Joyce Farrer**, RN, MSN, Administrator, Network Emergency Services, Henry Ford Hospital, Detroit, MI. Phone: 313-916-2600.
• **Gerard Martin**, MD, Chairman, Department of Emergency Services, Henry Ford Hospital, Detroit, MI. E-mail: gmartin1@hfhs.org.

Building blocks for success in establishing a culture of "no harm"

Quality improvements are never easy across a large organization, but Henry Ford Health System's "No Harm Campaign" has been able to reduce harmful events by as much as 7% or 8% annually in each of the past four years, according to **William Conway**, MD, senior vice president and chief quality officer, Henry Ford Health System, and chief medical officer, Henry Ford Hospital in Detroit, MI. As a result, Conway is often asked what the keys are to the health system's success. He breaks his answer down into six categories:

1. Get leadership on board: "This is what drives the [No Harm Campaign]," stresses Conway. "Our CEO is very engaged in the effort, as is our board. That kind of attention is very important."

2. Be transparent: The health system disseminates data about its performance across the organization. "We don't mask what is happening in one unit or department from another. It is just all laid out," says Conway. "That creates a certain amount of peer pressure to improve performance."

3. Work on culture: Process improvements are obviously critical, but if you don't also work on culture change, the positive results will not be sustained, says Conway.

4. Be efficient: "We have relied on existing committees so that we don't have to put new structures in place," says Conway. "The chief medical officers and the chief nursing officers in the system are responsible for broad categories, and they are held accountable to improve those." Also, there are 450 safety champions embedded in departments across the health system, says Conway. Leadership can then feed information and talking points to these champions to disseminate in their own settings.

5. Think big and choose slogans carefully: Why? Because it's important to capture the interest and the passion of health care workers. To that end "no harm" works better than "safety initiative," says Conway. "You have to get the heart of people involved."

6. Borrow and steal: Henry Ford Health System has been involved with five different collaboratives focused on enhancing safety in the hospital setting. "We steal ideas from anybody anywhere," says Conway. ■

The Joint Commission: Four key root causes loom large in sentinel event data

Broad data serve as an alert for hospitals to focus on their own events

While there are multiple contributing factors to most sentinel events, The Joint Commission (TJC) reports that four key areas — leadership, human factors, communication, and assessment — are at the root of these events with much greater frequency than other causes. This is according to data voluntarily supplied to TJC by accredited health care organizations for the years between 2004 and 2011.

"These are the [root causes] that are most pervasive because they are really core to where risk is, and at a very high level," explains **Ana Pujols McKee**, MD, the executive vice president and chief medical officer at TJC. For example, McKee notes that the category of "human factors" can pertain to whether an organization has the right level of staff with the appropriate competencies and training to work in a specific environment.

"When an organization makes changes to where it stores and maintains equipment, if the staff is not properly oriented to the new system … although the

staff might be very capable, they might be totally uninformed about this new system," she says, explaining that this is where problems can begin. In this same example, leadership and communication could also be cited as root causes of the problem, she says.

Assessment can be a huge issue in sentinel events, says McKee, because the evaluation that a clinician makes then leads to a diagnosis, interventions, and the timing and urgency of those interventions. "Let's say that in this process it is overlooked that a patient has an allergy," says McKee, explaining that this error can lead to a serious adverse event. "The way I look at assessment is that it is an opportunity to gather every bit of information and to process that information so that you reduce the risk of injury," she says.

These top four root causes were cited most often as contributing to delays in treatment events that resulted in death or a permanent loss of function. This is an area of particular concern to EDs because time-to-treatment is always a prime focus.

Communication was the most often cited root cause in this category, and that is no surprise, says McKee, noting that part of the problem is the increasing use of personal devices to transmit information. "Whether you are texting or emailing, the assumption is that the information is [delivered] instantaneously and always captured, but the [intended recipient] might be asleep or he may not be carrying the personal device that is being sent the critical information, so technology is complicating this issue," she says.

Similarly, information does not always flow to where it should go in an electronic medical record; it may be buried in a free text section of the EMR, and the clinician may miss it, explains McKee. "This is another human factor area that is implicated," she adds.

The root cause categories are very broad, and should be used mainly as an alert to health care organizations to analyze their own events and practices to see where improvements can be made, says McKee. "Look for the common trends [in your own data] so you can really address them in a focused manner." ■

SOURCE

• **Ana Pujols McKee**, MD, Executive Vice President and Chief Medical Officer, The Joint Commission, Oakbrook Terrace, IL. Phone: 630-792-5000.

New online portal takes aim at health care-associated infections

Health care organizations have a new resource at their disposal to fight against health care-associated infections (HAI). The Joint Commission and the Joint Commission Center for Transforming Healthcare have unveiled the HAI Portal, a site that contains information and tools to help providers curb the incidence of HAIs in their own settings. The site contains both free and for-purchase items, including prevention strategies, performance measures, and infection data related to different settings of care. The HAI Portal can be accessed at: www.jointcommission.org/hai.aspx. ■