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AHC Media

Clinical pharmacists with EM training slash medication errors, help to optimize therapies in the ED

Qualified, EM-trained pharmacists in short supply, but established programs get broad support

Despite continuing pressure to streamline operations, a small but growing number of EDs are adding clinical pharmacists with specialized training in emergency medicine to their ranks. Why? **Daniel Hays**, PharmD, BCPS, FASHP, a clinical pharmacist in the Departments of Pharmacy and Emergency Medicine at the University of Arizona (UAZ) Health Network in Tucson, AZ, suggests it's a matter of having checks and balances in place in an environment where some of the typical safeguards are not generally available.

"Everywhere else in the hospital, if a medication is ordered, it is cleared through pharmacy, then reviewed by nursing, and then given

EXECUTIVE SUMMARY

Pharmacists who specialize in emergency medicine are taking a place at the bedside in a small but growing number of EDs. Studies show the approach can make a big dent in medication errors and can quickly guide physicians toward optimal therapies with respect to trauma patients and other complex cases. Experts say clinical pharmacists provide an extra safeguard that is commonly missed in the fast-paced ED setting.

- Experts estimate that 10% of EDs have established clinical pharmacy programs in the past 10 years.
- Pharmacists serve on trauma teams, review medication orders, assist with medication titration, and act as a communication bridge between the ED and the inpatient pharmacy.
- Recent studies suggest pharmacists capture significantly more medication errors than other personnel, and that they help to speed patients with ST-elevation myocardial infarctions from the ED to the cardiac catheterization laboratory.
- Nurse and physician buy-in are critical to the success of a clinical pharmacist program in the ED.

to the patient. But historically in the ED, it goes right from the prescriber to the nurse to the patient, and in many cases, from the prescriber to patient without a second check," says Hays. "By us being here physically in the ED, we can be there to provide input before the order is even written to insure minimization of drug errors and optimization of drug therapy."

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Hays, who is a pioneer in the use of clinical pharmacists in the ED, having set up a program at the University of Rochester Medical Center in Rochester, NY, before moving on to UAZ, estimates that roughly 10% of EDs now have clinical pharmacist programs. It's not a huge number, but a considerable improvement from 10 years ago when the practice was practically unheard of, he says.

Further, many of the EDs that have implemented clinical pharmacy programs are highly protective of the approach, even when revenue pressures force cuts to be made. For example, despite several rounds of budget cuts at Grady Memorial Hospital in Atlanta, GA, clinical pharmacists continue to provide coverage in the ED seven days a week, explains **John Patka**, PharmD, BCPS, a clinical pharmacy specialist in emergency medicine at Grady.

While physician leadership at the hospital was largely responsible for bringing the pharmacy program to the ED 10 years ago, Patka credits strong support from nurses in the ED for saving the program from the budget-cutting knife. "There was some talk about getting rid of pharmacy services in the ED, and several of the nurses wrote letters of support to the hospital CEO and the high-level executive leadership at Grady," he explains. "Initially, we had to show the nurses what we could do, but ever since we did that, they've been strong supporters."

Deploy pharmacists to meet needs, improve care

Precisely how clinical pharmacists are deployed in the ED can vary depending on a department's needs and culture. However, pharmacists often serve on trauma teams, they get called in to consult on complex cases, and they may review a sizable portion of the medication orders written in the ED. At UAZ, for example, the clinical pharmacist does not do any medicine dispensing, but rather insures than an order is correct as it is being formulated, explains Hays. "We are physically present in the ED and, based on acuity, we will see the patients as they come in," he says. "We are part of the team." ***(Also, see study noting that older patients in the ED are less likely to receive pain medication than younger patients, p. 17.)***

Similarly, at Grady, clinical pharmacists review 50% to 60% of the medication orders that originate in the ED, and they are highly

involved with the care of critical patients. "We go to any trauma patients who come in to the ED," explains Patka. "We don't just do critical care, but because we are a level 1 trauma center, we focus more on critical response-type situations."

Another issue the Grady pharmacists deal with frequently is helping providers select the optimal antibiotic therapy for a particular clinical situation. Physicians generally select agents that will work, but they may not always be the best choice for a specific patient, says Patka. For example, he recalls one recent case in which a patient who was HIV positive came in to the ED with pneumonia and the physician was going to prescribe typical coverage for community-acquired pneumonia. "This person had a lot of risk factors, so we really wanted to broaden the coverage to include more atypical or unusual organisms that the physician wouldn't ordinarily think of using," explains Patka.

The Grady pharmacists also frequently assist physicians and nurses in titrating medications. Typically, this involves guidance on what parameters to shoot for in a particular set of circumstances. For instance, one recent case involved a patient who came into the ED with an aortic dissection — a condition that needs to be treated differently than the norm, explains Patka. "It is one of the exceptions where you really want to drop the patient's blood pressure aggressively and quickly, and the physician didn't realize that," he says. "The physician was only going to drop it by 25%, but you really need to drop it to a much lower level. So in that patient we recommended a combination therapy."

As a public access hospital, Grady has a very restricted formulary, but it has been impacted by shortages of some very basic medicines, such as morphine. And in these instances, the expertise of the clinical pharmacists has been helpful when substitutions need to be made. "Most of the drug shortage issues have involved selecting alternative agents that we don't normally use, and then providers aren't sure how to dose them," says Patka.

Analyze your medication errors

At UAZ, there is no question that the clinical pharmacists are preventing medication errors, says Hays. For example, in the high-pressure ED environment, it is not uncommon for drug allergies to be overlooked by treating providers. "We will have someone come in with a penicillin allergy, and the physician will order Zosyn, which has penicillin in it," he explains. "That is something that we will catch and immediately prevent the medication error."

In a specific case that occurred recently, the clinical pharmacist was able to prevent an error involving a patient who presented to the ED with anaphylaxis and was subsequently prescribed epinephrine to be delivered intravenously. "The paramedic who was taking care of the patient pulled the wrong drug strength out of [the automatic dispensing machine], and had we not been there and caught that, it would have resulted in significant injury to the patient," recalls Hays.

It may also be instructive to look at errors that occur when clinical pharmacists are not present in the ED, says Hays.

While computerized-physician-order-entry (CPOE) systems can prevent many errors, medication orders in the ED are often verbal, so they escape this type of safeguard, explains Hays. Further, even when CPOE is used, it is easy for miss-clicks to occur, and such systems don't always contain complete information regarding such issues as patient drug allergies, he says.

Consider the evidence

With such a small number of clinical pharmacy programs in place in hospital EDs, the approach has not been studied to the degree that proponents might like, but an evidence base is being developed. A recent study by researchers at the University of New Mexico (UNM) in Albuquerque, NM, found that there were 13 times more errors reported at UNM's level 1 trauma center when pharmacists were not present when compared to times when pharmacists were on site.[1] In this study, antibiotic medications were associated with the most errors. However, errors associated with pain medications, cardiac medications, gastrointestinal drugs, and antiemetics were also reported. When pharmacists were present, they typically made dosage corrections or suggested alternative therapies. Physicians accepted these suggestions more than 90% of the time, say researchers.

In another study, co-authored by Hays, researchers at the University of Rochester Medical Center in New York found that the

presence of a pharmacist in the ED quickened the pace with which patients with ST-elevation myocardial infarctions moved from the ED to the cardiac catheterization laboratory.[2]

In a third study conducted at the University of Kentucky, researchers compared error reports in an ED setting before and after the addition of two emergency medicine (EM) pharmacists, and found that the EM pharmacists were able to capture significantly more errors (94.5%) than other health care personnel (5.7%). The authors concluded that the addition of the pharmacists resulted in 14.8 times as many medication-error reports as were made when no EM pharmacists were in the ED.[3]

Identify champions to build support

While such dividends are attractive, cost and availability remain as barriers to the proliferation of more clinical pharmacy programs in the ED. However, a far bigger issue, according to Hays, is the dearth of qualified clinical pharmacists who have been trained to work in the ED setting. "Right now, there are only 10 or 11 residency programs to train pharmacists to work in the ED, and there just aren't enough people trained yet," he says.

Another problem is that not all pharmacists are well-suited to the environment of emergency medicine, adds Hays. "I have worked with several people in the past who had ICU training but they didn't have an ED mentality, and these people then struggled to make the position work," he says. "It requires the ability to really tolerate unusual situations, the ability to let things roll off you, and the ability to roll with the punches."

Nevertheless, Hays suggests that ED leaders interested in implementing a pharmacy program should reach out to established programs to discuss how their programs work, and what policies and steps are needed to make this type of intervention successful.

Size is certainly a factor, as there needs to be enough volume to make having a pharmacist in the ED worthwhile, says Patka. However, he points out that smaller EDs might be able to work out an arrangement where they share a clinical pharmacist with another hospital department.

For a program to be successful, it must have the support of physicians and nurses, stresses Patka. He suggests that one good way to do that is to find the physicians and nurses in the organization who have previously worked with ED-based clinical pharmacists and enlist their support in gaining buy-in for the approach.

Also, focus on specific drug-related goals that the organization is trying to achieve and show how a clinical pharmacist can help the ED achieve that goal, advises Patka. For example, one of the most common problems that Patka hears from colleagues in other ED settings is that they have difficulty communicating with the inpatient pharmacy. "Turnaround time and speedy throughput are important factors in the ED, and sometimes it is hard for the people in the pharmacy to see that or to understand that," he says. "That's a gap that the clinical pharmacist can help to bridge because [he or she] can help both of those groups see both sides," explains Patka.

While there are challenges involved with implementing an EM clinical pharmacy program, Hays points out that such programs are getting high marks where they have been established. "I would say do it without reservation," he says. "Every place I know that has started a program has gone from one to two pharmacists, if not 24/7 coverage. The benefit of it well outweighs the cost." ■

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Study: Older patients in the ED less likely to receive pain medication than middle-aged adults

A new study suggests that older patients who present to the ED with pain are less likely to receive treatment for that pain than younger adults. The study, which appeared in the *Annals of Emergency Medicine*,[1] involved an analysis of data collected from the National Hospital Ambulatory Medical Care Survey for 2003 through 2009.

The researchers found that 49% of patients aged 75 years and older received an analgesic medication, as compared with 68.3% of middle-aged patients. Further, while 34.8% of the elderly patients received an opioid for their pain, 49.3% of middle-aged patients, aged 35 to 54, received an opioid. Other emergency providers have noted that pharmacists often refuse pain medications, fearing they will not like the effects of the medication.

Even after analysts adjusted the findings for sex, race/ethnicity, pain severity, and other factors, the differences remained between the two age groups. Researchers report that the elderly patients were 19.6% less likely to receive an analgesic medication and 14.6% less likely to receive an opioid medication than middle-aged patients.

The researchers did not investigate the reasons behind the treatment differences, but **Timothy Platts-Mills**, MD, the lead author of the study and an assistant professor of emergency medicine at the University of North Carolina at Chapel Hill School of Medicine, indicates that this may be because physicians are concerned about potential side-effects in older adults.

"Older patients are at higher risk for adverse reactions, so physicians may under-treat them or not even treat them at all," agrees **John Patka**, PharmD, BCPS, a clinical pharmacy specialist in emergency medicine in the Grady Health System in Atlanta, GA. "What I see is that [physicians in the ED] may provide a dose of medication and then not reevaluate later to continue to titrate the medicine up."

Another contributing factor, says Patka, is that elderly patients often under-report their pain. Sometimes it's because they don't want to bother a busy clinician with their problems. "You really have to consider that they may not tell you about their pain, and use your clinical judgment," he explains. "Try to ask patients about it again, or ask them in a different way."

The issue comes up in the ED because physicians don't typically have that extra 15 minutes to spend with patients, says Patka, noting that it is one area where clinical pharmacists who are stationed in the ED can step in. "Most EDs are really getting pushed to see patients faster," he says.

Platts-Mills says further research on how to most effectively manage pain in older patients is needed, and that for most older adults, effective treatment for acute pain is likely to provide substantial benefits. ■

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Patient Flow
SOLUTIONS

New 'Patent Accelerated Care Environment' aims to facilitate work flow, free up ED for acute care needs

Novel approach relies on efficiency rather than size to handle surging volume

With surging demand for emergency care, many hospitals across the country are building larger EDs or expanding existing facilities to make room for more beds. Bucking this trend, however, is Virginia Mason Medical Center (VMMC) in Seattle, WA. Yes, the health system has a brand new ED that just opened its doors to patients in November 2011; however, at 17 beds, the new ED is actually smaller than the old department. But alongside the new facility is an 18-bed Patient Accelerated Care Environment (PACE), a brand new unit that is designed to help the ED and other areas of the hospital operate more efficiently while also connecting patients with the care they need quickly.

"We downsized our waiting room, as well as our bed capacity in the ED to be able to facilitate the care of just those acute patients who are coming into the ED," explains **Sharon Mow,** MSN, the ED director**.** Patients who need a few hours of care but do not require admission are quickly moved over to the PACE unit. Also destined for the PACE unit are patients who are in the process of being discharged, as well as the patients who are being prepared for admission. These patients are moved to the PACE unit so that evaluation and treatment can begin immediately before they are transferred to an inpatient bed, adds Mow.

Administrators came up with the concept for PACE when they observed that the needs of patients coming to the ED for care were changing. "Over the last 18 to 24 months, the acuity of patients has continued to rise, really eliminating the need for us to have a fast-track area," says Mow. Instead, what the health system needed was a place to deliver a higher level of care, which is what PACE is equipped to deliver, she says. "We are sending 35% to 40% of our patients over to the PACE unit over the course of the day," adds Mow. ***(Also, see "The case for creating rather than building capacity", p. 19.)***

First, establish optimal work flow

The PACE unit is hardly the first care delivery innovation to come out of VMMC. Applying the Toyota production system to health care, the health system established its own Virginia Mason Production System, or VMPS, that it now uses to develop all of its processes. "Our role is always to design the work and the most efficient flow, and then design the facility to support the work as opposed to a lot of other models where people build a building, they are handed a set of blueprints, and then they kind of shoe-horn the work into it," explains **John Gillespie**, a VMMC spokesman. "The new ED is in an addition to the hospital called the Jones Pavilion that is literally being designed and built a floor at a time to support the ideal flow for the activities that will occur on that floor."

When planning for the new ED began about three years ago, developers focused on what would be the most efficient and cost-effective way to take care of a patient with the best-quality outcome, says Gillespie, noting that they looked at the entire continuum of the ED experience. "That is where the concept of PACE came from, understanding that so many of the patients who come into the ED environment are not acute patients," he says. "The latest data we saw here is that the average delay or wait in an urban ED is six hours right now. That is because you have people who are not acutely ill taking up those acute beds."

The waiting room in the ED tends to be pretty empty, says Mow. During peak hours there may be a few patients or some family members who are in the waiting area, but that is not the norm, she says. "We triage at the bedside so our patients are greeted and immediately brought back to a bed, versus the typical type of triage where patients are triaged out in the waiting area or a triage room, and then they wait to see a provider," says Mow.

All patients are initially admitted to the ED and seen by the ED team, says Mow. "We do what we call a 'team greet,' so our ED providers, nursing staff, and patient care staff are all at the bedside," she says. "There is one type of report, they all hear what is going on, and care is initiated."

The PACE team includes a separate set of nursing staff who will come over to the ED, get bedside reports from the ED nurses, and discuss any questions with patients as they are transitioning their care over, explains Mow. However, what provider will oversee a patient's care in the PACE unit will vary depending the patient's status. Patients who are going to be admitted to the hospital or are going to be on observation will be transferred from the ED provider to a hospitalist team right away, adds Mow. "Those patients who we think will be discharged and go home will stay under the care of the ED provider," she says. In either case, the

EXECUTIVE SUMMARY

Faced with rising acuity levels and surging demand, Virginia Mason Medical Center modified the Clinical Decision Unit concept used in many EDs, and developed a new Patient Accelerated Care Environment (PACE) to care for observation patients, process patients for discharge, and to prepare patients for admission. The approach is designed to utilize ED beds for initial processing of patients, allowing resuscitative care if needed, and treating and releasing the patients with quick care needs.

- Using the Virginia Mason Production System, a methodology that is modeled after Toyota production techniques, developers designed an optimal work flow pattern and then built infrastructure to facilitate that process.
- All patients who present to the ED for care are seen by the ED team through a "team greet" approach.
- Approximately 35% to 40% of patients who come to the ED for care are transferred to the PACE unit.
- Patients assigned to the PACE unit typically remain there for 4 to 48 hours, depending on their care needs.

approach frees up the ED for incoming patients.

An electronic tracking board keeps everyone informed about what the next step is for each patient: admission, observation, or discharge. "The PACE unit charge nurses are watching that board, and once they see 'observation status' go up, they will call over to the ED to see if the patient is ready to come over," says Mow.

Patients typically stay in the PACE unit for 4 to 48 hours, depending on what their care needs are, adds Mow. "If they become sicker or they meet inpatient criteria, then we will look for a bed on an inpatient unit."

Consider long-term benefits

At press time, early data regarding patient satisfaction with the new ED/PACE unit approach were still being tabulated, but Mow says the concept has been well-received by hospital staff. For example, she explains that nurses are pleased that the approach has eliminated the prospect of having to move patients into the hallway while awaiting care. "From a nursing perspective, they know these patients will be passed off to another care team, that they will be well cared for, and that they are going to get what they need," says Mow.

The hospitalist team appreciates having their patients consolidated in one particular area, with nursing staff rounding very frequently so that patients are discharged on a continual basis throughout the day, as opposed to once or twice a day, adds Mow.

The PACE unit concept was a tougher sell to the ED providers when it was in the discussion stage because they were concerned about moving some of their patients across the hall, as opposed to having direct line of sight, observes Mow. However, they have come to appreciate the ability to focus on acute patients in the ED. "They saw that advantage right away, so this has been a great transition for all of us," she says.

The hospital has further plans to leverage the PACE unit in the coming months. For example, transplant patients, who have traditionally been admitted through the ED and processed as they are prepared for their organ, will eventually go directly to the PACE unit, says Mow. Also, some of the direct-admission patients will go directly to the PACE unit, thereby freeing up more space in the ED. "We will have hospitalists come down and see the patients there, get their orders initiated, and all of the initial testing will be done so that the stay is compacted and LOS is reduced," says Mow. "We are working out the process for that."

There is no denying the expense involved with building a new ED. And VMMC's new facility came in at a tab of $8 million, with a few hundred thousand more going toward the PACE unit, says Gillespie.

"What you are seeing nationally is a boom-town effect in a lot of places where people are just building EDs, building rooms, and spending a ton of money, but they are not looking at the process or the flow," he says. Ultimately, Gillespie believes that the benefits of the ED/PACE concept will cascade throughout the health care system and more broadly into the community. "We are a non-profit, so every dollar we use is a community resource," he says. ■

SOURCES

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The case for *creating* rather than building capacity

Why is the patient acuity level rising at so many urban, hospital-based EDs? In Seattle, WA, part of the reason is because the market is flooded with resources to handle the less acute problems, observes **Sharon Mow**, MSN, the ED director. "There are a lot of free-standing EDs, and many, many urgent care centers in the immediate area," she says. "So a lot of the bumps, bruises, and sprains are going to those facilities and we're seeing those who are more acutely ill heading toward hospital-based EDs."

Another factor is the high level of homelessness in the Seattle region, explains **John Gillespie**, a Virginia Mason Medical Center (VMMC) spokesman. "This area tends to be a magnet for the homeless because there are a lot of services and it has a more temperate winter climate than other northern areas of the state," he says. Further, Gillespie points out that VMMC is a multi-state, quaternary care system, so the acuity level of patients is going to be a little higher.

"All of these things come together, so you have this potion or witch's brew of circumstances driving up acuity," he says. "And as an organization, you can do one of two things: you can build a whole lot of capacity or you can create capacity by providing better, more efficient care. We have created capacity."

For example, even while demand for services has surged, VMMC has reduced the amount of square footage being used to care for a patient, says Gillespie. "We have removed more than 26 miles of walking for our staff in a day by making processes more efficient," he says. "All of that plays into how we deliver better emergency care." ■

Boost efficiency, patient satisfaction with staff-driven improvements

Zoning system, clinical teams foster accountability in the ED

When Robert Wood Johnson University Hospital in Hamilton, NJ, redesigned the ED to handle increasing patient volume back in 2001, its guarantee to see and treat patients quickly kind of "went by the wayside," explains **Lisa Breza,** RN, BSN, the hospital's chief nursing officer. "It's not that we weren't focused on [throughput], it's just that with increased transparency, value-based purchasing, and all these initiatives coming forward, we had a more focused review of our quality metrics and services that were rendered in the ED," she says.

However, administrators were determined to re-institute the guarantee, so they spent a year tracking data throughout the hospital to see where bottlenecks were occurring, and they deployed teams to redesign antiquated processes and steps that were taking too long. "We looked at the data and knew we wanted to improve both the quality of care and the service we provide," says Breza. ***(Also, see Management Tip on selecting team members, p. 22.)***

The quest for improvement continues, but in August of 2011, the ED was able to re-institute its 15/30 guarantee, informing patients that they will be evaluated within 15 minutes of arrival in the ED and they will receive a medical examination within 30 minutes, or the fees associated with these portions of the visit will be waived. The results from the initiative, thus far, include a decrease in the left-prior-to-medical-screen examination rate from 3% to 1%, with an average rate of 1.4% since implementation, in an ED department that sees 50,000 patients per year.

It's a simple guarantee, but backing up this pledge are hospital-wide improvements to patient throughput and a novel system of zones in the ED. Administrators say the system has made clinical teams more accountable for their work and delivered a more personalized experience to patients.

EXECUTIVE SUMMARY

A hospital-wide improvement effort has enabled Robert Wood Johnson University Hospital in Hamilton, NJ, to reinstitute a guarantee that patients arriving at the ED for care will be evaluated within 15 minutes and receive a medical examination within 30 minutes. Administrators used a team approach to identify bottlenecks and implement solutions, and they divided the ED into four zones, with provider teams responsible for each zone.

- Since implementing the guarantee in August of 2011, the ED has reduced its left-prior-to-medical-screening-exam rate from 3% to 1.4%, in an ED department that sees 50,000 patients per year.
- The zoning system in the ED has improved patient throughput and fostered accountability within the care teams responsible for each zone, say administrators.
- Overall care provider satisfaction has risen from the 75th percentile in 2010 to the 80th percentile in 2011, according to Press Ganey surveys.

Take a whole hospital approach

While the improvement effort was keenly focused on the ED, administrators recognized that it needed to be a hospital-wide initiative. "You can't just improve ED throughput without improving efficiencies and throughput within the entire hospital," says Breza. "If our discharge process and our patient management processes are not streamlined, then we have increased length of stay in the main hospital, there are delays in getting patients treated and discharged, and we can't bring in new patients who are arriving in the ED."

Following the Lean approach to improvement, administrators assembled teams to look at different processes in the hospital and find ways to make them more efficient. For example, Breza led a team that looked at the admissions process to find out why patients from the ED were not getting placed into beds on inpatient units in a timely manner.

"There were delays in nurses accepting report on patients, which caused bottlenecks in the ED, as well as delays in the ICU and our telemetry units," she explains.

To get around this problem, the team developed rules and procedures that give ED patients priority, so that nurses will take report on these patients unless there is something critical going on in the unit, says Breza. "There is no excuse not to take report, and if a nurse is not available, the coordinator on the unit will take report and get that patient up on the floor in a timely fashion," she says.

To insure that such policies and procedures are adhered to and that everyone is on the same page, administrators hold bed huddles twice a day, at 7:30 in the morning and 3:30 in the afternoon. "We review what kinds of patients we have in house and what kinds of admissions are waiting; we look at the whole hospital and what is going on in all disciplines," says Breza. "This way, everyone knows what needs to be done for that day, and they all go back to their areas with a goal of prioritizing throughput."

The team also discovered that some ED patients weren't getting transferred to inpatient beds quickly because there was no transport available, so the team assigned dedicated transport to the ED, says Breza.

Use zones, care teams

Big changes in the ED included a revamped quick triage process that involves retrieving minimal information from a patient upon entry, so the patient can be seen by a provider quickly, and division of the ED into four zones, each manned by provider teams. In three of the zones, a physician, two nurses, and a tech work together to take care of patients; the fourth zone is a prompt care area overseen by a physician, a mid-level provider, two nurses, and a tech, explains **Eileen Singer**, DO, FACEP, FACOEP, chair of the Department of Emergency Services.

"Each team is working close to where the patients are being treated, which is better in terms of patient satisfaction and throughput because the providers are not walking back and forth to different areas of the ED," says Singer. "We have also put our supplies in certain strategic areas that are commonly used in the department so that they are readily available for treating patients."

There were a few speed bumps involved with getting the zoning process implemented, acknowledges Singer. "When you have a group of physicians who just randomly see patients, there are some who are faster than others," she says. However, when patients are being assigned to a particular zone or team, providers have a responsibility and an obligation to see those patients quickly, she says.

"In the beginning, more patients were being brought back [into the zones] and it was difficult because some providers were getting overwhelmed in their zones," says Singer. "But I think it forced everybody to be more accountable and to work as a team."

For example, when one nurse is busy, the other nurse working in the zone will pick up the slack and help out because the team is responsible for a specific set of patients, explains Singer. "You have to have a good working relationship with the other people in your zone in order to move the patients through," she adds.

Do detail work, analysis prior to implementation

It took some tweaking before the system worked well, notes **Pam Ladu**, the hospital's executive director of strategic planning and operations improvement. "We had to get feedback, make some quick changes, and reevaluate it until we got it to the point where it was more streamlined and everyone was comfortable with it," she says

For example, when the zoning process debuted, there was some confusion during the morning hours because the prompt care area opens later than the other zones. As a result, patients were getting backed up in one zone — which was not the intent, says Ladu. "The physicians and nurses who worked on that team were getting bombarded, and they were not too happy about it," she says. However, appropriate adjustments were made to alleviate the stress on the system and to keep patients moving.

"It involved a lot of work on the part of the clinical coordinator, who is the person who is really looking at the acuity of patients and determining which zone they will be assigned to so that no one team gets overloaded," says Singer, noting that these decisions are made immediately after the quick triage process.

Further, getting the process to work efficiently required a lot of detail work in the background, adds Ladu. "Before we implemented any of this, we had to really analyze the data in the ED and look at what our peak times were, when patients

were coming in, and when they were beginning to queue," she says. "And we had to make sure that staffing was appropriate."

However, in just a few months, the approach has already carved five minutes off of the median room-to-medical-screening-exam time, which now stands at 16 minutes.

Delegate change process to ED clinicians, staff

As with the other changes made throughout the hospital, the zoning system was developed and implemented by a team. In this case, physicians, nurses, technicians, and other personnel from the ED drove the process, and this was key to the ultimate success of the approach, stresses Singer. "This is very important because you want buy-in from the people in your department," she says. "When there was some pushback, there were a couple of nurses [from the team] who would encourage people to give it a chance, so you need champions for these types of projects."

Of course, problems still arise, and there can be unanticipated surges. However, to ensure that each of these issues is dealt with expeditiously, there is always a designated lead physician who works with the coordinating nurse to keep throughput moving, explains Singer.

"The zoning system is one of the better processes that we have put into place," she says. "It definitely decreases throughput time and it increases patient satisfaction because the patients and their families see the physician right there. They know who the physician is because [he or she] is in close proximity to the patients."

In addition, it enables physicians to regularly round on their patients because they are all in a concentrated area. "Everyone works together, they know their patients, and they know they are with this team for the day," she says. Overall care provider satisfaction has risen from the 75th percentile in 2010 to the 80th percentile in 2011, according to Press Ganey surveys.

From a "Lean" perspective, the zoning methodology reduces non-value-added time and increases value-added time, says Ladue. "For the patient, it creates more time with care providers and less time spent searching for supplies or running all over the place," she says. "So in addition to making everything more efficient, it enables patients to have more face time with the people they think are in charge of essentially getting them home sooner." ■

SOURCES

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• **Pam Ladu**, Executive Director, Strategic Planning and Operations Improvement, Robert Wood Johnson University Hospital, Hamilton, NJ. Phone: 609.584.6582.
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Management Tip

When assembling a team to drive change, include some members who tend to resist new ideas

One common approach to problem solving is to assemble a team of employees or clinicians who are impacted by a specific issue or problem. The team members first sort out all the factors involved and then devise a solution. The team can then also be responsible for implementing the solution with colleagues. It's a strategy that Robert Wood Johnson University Hospital in Hamilton, NJ, is using in a hospital-wide, performance improvement initiative.

COMING IN FUTURE MONTHS

- Take steps to fully leverage the value of EMRs
- Small, rural hospitals get comfortable with telemedicine
- Outreach effort relies on ED data to drive prevention
- How to get hospital personnel on board with flu vaccinations

Interestingly, **Pam Ladu,** the hospital's executive director of strategic planning and operations improvement, suggests that when selecting individuals to serve on a team, it is not necessary, or even advisable, to always select people who adapt easily and eagerly to new ideas. To the contrary, it can pay off to include people who are often resistant to new approaches. "Those are the hardest minds to change, so if they are part of the change, they are more likely to adapt to it and spread that good feeling to their peers," she says. ■

Survey: Physicians are worried about the impact of health reform on ED volume

A new survey suggests that nearly three-quarters of physicians are very concerned that EDs will get overwhelmed if there are not enough primary care physicians to handle demand under the Patient Protection and Affordable Care Act (PPACA). The survey, by the Deloitte Center for Health Solutions in Washington, DC, queried a random sample of 501 physicians to gauge their views about health reform. The results are complied in a report: *Physician Perspectives About Healthcare Reform and Future of the Medical Profession*.

Responses to the survey suggest that physicians are largely skeptical about the PPACA's ability to reduce costs by increasing efficiency. Only 27% indicated that the law would have a positive effect on efficiency, and just 33% expect that the law will decrease disparities. Further, more than 80% of respondents said they believe that wait times for primary care visits will increase because of a lack of providers, and that this will increase pressure on EDs.

In general, older physicians are more pessimistic about the law than younger providers. In the survey, 59% of physicians aged 50 to 59 indicated that the law is a step in the wrong direction. Only 36% of physicians aged 25 to 39 shared these sentiments.

Further, surgical specialists were much more likely to support repeal of the PPACA (57%) than primary care providers (38%).

Other findings from the survey suggest that physicians expect payment reforms will reduce their incomes and increase their administrative costs. Further, while most physicians believe that evidence-based medicine improves care quality, they acknowledge that physician adherence may be difficult. ■

CNE/CME INSTRUCTIONS

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

1. Read and study the activity, using the provided references for further research.
2. Log on to **www.cmecity.com** to take a post-test; tests can be taken after each issue or collectively at the end of the semester. *First-time users will have to register on the site using the 8-digit subscriber number printed on their mailing label, invoice, or renewal notice.*
3. Pass the online tests with a score of 100%; you will be allowed to answer the questions as many times as needed to achieve a score of 100%.
4. After successfully completing the last test of the semester, your browser will be automatically directed to the activity evaluation form, which you will submit online.
5. Once the evaluation is received, a credit letter will be sent to you. ■

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. ■

SOURCE

• *Physician Perspectives About Health Care Reform and the Future of the Medical Profession,* Deloitte Center for Health Solutions, Washington, DC

CNE/CME QUESTIONS

1. According to **Daniel Hays**, PharmD, BCPS, FASHP, one reason why computerized physician order entry (CPOE) systems don't catch more drug errors in the ED setting is because:
A. physicians don't like to use CPOE
B. many of the drug orders are verbal
C. ED clinicians are too busy to use CPOE
D. patients treated in the ED are more complex

2. A new study suggests that patients aged 75 and older presenting to the ED are less likely to receive treatment for their pain than middle-aged patients. **John Patka**, PharmD, BCPS, suggests a primary reason for this is probably because:
A. older patients are at higher risk for adverse reactions
B. older patients do not feel pain as intensely as younger patients
C. older patients are not accustomed to the fast-paced ED environment
D. physicians lack training in how to treat pain in older patients

3. Virginia Mason Medical Center in Seattle, WA, just opened up a new Patient Accelerated Care Environment (PACE) in order to:
A. free up the ED for patients with acute care needs
B. handle fast track patients
C. care for patients who are waiting for inpatient beds
D. get patients out of the hallways

4. Some patients who are transferred to the PACE unit at Virginia Mason Medical Center in Seattle, WA, remain under the care of an ED provider. However, patients who are on observation or those who are going to be admitted to the hospital are:
A. cared for by nurses until their paperwork is completed
B. under the care of mid-level providers
C. transferred to a hospitalist team
D. none of the above

5. According to **Sharon Mow**, MSN, one of the reasons why the ED is seeing a higher patient acuity level is because:
A. the market is flooded with free-standing EDs and urgent care centers
B. there are more accidents than there used to be on the highways
C. the average age of the typical ED patient is rising
D. all of the above

6. According to **Eileen Singer**, DO, FACEP, FACOEP, to ensure that unanticipated surges or other problems are dealt with expeditiously in the ED at Robert Wood Johnson University Hospital in Hamilton, NJ, there is always a:
A. team of administrators on call
B. flow-chart for decision-making
C. crisis intervention team
D. designated lead physician