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INSIDE

Editor's Note: This month's cover story is the latest entry in AHC Media's ongoing coverage of mass casualty incidents and how the healthcare industry is preparing for the next event. For more, please visit AHCMedia.com.

Training, Drills Pivotal in Mounting Response to Orlando Shooting

Officials from Orlando Regional Medical Center note their incident command system worked as intended, facilitating a quick mobilization effort

Emergency providers generally have some warning when a hurricane or another natural disaster poses risks to the community. However, that is rarely the case with a mass shooting, as was evident in the early morning hours of June 12, when a lone gunman opened fire inside the Pulse nightclub in Orlando, FL. There was no predicting the scope of this disaster, as it produced 50 deaths, including the gunman, and dozens of injuries — more carnage than any other mass shooting in U.S. history.

The impact of the event was reduced because a Level I trauma center, Orlando Regional Medical Center (ORMC), was only three blocks away from the scene of the shooting. ORMC had experience treating trauma patients arriving in short intervals, although no events close to the scale of what happened on June 12. Further, hospital administrators note they had only recently held large-scale training exercises on how to respond to a mass shooting event. The practice, logistics, and fine tuning that took place during this exercise could not have been better timed to prepare both hospital staff and community partners for the challenge of the actual event. (*See also, "ACEP, AMA Call for Action," p. 88.*)

Patients Arrived in Two Waves

As is almost always the case in a mass casualty event, the emergency response was hardly glitch free. For instance, the first email alert notifying **Eric Alberts**, ORMC's manager of emergency preparedness, about the shooting incident failed to rouse him from sleep. It was shortly after 2 a.m. at that point. Alberts finally received word of the incident via text more than one hour later. As a result of this problem, Alberts observes that ORMC has already begun searching for a more robust notification system, but he emphasizes that the incident command structure was triggered regardless of the

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notification delay.

"It is a layered approach," Alberts explains. "Whoever is there is responding in whatever roles are needed during the incident ... so it is a scalable response system, and because of that, the more people we have, the more people we are able to put in those positions to respond to the emergency."

Timothy Bullard, MD, an emergency physician who is part of the incident command structure for mass casualty intake, describes another glitch that occurred shortly after he arrived at the hospital that morning around 3 a.m. At that point, the ED was briefly locked down because of false reports that a gunman was in the vicinity.

"With all these [types of events] there are a lot of rumors and questions about what is actually happening, how many shooters there are, and things like that," he explains. "It didn't last very long. We had a lot of police on site at that point in time and we had our own security ... so people were fearful for a short period of time, but that passed."

The patients arrived in two waves, with the initial surge arriving right after the shooting took place around 2 a.m., and the second surge arriving about three hours later, after police blew a hole through the nightclub, killed the gunman, and found the remaining victims. ORMC received 44 victims, nine of whom died within minutes of arrival.

There Was No Time to Organize

One of the biggest challenges facing emergency providers was the speed with which the incident unfolded, Bullard recalls.

"Normally, we would have more time in a disaster to organize. There was really no time at all," he relates. "My partners who were there [at the time of the shooting] got the call that there would be a number of shooting victims, and then they showed up. Some of them weren't even brought in by ambulance. They were brought in by pickups, so there was a very narrow window of notification."

However, since ORMC is a level one trauma facility, the hospital had the kind of expertise and resources that a smaller, community hospital might not have been able to marshal in such a short period of time.

"We have a lot of personnel in house that we can mobilize," Bullard observes. "We have two surgical critical care guys and some fellows in house; we have a cadre of emergency physicians that are normally on staff to take care of patients; and then we have some medical intensive care physicians who are available at night as well."

Also, in a fortuitous administrative quirk, all five resident physician slots on the schedule that night were filled by senior residents who were literally two weeks from finishing their training, Bullard notes.

"It was very close to the end of the year when new residents come in and the classes change," he explains, noting that experience makes a difference at such critical times. "It would have been more difficult for us had more junior residents been available."

Surgeons had to be called in, but most of them live close to the hospital and they were on site quickly, Bullard notes.

"With all this manpower ... we were up to speed quickly," he says.

Further, with the incident occurring in the middle of the night,

the ED was not overwhelmed with personnel flooding into the hospital to help out.

"That is one thing we always worry about. Everybody wants to participate and help, but sometimes it can create another level of chaos trying to organize people and just deal with personnel you actually need," Bullard adds. "Because this happened at 2 a.m., there were an awful lot of people that really didn't know about it. Most of the people who came in were called to come in."

Administrators even called hospital personnel to let them know not to come in unless they were contacted.

"If the shooting had happened during the day or earlier in the evening, the ED might have had real issues with just trying to control our own personnel and keep things at a manageable level," Bullard says.

EXECUTIVE SUMMARY

Emergency providers at Orlando Regional Medical Center in Orlando, FL, faced multiple challenges in responding to the worst mass shooting in U.S. history. As the scene of the shooting was only three blocks away from the hospital, there was little time to prepare when notified that victims would begin arriving shortly after 2 a.m. on June 12. Also, fears of a gunman near the hospital briefly put the ED on lock down. However, using the incident command system, the hospital was able to mobilize quickly, receiving 44 patients, nine of whom died shortly after arrival. Administrators note that recent training exercises geared toward a mass shooting event facilitated the response and probably saved lives.

- Patients arrived at the hospital in two waves, with the initial surge occurring right after the shooting took place around 2 a.m., and the second surge occurring about three hours later.
- At one point, more than 90 patients were in the ED, more than half for reasons unrelated to the shooting.
- Clinicians contended with a much higher than usual noise level while treating patients, making it hard to hear reports from EMS personnel. Also, treatment had to commence prior to identification for some patients who arrived unconscious or unable to speak.
- While surgeons and other key specialists were called into the hospital to address identified needs, administrators actually called hospital personnel to tell them not to come in unless they were notified. This prevented added management hurdles.

Noise, Patient IDs Proved Challenging

One challenge clinicians faced was trying to identify patients who required treatment, but were not conscious. The hospital had procedures in place to manage this complication, Bullard notes.

"We registered [these patients] in a certain order, and that was an issue, but people went back and re-registered those patients [once they were identified] and made sure that everybody was appropriately matched with the appropriate labs and X-rays that had been done on them," he explains.

Alberts explains that the hospital leveraged many different methods, including digital fingerprinting, to ensure patients were accurately identified and that their families were informed about their status.

"When you have an unidentified patient, you will go to great lengths to [identify] who they are and to reunite them to their families, because families have a lot of say on a patient's care in the hospital, especially when the patient can't speak for himself," he explains. "We do our due diligence, not only for the patients' families, but medically speaking we have to be doing the right thing for [the patients] to make sure they are getting appropriate care."

Another challenge was the noise level, Bullard observes.

"When you get in a room with six critical patients and you've got multiple teams, the noise level is always an issue," he explains. "Normally, when we have one or two trauma victims, everybody is very quiet and listening to the reports that the EMS personnel give out, but with so many patients coming in simultaneously, some of that falls apart," he says. "We were able to get our jobs done, but it was difficult at times for everyone to hear."

Bullard adds that caring for patients in the midst of a mass casualty event requires adjustments beyond the speed with which clinicians normally operate.

"You are a little bit more aggressive with patients," he explains. "If you think something needs to be done, you are not going to second-guess yourself and say, 'let's wait a while and see if the patient gets a little better.' You are going to do everything right then, because you don't have the luxury of watching them."

ACEP, AMA Call for Action

With yet another grim reminder that mass shootings are now occurring with increasing frequency, emergency management planners and clinicians are focusing more time and energy on preparing for such an event. For instance, in January of this year, American College of Emergency Physicians (ACEP) approved the creation of a multidisciplinary "High Threat Emergency Casualty Care Task Force," which is focused on understanding, tracking, and responding to mass casualty events like the Pulse nightclub shooting.

"We are resolved to redouble our efforts at dealing with what has unfortunately become a regular occurrence in our nation," noted **Jay Kaplan**, MD, president of ACEP, in a press notice following the Orlando shooting. "As a specialty, we will continue to lead and collaborate with partners across the emergency response continuum in efforts aimed at reducing potentially preventable deaths and disability due to these horrific attacks."

Kaplan noted that the newly created task force will leverage the expertise of its members to improve responses to future violent events. Specifically, he noted that the panel will:

- work toward developing a process in which ACEP can rapidly capture and disseminate lessons learned from specific incidents to first responders across the country.
- collaborate with multidisciplinary researchers and public policy experts to develop a database of information on wounding patterns and causes of death for the victims of mass violence.
- coordinate with partners such as fire, EMS, law enforcement, and trauma care providers to analyze best practices for both prehospital and hospital responses to such events.
- press for resources so that communities can effectively prepare for, respond to, and recover from violent incidents that occur in the future.

"Information is power," Kaplan noted. "At this moment when we feel powerless, we must focus on learning from this tragedy to improve our response in the future."

Calling gun violence a public health crisis, the American Medical Association (AMA) said it will actively lobby Congress to lift its 20-year-old ban on gun violence research by the CDC.

"With approximately 30,000 men, women, and children dying each year at the barrel of a gun in elementary schools, movie theaters, workplaces, houses of worship, and on live television, the United States faces a public health crisis of gun violence," said **Steven Stack**, MD, AMA's president and an emergency physician. "Even as America faces a crisis unrivaled in any other developed country, Congress prohibits the CDC from conducting the very research that would help us understand the problems associated with gun violence and determine how to reduce the high rate of firearm-related deaths and injuries."

Stack noted that an epidemiological analysis of gun violence is vital so that healthcare providers, law enforcement, and society at large can work at preventing injury, death, and other harms resulting from firearms. ■

Training, Drills Are Essential

At one point, there were more than 90 patients in the ED, more than half for reasons unrelated to the shooting event. Would the ED have been able to manage even more patients, if needed? Yes, according to Bullard.

"The incident command would have called a lot more people in," he says. "I went down to the ED and asked my partners what they needed. They said from an emergency physician and surgeon standpoint, they were in pretty good shape, but they did ask that we get more vascular support and some more orthopedic support, so we got on the phone and got those people in."

The system worked, but Bullard emphasizes that the ability to mobilize so quickly stems from the hospital's diligence in regularly performing critical training exercises and drills. He advises colleagues to use the Orlando experience and similar incidents as motivation to drill frequently and take such exercises seriously.

"You just never know when a [mass casualty event] is going to hit your community, so that practice is first and foremost," Bullard observes. "At some point, everybody is going to get saturated, but we had the latitude to take in more patients, if needed — maybe not in a three-minute window, but had we known that we were going to get a huge number of secondary patients, we could have ramped up more."

Alberts, who organized a massive training exercise for an active shooter event as recently as March, could not agree more.

"That was a big benefit to all our team members," he says. "We had

that training opportunity for them to see what a real response to an active shooter situation would look like, feel like, and sound like."

The exercise was elaborate, including 500 volunteer victims who used fake blood and other materials to make their gunshot wounds and other injuries seem as authentic as possible.

"We had 15 hospitals and 50 agencies that participated," Alberts explains. "Because of that realistic scenario, and the fact that everyone was taking it seriously, it was a true training and education opportunity for our team members."

Alberts adds that some physicians and administrators have observed that the exercise was instrumental in helping ORMC and its community partners save lives the night of the Pulse shooting. Consequently, his advice to colleagues is to take full advantage of their training exercises so that they can identify areas of opportunity to improve.

"If you don't do that, you are really failing as a healthcare provider, and you are failing as a community," he says. "You must leverage any opportunity you have to learn and grow, because in a time of need like we had, training is what comes back to people's minds. If it is ingrained in their minds enough, it becomes a rhythm, and they just kind of step into it."

When designing such exercises, be sure to incorporate the wide array of community partners that a facility would rely on in a real mass casualty event such as law enforcement, fire and rescue, and even hazardous materials teams, Alberts advises.

"The collaboration and coordination that takes place when something like this happens is just astronomical," he observes. "The exercises are a great opportunity to do that because you will be able to see how each [group] reacts and responds to the incident."

If hospitals don't engage with such partners before a mass casualty event occurs, the critical element of trust may be missing, Alberts suggests.

"If you shake their hands ahead of time and you plan with them and work with them, you will get to know each other and get acclimated with one another," he says. "That is going to help you to respond in a real situation. That just shined through in this whole incident."

Post-event Reviews Offer Added Insight

With the crisis over, there are more opportunities to learn from the event. Administrators are still combing through data to put together a full after-action review.

"That is going to take some time, but one of the things we identified [for improvement] already is communications," Alberts notes. "With any real emergency or exercise you are always going to have an issue with communications, so we are looking at the efforts we have undertaken with communications and how we can do things better. That is really what our process is: We look at the things that can be tweaked and try to improve them for the entire organization and also for our community."

Part of this review process involves a series of debriefings, Alberts explains.

"We grab the critical stakeholders together within our organization and we walk through the situation," he says. "We try to start at a high level with sort of a snapshot of what happened, and then we start working through some of the things where we have questions regarding what worked well, what are some of the areas of opportunity, and where can we do things better."

At press time, ORMC had already conducted three debriefing sessions about the emergency response, which then led to a number of smaller "breakout sessions," Alberts notes.

"On top of that, our team members are going through employee assistance program [EAP] briefings to make sure everyone is properly taken care of," he explains. "When you experience traumatic incidents like this, it is going to impact human beings, and it is going to impact them in different ways. Some people are more accustomed to it than others and more adept at being able to respond to it. Others aren't, so we are taking this seriously."

The hospital has been conducting many EAP group sessions, but team members also are able to arrange individual sessions.

"In addition, we have a lot of chaplains at our hospital that team members are able to talk to at any time," Alberts says. "Our team members are encouraged to use any one of those [opportunities] in any form or fashion just to make sure they are talking through and working through this in their minds so that they are comfortable and healthy for the long haul." ■

SOURCES

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Education Creates Welcoming Environment for Transgender Patients

First-in-the-nation "Trans Buddy" program provides support and guidance to transgender patients who are fearful or anxious about interacting with providers

Patients who identify as transgender often are reluctant to seek needed care, either because they have experienced negative interactions with providers in the past, or they fear they will be unwelcome or perhaps "judged" in a traditional healthcare environment. There also is evidence that providers themselves often feel uncertain regarding how to manage encounters appropriately with patients who present with gender identities that are different from what they were assigned at birth.

Like so many other problems, such barriers certainly have implications in the ED, where patients often ultimately present when they can ignore their symptoms no longer. Experts note that how staff manage these encounters can have profound implications, not just with respect to the specific clinical situations for which these patients are seeking emergency care, but also on how they interact with the healthcare system going forward.

Transgender healthcare has its complexities, to be sure, but clinician leaders in this area explain that there are basic steps hospital and ED leaders can take to ensure that both clinical and non-clinical personnel clearly understand how to address and interact with transgender patients so they receive the care and treatment they require in a gender-affirming environment.

Address Provider Insensitivity

Consider the experience of **Samantha Gridley**, a medical student at Vanderbilt University School of Medicine, who recalls one of her first clinical encounters with a transgender patient while she was seeing patients on the general surgery service.

"This patient was seen in the ED, and we were consulted because the emergency physician gathered that the patient was going to need abdominal surgery," she explains.

In a blog post about the encounter, Gridley writes that she was "dumbstruck" by the insensitivity of the chief resident in the ED who reviewed the patient's medical record, but only commented on the fact that he was transgender and had undergone a bilateral mastectomy. Using crude language, the physician joked about the patient's "protected secret," prompting laughter from colleagues. Then, after entering the patient's room, Gridley relates that the physician was cordial, but seemed unconcerned about the patient's obvious reluctance to interact with healthcare providers. The patient had 10 abscesses on his abdomen, and he admitted that he had tried to drain them himself using a pen.

"Seeing how someone can be treated so poorly just because of the pronouns they choose and the way they want someone to call them ... it was just kind of earth-shattering for me that someone could be treated in such a way," Gridley explains.

Endeavoring to gain the patient's trust after the troubling encounter, Gridley asked the patient about his life. She learned that he had been shot and beaten after "coming out," and Gridley concluded that the fearful and anxious patient was exhibiting signs of PTSD.

Before the patient was discharged,

EXECUTIVE SUMMARY

The ED often is the access point of choice for transgender patients who may be reluctant to interact with providers. Experts say there is a need for training and education on how to present a gender-affirming healthcare environment. Recommended steps include a review of policies, along with corresponding changes to electronic and paper intake forms to ensure that the language used is inclusive of all genders.

- While blanket discrimination may be declining, experts note that some providers are uncertain about how to interact with a transgender patient.
- It's always best to ask patients for their preferred name and pronoun and to repeat this exercise every three to six months for return patients, as gender identity can be fluid.
- To ease anxiety for transgender patients, consider developing a navigator program that will pair any transgender patient who requests the service with a trained advocate who can support and guide the patient through the system.

Gridley set up appointments for him with an LGBT-friendly primary care physician (PCP) and a free counseling center in the area. She also later reported the behavior of the chief resident.

Gridley has since taken a strong interest in transgender health, recognizing that there is a clear need for education and training in this area. She recently coauthored a new study looking into the barriers to gender-affirming healthcare for transgender youth, which she completed with colleagues at Seattle Children's Hospital.[1] She also is among the first to take advantage of a new certificate program in LGBT health offered at Vanderbilt.

Use Gender-affirming Language

Jesse Ehrenfeld, MD, MPH, one of Gridley's mentors and the director of the program for LBGTI health at Vanderbilt University School of Medicine, stresses that a key point in caring for transgender patients is to remember that they are humans.

"We lose sight of the fact that regardless of the person in front of us, our job as healthcare providers is to do the best thing for the patient who needs our services," he explains. "While there is a lot of misunderstanding, fear, and uncertainty — and people aren't always sure what words to use or exactly what to do — at the end of the day the thing that serves our patients best is compassion and wanting to do the right thing."

Beyond the fundamentals, there are some practical best practices that Ehrenfeld encourages frontline providers and administrators to adopt. For example, he notes that clinicians should ask patients what their preferred name is and what pronouns they like to use.

"If a nurse or physician is not sure what to say, the most important thing you can do is ask the patient," he explains. "Patients appreciate so much that you care enough to pause and ask the question. I see that over and over again, and that has been a really important guiding principle in my own work and for our institution."

WHILE IT IS IMPORTANT TO CONSTRUCT A CLEAR, REGIMENTED METHOD FOR CARRYING OUT THE INTAKE PROCESS, IT MUST HAPPEN THROUGH AN "OPEN, AFFIRMING LENS," GRIDLEY OBSERVES.

While it is important to construct a clear, regimented method for carrying out the intake process, it must happen through an "open, affirming lens" for all patients, Gridley observes. For example, when she was working on her research pertaining to transgender health at Seattle Children's Hospital, Gridley notes that the institution compiled a set of proposed instructions for the hospital's intake process that are designed to ensure providers receive the information they need while also respecting the preferred gender of patients.

The approach involved asking patients for their legal name as well as their preferred name, and then asking for preferred pronouns, Gridley explains, noting that a preferred name alone doesn't necessarily tell you what a person's gender identity is. Clinicians then ask what a patient's birth-assigned sex is.

"Using that language is important because this question can be easily butchered in the intake process," Gridley adds. "It is just important that you use affirming, understanding language. 'Birth–assigned sex' or 'sex assigned at birth' is very appropriate terminology."

Gridley stresses that a patient's gender identity can change over time.

"If a patient comes to the ED every couple of weeks or every couple of months, and they keep using the ED for primary care, it is important not to assume these issues remain static just because you asked [these questions] one time," she says. "Gender identity may or may not necessarily be fluid for that person, but he or she may not have come out the first couple of times, and [a person's preferred gender] might change if you keep asking."

At Seattle Children's Hospital, clinicians are instructed to ask return patients about their preferred names and pronouns every three to six months, Gridley notes.

"It is a good opportunity for the patient to say things have changed, but it is also just good [for the clinician] to practice asking these questions, even if there isn't a change," she says. "It just opens the door to letting people know they are in an affirming place ... it normalizes people of all gender identities."

Determine Transition Status

Understanding where a transgender patient is in their personal transition also is pertinent from a clinical standpoint, Ehrenfeld notes.

"There are some unique healthcare concerns of transgender people, and they often are driven by where someone is with respect to their transition," he says. "For example, many transgender people take hormones to affirm their gender identity, but not all, so it is important to understand if someone is taking hormones, what the side effects are, and how they can be used or not used safely."

This is of particular concern, given the barriers many transgender patients experience when they attempt to obtain hormones. Some resort to purchasing these drugs on the street and may take them in a way that is not safe, Ehrenfeld explains.

"Identifying and understanding what those challenges are and talking to patients about what they are doing so that we can understand how to best help them is critically important," he says.

For instance, Ehrenfeld recalls the case of a transgender woman he encountered after she had suffered a stroke.

"She was taking one of her friend's birth control pills while smoking, so there was a confluence of things that were happening for this particular patient that led her to suffer a stroke and come to the hospital," he says. "She did very well, and we actually were able to get her plugged into care, and we helped her understand how we could assist her in accessing hormones for her identity and how to [take those drugs] in a safe way."

Implement Patient Support Systems

With the establishment of a "Trans Buddy" navigator program, Vanderbilt also has taken a big step toward easing the anxiety and fear that keep many transgender patients from seeking quality care when they have an urgent or emergent need.

> EHRENFELD SENSES THAT INSTANCES OF BLANKET DISCRIMINATION AGAINST TRANSGENDER PATIENTS HAVE DECLINED IN THE HEALTHCARE ARENA, BUT HE OBSERVES THERE STILL IS UNCERTAINTY AMONG PROVIDERS.

"We started it [18 months ago], because we recognized that there continues to be friction points when transgender patients come in and out of our healthcare system, whether it is a routine office visit, a visit to the ED, or some other acute care episode," Ehrenfeld says. "We have a trained peer advocate who is credentialed through our hospital volunteer services. They go through a day-and-a-half long training program, and then they are credentialed as a Trans Buddy volunteer."

These volunteers are available any time of the day or night to assist transgender patients who need added support or guidance. The patient determines what level of assistance he or she needs, Ehrenfeld explains.

"If the patient wants the 'Buddy' to be there in the waiting room and hang out, that is fine. If the patient wants the 'Buddy' to accompany them all the way through the visit and during the provider encounter, they will do that. If they are in the ED and they just need someone to help them navigate through what is going on with a difficult situation, they will come into the hospital and be with the patient," he says. "The program has been very successful, but the single place where we get the most requests from patients for services is from the ED."

Reinforce Training, Education

Most EDs will not see a transgender patient every day, so it is important for hospital and departmental leaders to create mechanisms for continued education, training, and awareness around gender identity issues, Ehrenfeld recommends.

"Having opportunities where people can discuss these issues, express their concerns, and understand where the knowledge gaps are is important," he says. "That has to happen across the entire department. It can't just be the physicians and nurse practitioners. It has to include the support staff, techs, and registration clerks because we are a team. Patients don't just see a piece of the team, they experience their interactions with the entire team."

Further, leaders must continu-

ally reinforce and refine training to reflect new evidence.

"Our knowledge is changing, and our understanding of what best practices are is a moving target because the data have been so poor for so long," Ehrenfeld says. "Data capture has been less than ideal around documenting transgender identity in health records."

Ehrenfeld senses that instances of blanket discrimination against transgender patients have declined in the healthcare arena, but he observes that there still is uncertainty among providers.

"People are just afraid of the unknown. They don't want to make a mistake, and whenever we are encountered with something that is unique or difficult, it just makes people anxious," he says. "The ED is unique because we have such stress in our baseline work environment that when we have this additional uncertainty of not knowing how to address the patient or what to write in the chart or exactly what to do, those things lead to most of the problems that we see rather than a fundamental lack of desire to take care of people."

Review Policies, Forms

Ehrenfeld's advice to hospital and ED administrators who want to make sure they are providing a gender-affirming environment is to first examine their policies to make sure their departments are inviting for transgender patients.

"Are the forms that you have patients fill out inclusive of gender identity? Most places don't have affirming language when someone is checking them in," he observes. "That is starting to change, but it is an easy place to start because it signals to the patient when they arrive that it is a form that includes them and that they are welcome there."

In fact, even after Vanderbilt made changes to its non-discrimination policies to be more inclusive of gender identity, administrators realized some old language remained in some patient waiting rooms.

HOSPITAL AND ED ADMINISTRATORS WHO WANT TO MAKE SURE THEY ARE PROVIDING A GENDER-AFFIRMING ENVIRONMENT SHOULD FIRST EXAMINE THEIR POLICIES TO MAKE SURE THEIR DEPARTMENTS ARE INVITING FOR TRANSGENDER PATIENTS.

"We weren't visibly displaying [the new policies], so we corrected that, but it was a bit of a misstep," Ehrenfeld admits. "Making sure that you have good policies, and that those policies are displayed so that they are recognized by patients in the community, is a really easy and important first step to making things more welcoming and inclusive."

Also, Ehrenfeld recommends EDs develop referral sources so transgender patients can access primary or specialty care in their communities.

"Understanding in your local community who is an endocrinologist, who is PCP, who is a psychiatrist or psychologist who has the expertise, knowledge, and a willingness to help these patients is an important thing to know before you actually need these referral networks," he says.

Resources for training in LBGTI health are available through the Fenway Institute in Boston (http://bit.ly/293wV0w). Also, Ehrenfeld co-edited a new guide that includes model language, registration forms, and other materials for presenting a welcoming environment to transgender patients: *Lesbian, Gay, Bisexual and Transgender Healthcare: A Clinical Guide to Preventive and Specialist Care* (Springer, 2016). ■

REFERENCE

1. Gridley S, Crouch J, Evans Y, et al. Youth and caregiver perspectives on barriers to gender-affirming health care for transgender youth. *J Adolesc Health* 2016; DOI: http://dx.doi.org/10.1016/j.jadohealth.2016.03.017.

SOURCES

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Magnified Bacteria Powerful Motivator for Hand Hygiene Compliance

Infection prevention specialists report impressive results targeting the intervention to units with lackluster hand hygiene compliance rates

Researchers at Henry Ford Hospital (HFH) in Detroit have discovered that pictures can be powerful motivators when it comes to hand hygiene. Specifically, infection control specialists have found that showing healthcare workers magnified images of bacteria that have been lifted from their own hands and surrounding healthcare environments have the power to boost hand hygiene compliance by anywhere from 22.9% to 142%, based on the results from four units in which researchers tested the intervention.[1] It's an important issue when one considers that poor hand hygiene contributes to healthcare-associated infections, a problem costing hospital systems nearly $10 billion annually, according to some estimates.

"We had been reading all these different articles about different ways to increase hand hygiene, and one of the methods kind of stuck out to us as something we hadn't tried yet," explains **Ashley Gregory**, MLS (ASCP), one of the researchers on this project and an infection prevention specialist in the Henry Ford Health System. "It involved using emotional motivators and, specifically, disgust."

To study the approach, the researchers selected four units with low hand hygiene compliance rates. These included a neurosurgical ICU, two general practice units, and an observation unit, Gregory explains. Then, between July and September 2015, the infection prevention specialists visited each unit 10 times, during which specialists would swab various items as well as employees' hands using an adenosine triphosphate (ATP) meter, a hand-held device that measures living organisms.

"We would hit every unit twice a week, and we did this for about a month," Gregory says. "It became almost like a competition on the units."

Leverage Competitive Instincts

While there was no guarantee that everyone working on one of the selected units would be subject to a hand swab, most eventually participated.

"If we went to a unit and one of the employees had not been tested, one of the other employees would point out what their number was and challenge the employee to see if he or she could beat that result," Gregory explains. "They would point out the employees that had not [been swabbed and tested] yet."

During each unit visit, infection prevention specialists would show unit personnel pictures from a compilation of 12 magnified images of bacteria that had been lifted from the unit. This was to demonstrate what the bacteria would look like under a microscope. It was enough to turn a person's stomach, which proved powerfully motivating, es-

EXECUTIVE SUMMARY

Infection prevention specialists at Henry Ford Hospital in Detroit have found that showing healthcare workers magnified pictures of bacteria found on their hands and in their surrounding units can be a powerful motivator for improved hand hygiene compliance. When tested in four units during a one-month period, the intervention boosted hand hygiene compliance by an average of 24%. Investigators note that to be successful, the intervention must be paired with an effective compliance monitoring program.

- For the study, investigators visited each unit twice per week, during which they would swab various items as well as employees' hands using an adenosine triphosphate (ATP) meter, a hand-held device that measures living organisms.
- During each unit visit, infection prevention specialists would show unit personnel pictures from a compilation of 12 magnified images of bacteria that had been lifted from the unit. This was to demonstrate what the bacteria would look like under a microscope.
- The unsavory pictures produced immediate increases in hand hygiene compliance, and prompted healthcare workers to see who could produce the best ATP meter readings on subsequent infection prevention specialist visits.

sentially showing healthcare workers what they typically can't see.

"When we were on the units, people would wash their hands even without us using an ATP meter on them just because the pictures grossed them out," Gregory notes.

The result was a big boost in hand hygiene compliance, based on observations collected through the hospital's stealth observer program, which involves unidentified observers secretly checking on the hygiene habits of personnel.

"They are noticing whether employees are washing their hands when they should be," Gregory says, noting the average increase in compliance over all the units was 24%.

Employ Positive Reinforcement

It took some time for healthcare workers on the units to embrace the approach.

"It was a little slow to take off because people were hesitant. They would say their hands aren't clean because they haven't had a chance to wash them," Gregory admits.

However, infection prevention specialists would respond that they wanted workers to know how dirty their hands were and what the bacteria might look like, because if something were to happen and they needed to rush to perform care on a patient, healthcare workers needed to know how important it is to wash their hands first, Gregory explains.

While healthcare workers initially were hesitant to participate, no one ever got defensive when confronted with the ATP results from their hands, Gregory observes.

"They might be disgusted or freaked out [by the pictures], but they would often go wash their hands and then ask to be tested again," she says. "We would do that, and then they would be able to see that once they performed hand hygiene the amount of [bacteria] that we were detecting decreased significantly. It was positive reinforcement — hand washing does work, and it does help to get rid of the bacteria."

Monitor Compliance

With the results from the intervention clear in the study results, infection prevention specialists have continued using the approach as a tool, and they are looking into purchasing more ATP meters to further leverage the intervention. For now, the one ATP meter they have is put to use whenever a unit is found to be struggling with hand hygiene.

"It increases hand hygiene almost immediately," Gregory observes.

However, Gregory also notes that to have an effect, hospitals must pair the approach with effective compliance monitoring.

"If someone was not already using a stealth observer program, it would be hard to be able to evaluate whether the intervention is actually working," she explains.

Also, HFH provides continual reminders to staff to always wash their hands before patient encounters. Overall, HFH administrators say the institution has a 70% hand hygiene compliance rate, a much higher rate than what is typical. The CDC estimates healthcare workers practice hand hygiene less than half the time they should. The agency suggests healthcare workers wash their hands as many as 100 times in a 12-hour shift, depending on the number of patient encounters. ■

REFERENCE

1. Gregory A, Chami E, Pietsch J. Emotional motivators: Using visual triggers as an infection control intervention to increase hand hygiene compliance throughout the hospital. *Am J Infect Control* 2016;44: Issue 6, Supplement, P S3.

SOURCE

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CME/CE OBJECTIVES

After completing this activity, participants will be able to:

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

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- Hospitals direct new energy toward preparing for mass shooting events
- Managing headache in the ED
- Improving communications with LEP patients
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CME/CE INSTRUCTIONS

To earn credit for this activity, please follow these instructions:

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2. Scan the QR code to the right, or log on to **AHCMedia.com** and click on My Account. First-time users will have to register on the site using the eight-digit subscriber number printed on their mailing label, invoice, or renewal notice.

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CME/CE QUESTIONS

1. **Orlando Regional Medical Center's ability to mobilize so quickly to the recent mass shooting event stems from:**

   a. the hospital's diligence in regularly performing critical training exercises and drills.
   b. the hospital's experience in dealing with previous mass shootings.
   c. resources that were made available from other hospitals.
   d. all the staff that poured in when they heard about the shooting.

2. **With any real emergency, hospitals will always have an issue with:**

   a. crowd control.
   b. electronic medical records.
   c. staff shortages.
   d. communications.

3. **There are some unique healthcare concerns for transgender patients, which often are driven by:**

   a. past experiences with discrimination.
   b. family history.
   c. where someone is with respect to his or her transition.
   d. economic distress.

4. **The CDC estimates healthcare workers practice hand hygiene:**

   a. less than three-quarters of the time.
   b. less than half the time.
   c. less than one-quarter of the time.
   d. less than 10% of the time.