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What U.S. Healthcare Workers Learned From the Ebola Crisis

With a global pandemic still posing a serious threat to American lives, frontline providers must prepare and drill constantly to protect themselves and the public health

An outbreak of Ebola in the Democratic Republic of the Congo (DRC) in early May has been contained successfully, but some observers wonder what would have happened if an infected individual from the region had traveled to the United States and presented to a community hospital ED. Would this person have been identified quickly and isolated, preventing a repeat of the Ebola crisis that unfolded at Texas Health Presbyterian Hospital in Dallas in 2014?

Patricia Abbott, PhD, RN, BC, FAAN, FACMI, an associate professor at the University of Michigan School of Nursing and a member of the national panel that reviewed the hospital's response to the first case of Ebola to be diagnosed in the United States, is concerned that such a case might get overlooked again.

"I have been immersed in this space and even I missed [the outbreak in the DRC], so what about everyday, front-line healthcare workers, the people in

the ambulances, and the people at the airport?" she asks.

That "situational awareness" still needs improvement, Abbott suggests. "No matter where you live, you should be aware that there has been a flare-up of an incredibly dangerous [infectious disease] in an area of the world," she says. "The issue is how you become aware of it, because we are bombarded with tons of information day in and day out. It is just really hard to do."

On a deeper level, situational awareness involves understanding that there are varying levels of risk in different areas. For example, Abbott points out that Dallas is home to an international airport and one of the largest expat populations of Liberians in the country. "Hindsight is 20/20, but the fact that those things weren't put together [during the 2014 Ebola crisis] speaks to our naiveté as humans," she says.

However, Abbott notes that the 2014 crisis also illustrates the need for an effective mechanism for filtering

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information so that the most important data are disseminated to frontline providers in a focused way. "Everyone needs to have situational awareness, but we have to have more effective ways of creating that situational awareness because humans are humans. They can't process everything," she says.

Further, while hospitals routinely prepare for shootings, natural disasters, and other mass casualty events, there is not enough emphasis or practice focused on scenarios similar to what happened in 2014, Abbott notes. "Even though there was a lot of hoopla about this in the year following the Ebola crisis, I would guarantee that there are probably very few places that are practicing disaster drills in relation to an infectious disease outbreak," she says. "We learned the lesson once, but we forgot it."

Take Advantage of Training

While there remains ample room for improvement, numerous steps have been taken to bolster the nation's defenses against a dangerous infectious disease.

For instance, the Department of Health and Human Services (HHS) has funded the National Ebola Training and Education Center (NETEC), which is led by faculty from Emory University in Atlanta, the University of Nebraska Medical Center in Omaha, and Bellevue Hospital in New York.

The three institutions work together to educate hospitals across the country on how to address infections of high consequence such as Ebola, explains **Marshall Lyon, MD, MMSc**, a professor of medicine at the Emory School of Medicine and a subject matter expert with NETEC.

Additionally, HHS and the CDC have created a network of hospitals across the country designated as "assessment hospitals" for patients suspected of carrying an infectious disease of high consequence, Lyon notes. "Once an assessment has been made on a patient, these hospitals will then transfer the patient either to a state-designated treatment center or, if it is confirmed that a higher level of care is needed, the patient could be transferred to a regional treatment center," he explains. "There are 10 regions designated by HHS, and within each of those regions there is a regional treatment center."

Most states have been working to educate their frontline hospitals about this new arrangement so that if they receive a patient of concern, these healthcare workers can move him or her to an assessment hospital or to a designated treatment center quickly, Lyon shares. However, he acknowledges that community hospitals have to proactively seek the needed training and expertise for their clinical staff.

"What we are trying to do is have the training and information and education all trickle down [throughout the healthcare system]," Lyon explains. "NETEC is the central organization that works mainly with the state treatment centers and regional treatment centers, and then the regional treatment centers are then trying to do some of the education within their region, but hospitals have to want to get this training and education."

Similar to when there is a mass-casualty event involving scores of injured patients, when there is an infectious disease outbreak there must be regional coordination involving multiple hospitals, and this goes well beyond any specific disease outbreak, Lyon observes. "We are

moving beyond Ebola because it is hard to know what the next threat will be,” he says. “It might be MERS [Middle East respiratory syndrome] coronavirus out of the Saudi Arabian Peninsula, or it could be SARS [severe acute respiratory syndrome], or it could be another hemorrhagic fever or pandemic influenza. There are any number of things that could possibly feed into this virus containment system that has been developed.”

Implement ‘Vital Sign Zero’ Concept

The system involving NETEC, assessment hospitals, and designated treatment centers is a robust response to one of the biggest lessons learned during the Ebola crisis of 2014. “Everybody believed that any hospital could handle [Ebola] because you would just use the isolation precaution measures,” Abbott recalls. “We found out the hard way that that wasn’t true.”

As healthcare personnel who were caring for Ebola patients became infected with the disease themselves, it became clear that stronger protective measures were needed. Further, to protect healthcare workers in cases involving the potential for infectious disease, **Kristi Koenig**, MD, FACEP, FIFEM, the EMS director for San Diego County in California and professor emeritus of emergency medicine and public health at the Center for Disaster Medical Sciences at the University of California, Irvine, established the “vital sign zero” concept to illustrate to healthcare workers the importance of first making sure there is no hazard or threat involved before taking the standard vital signs on a patient.¹

“Before we jump in ... we have to ask ourselves is this patient a danger

EXECUTIVE SUMMARY

Although a recent outbreak of Ebola in the Democratic Republic of the Congo has been contained successfully, it is likely that the crisis failed to come to the attention of many frontline providers in the United States. This must change, according to experts, who note that while the country has implemented several improvements to its defenses against an infectious disease outbreak, early recognition is critical.

- Experts say that situational awareness of infectious disease threats needs improvement, and that hospitals must devise ways to filter information so that frontline providers focus on the most important data.
- When a contagious disease is suspected, experts advise frontline staff to use person-to-person communication to ensure that the information is conveyed to colleagues and administrators properly.
- The CDC and the U.S. Department of Health and Human Services have established the National Ebola Training and Education Center to provide guidance to hospitals. They also have created a system of “assessment hospitals” and “designated treatment centers” for patients diagnosed with infectious diseases of high consequence.
- The “vital sign zero” concept instructs frontline providers to ask themselves first whether a patient potentially is contagious, requiring protective measures before taking the standard vital signs and proceeding with other care tasks.

to staff or others in the ED, and do we immediately need to don disease-appropriate protective equipment and isolate the person — if it involves someone with symptoms we would isolate — before touching them and taking their pulse and measuring their blood pressure,” Koenig asks. “Ebola is highly infectious once the person has symptoms, and it can be transmitted by touching that person and being exposed to their bodily fluids.”

Koenig stresses that emergency clinicians tend not to think first about the risk of contagion because they want to jump in and take care of people. However, she observes that the “vital sign zero” concept may be more in line with the thinking of prehospital providers. “Every prehospital provider knows you don’t go into the scene until you are sure it is safe, whether the situation involves gunshots or some sort of chemical

exposure. It is a concept that is pretty well built in,” she says. “But in the ED, where [clinicians] are used to having open doors with people coming in, this can be an issue if a patient has a disease that is contagious from person to person, and could be a threat to the public health and others in the ED.”

For cases in which a patient is potentially contagious, Koenig also developed what she calls the 3-I tool, which stands for identify, isolate, and inform. Originally developed for Ebola, the tool has been adapted for measles, Zika, and other infectious diseases. In fact, Koenig is developing an adaptation of the tool for hepatitis A.²

Under the 3-I construct, once a healthcare provider has identified that a patient potentially is contagious, the next step is to appropriately isolate the patient. “You have to look at

the disease characteristics, so if it is something contagious from person to person, then how is it transmitted? Is it something that can be transmitted prior to symptom onset?” Koenig asks. “Usually, people will have symptoms when they come to the ED, but they might say they were exposed to measles, for example.”

Once a provider is highly suspicious that the patient carries a serious infectious disease, the next step is to inform both the hospital’s infection control department and public health authorities. “You have to know how to do that, even during the off hours,” Koenig stresses.

One of the problems that came to light during the 2014 Ebola crisis was that key clinical information was not always conveyed in a consistent and reliable way, and there was too much reliance on electronic communications. This is one of the areas that NETEC faculty members address during their training.

“We encourage person-to-person communication to make sure a message is not lost within the system,” Lyon says. “We also encourage health systems to empower their frontline people, meaning the receptionists and registration staff and triage nurses, to immediately notify and engage the system because you don’t want someone with Ebola sitting in your waiting room for a while,” Lyon explains. “Then, you would have more cases.”

Abbott echoes these sentiments, adding that communications are even more challenging when hospitals need to communicate with each other because electronic medical record (EMR) systems have a long way to go before they are interoperable. This is true even for hospital systems that use the same EMR technology because every hospital employs different fixes and features in their customization of the software. As a result, information

is not necessarily shared seamlessly, even within a single hospital system, she says. “The communications piece is huge. It is not just that people don’t talk to one another, it is that the systems don’t talk to one another,” Abbott notes.

Follow the Science

Another issue that added to the confusion during the 2014 crisis was that it was clear that both healthcare providers and local authorities seemed unclear about who was responsible for managing the situation. “I think there was an expectation that the CDC was going to come in and essentially take over the entirety of patient care,” Lyon recalls. “That is not the mission of the CDC, to take care of patients, and yet that was the expectation of many people on the ground in Dallas.”

Koenig notes that while it is always difficult to be the first hospital or community to have to deal with one of these highly contagious infectious diseases, there is no getting around the fact that these dangerous pathogens first present at the local level. “In the United States, the way the emergency management system is organized ... generally, the local authorities would be in charge,” she explains. “There are some exceptions when there is a homeland security threat, but, generally, local authorities would be in charge, and only when local resources are exceeded would they go to the state for help, and only when state resources are exceeded would they request federal assistance.”

Koenig notes that this alignment of jurisdiction was very well communicated during the 2009 swine flu pandemic. “It was made very clear that local authorities needed to have some level of preparedness and

ability to manage the situation and the initial aftermath,” she explains, although Koenig acknowledges that this approach has not always been enforced at the federal level.

One problem that emerged in 2014 was agencies and state governments were following different approaches to address precisely when healthcare workers returning from Ebola-affected areas in Africa should be quarantined. In fact, many of these approaches did not follow the science, Koenig observes. “It doesn’t make scientific sense to quarantine asymptomatic healthcare workers because they are not contagious,” she explains. “Different states interpreted this differently, and I think there is still confusion on that particular piece of [the infectious disease response.]”

Even the military made a high-profile decision to quarantine personnel who had been working in West Africa to help with the crisis. “They were placed in quarantine first in West Africa and then again an additional 21 days in Europe before being allowed to come home,” Koenig notes. “That is not evidence-based, but at the same time I have a picture of healthcare workers coming back home from West Africa and hugging the president.”

Koenig notes that given the government does everything possible to protect the president from any kind of risk, it was clear that there was an understanding that these healthcare workers did not pose a risk for transmitting Ebola.

It never helps when an infectious disease response becomes politicized, but Koenig observes that healthcare providers always should be prepared to emphasize the science. “Certainly, you have to deal with the politics, and you have to deal with the perception ... but we really need to push to make things evidence-based,” she stresses. How can emergency medicine leaders

improve the odds that their hospitals will be prepared in the event of an infectious disease emergency similar to what happened in 2014? First, it is important to understand that infectious disease outbreaks are one of the biggest global health threats, Koenig observes. She points to statistics from a report from the National Academies of Science, Engineering, and Medicine released in May that indicate even a moderately severe influenza pandemic could lead to 2 million or more deaths (<http://bit.ly/2qr4tzL>).

“[An infectious disease outbreak] is not as visible as a shooting or a bombing or something like that, so it is more difficult to conceptualize, but it is one of the biggest threats — both in terms of the lives lost and economics — that we are facing, so we really do need to be preparing for it,” Koenig stresses.

Emergency providers should pay close attention to the Health Alert Network (<http://bit.ly/2wXjQnF>) as well as information from their local health departments, Koenig advises. “I know it is really challenging for hospitals that are facing to many day-to-day crises and financial pressures, but if we aren’t aware of what is happening, we can’t be prepared,” she says.

Also, make sure systems are in place to address epidemiological risk factors. For example, Koenig explains if one knows there is an outbreak of Ebola in the Congo, he or she must take a travel history to know if patients have traveled to the region recently.

“We have to be doing this routinely,” she says. “We have done a really good job in the past of mobilizing our strengths and coming together in short order and working with guidance, but when something is not on the radar screen, it tends to fall out of sight, out of mind because we are so busy with our day-to-day

emergencies.” Another step that could be useful in containing infectious disease outbreaks is if EDs got more involved with providing vaccinations, Koenig suggests. She notes that such a step is under consideration in San Diego, where there is an outbreak of hepatitis A. “We give tetanus shots in the ED, so why can’t we give a hepatitis vaccine or other types of vaccine in the ED?” she asks. “It is not a simple matter to set up ED-based vaccination programs, but we know that vaccines are effective in controlling outbreaks, so I think we need to think about EDs playing a greater role in public health and helping with things that will, in fact, protect the public.”

Lyon advises hospital leaders to include an infectious disease scenario in their mandatory emergency preparedness practice exercises. “If you go to our website, we have some exercises that are ready for people to adapt to their own situations,” he explains. Koenig agrees with this advice, noting that it also would be helpful to include the media in such drills. “Work with them up front because they are the experts in communication and getting out messages,” she notes.

Lyon says that NETEC is a resource for hospitals on training and guidance on infectious diseases, much of which can be delivered via telemedicine. In addition, NETEC retains a team of subject matter experts that includes nurses and physicians who can be deployed to help care for a patient until he or she is transferred to a treatment center. “However, all of this depends on recognition [of the infectious disease], which was one of the problems that happened in Dallas in 2014,” he cautions. To improve recognition and response, the subject matter experts at NETEC routinely travel to hospitals to evaluate their preparations and

protocols, and identify where there might be strengths or weaknesses, Lyon adds.

In addition to all the clinical guidance regarding Ebola the CDC offers, it is important for hospital and emergency medicine leaders to understand fully what their obligations are under the Emergency Medical Treatment and Labor Act (EMTALA). HHS has issued a memorandum offering guidance on the requirements and implications of Ebola (<http://go.cms.gov/2wN7nE2>).

HHS also provided a memorandum containing answers to common questions pertaining to Ebola and EMTALA (<http://go.cms.gov/2xHgmD1>). ■

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Hospitals Use Aggressive Tactics to Combat *Clostridium Difficile* Infections

Although there is some evidence that the incidence of such infections finally may be leveling off nationally, one analysis shows that treatment-resistant forms of the infection have risen sharply

Although healthcare providers are sharply attuned to the risks posed by *Clostridium difficile* infection (CDI), the incidence of this type of infection steadily climbed between 2001 and 2012. It's the most common healthcare-associated infection in the United States. While preliminary data from the CDC suggest that the levels of CDI finally may be stabilizing, an increasing number of patients present to the ED with pre-existing CDI. This pushes this threat up the priority list for frontline providers.

"Our data show that more and more *C. diff* is coming from the

community setting, so people are coming to the ED with symptoms already," explains **Vicki Allen**, MSN, RN, CIC, FAPIC, the infection prevention director at CaroMont Regional Medical Center in Gastonia, NC, and chair of the communications committee for the Association for Professionals in Infection Control and Epidemiology. "We do track community onset of *C. diff*, and we see a lot of it coming from clinics. You would think that a lot of these patients would be coming from nursing homes, but we are not seeing that in our community." Allen notes that the problem stems in part

from patients who go to the doctor's office with a viral infection and expect to walk out with a prescription for antibiotics, she says. "Then, they become symptomatic, and come to the ED," she says.

Indeed, the development of CDI usually occurs because of receiving antibiotics for another indication, explains **James Lewis**, MD, MSCE, a professor of gastroenterology and a senior scholar in the Center for Clinical Epidemiology and Biostatistics at the Perelman School of Medicine at the University of Pennsylvania. "For example, people may have been hospitalized, and had surgery, and may have received antibiotics at the time ... or had pneumonia, and received antibiotics, and we think those antibiotics disrupt the normal community of bacteria that live in our intestines and allow *C. diff* to colonize and cause the infection," he says. "Certainly, that can occur in patients who come to the ED from nursing homes, but it can also occur in ambulatory patients as well. Many ambulatory patients are treated with antibiotics, and some patients develop *C. diff* without apparent treatment with antibiotics."

Lewis notes there are other reasons why the normal bacterial community might be disrupted. "A common example would be patients who have other underlying disorders of their intestines, such as ulcerative colitis," he says. "But, more commonly, we see *C. diff* in patients who have been hospitalized and/or have been treated with antibiotics." Of particular concern to frontline providers is the fact that *C.*

EXECUTIVE SUMMARY

Hospital providers see increasing numbers of patients who present to the ED with pre-existing *Clostridium difficile* infections (CDI), prompting the need for increased infection control efforts to prevent transmission. Although isolation and effective sterilization procedures are important, experts note that the biggest weapon in the battle against CDI is an effective antimicrobial stewardship program.

- Experts say that most cases of CDI stem from patients receiving antibiotics for another indication. For instance, some patients receive antibiotics in a doctor's office or clinic setting, develop symptoms of CDI, and then present to the ED.
- Data show that the incidence of CDI climbed steadily between 2001 and 2012, affecting roughly half a million patients and costing the healthcare system an estimated \$5 billion annually.
- While preliminary data from the CDC suggest the number of new CDI cases may be leveling off, cases of multiply resistant forms of the infection (mrCDI) have increased sharply, according to one new analysis. Investigators report the annual incidence of mrCDI increased by nearly 200% between 2001 and 2012.
- Although most cases of CDI can be treated successfully with antibiotics, patients with treatment-resistant strains can suffer from severe disease, and even die from the infection.

difficile is resistant to normal sterilizing procedures and can spread easily in healthcare settings. Older patients are particularly vulnerable to CDI, which can cause diarrhea, severe gut inflammation, and blood infections or sepsis. While antibiotics are used to treat CDI, experts note that vigilance is needed, as the infection will recur in 30% of all cases.

Allen explains that it is important to immediately isolate patients who present with symptoms, such as diarrhea, and are suspected of carrying CDI. “Especially if a physician is ordering a specimen to rule out CDI, then we are assuming there is an infection until we know otherwise,” she explains.

Further, environmental services personnel are alerted to use bleach to clean that room because it will kill *C. difficile* bacteria. “If you are not isolating the patient and that room is not cleaned with bleach, then there is the potential that the pathogen will be still alive in the environment, heightening the opportunity for transmission,” Allen observes.

While all these steps are important, Allen notes that her hospital’s primary weapon in the battle against CDI is antimicrobial stewardship. “The literature says the primary risk factor for developing CDI is related to antibiotic usage,” she notes. “Consequently, the focus is on using the appropriate antibiotic for whatever pathogen [clinicians] are treating, and then using as short a course of antibiotics as possible.”

Allen adds that this is particularly important with respect to elderly patients who present with ailments such as community-onset pneumonia that require treatment. “It is just really important that [clinicians] focus on using the appropriate antibiotics for the duration that is necessary. These patients are already at risk because of

their age and their illness, and so antibiotics pose an additional risk factor,” she observes.

Obtain Leadership Support

Allen’s hospital maintains an antimicrobial committee that collaborates with the clinical staff to disseminate guidance in this area and track antibiotic usage. “Physicians [serving on the committee] will round with the clinical staff, questioning antibiotic usage, and teaching nurses and other bedside caregivers about the importance of appropriate antibiotic use,” Allen explains.

For cases in which a physician has prescribed an antibiotic that is not the best choice according to guidelines, informed nurses can notify the physician to make a change, Allen observes. “Sometimes, people order an empiric therapy before they know the final results of a culture,” she adds.

Education, monitoring, and reporting all are important components in the prevention of CDI, Allen notes. “The other thing we are doing is trying to provide additional resources and education to the consumer, the patients and the clients in the clinics, on the importance of appropriate antibiotic use, not using unnecessary antibiotics, and then reporting symptoms if they do have them,” she says.

To bolster prevention further, Allen explains that hospital infection control staff members monitor infection trends in the community. “If we see certain trends at doctors’ offices or clinics, then we offer to provide education to them,” she says.

To carry out such efforts, it is important to have hospital leaders on board, says Allen. These leaders also can formulate incentives around

appropriate antibiotic use to further motivate the clinical staff to make the issue a priority. “It is a matter of increasing awareness and keeping it up front and on the table,” she says. “We have very good support from our administration, and we also have good cooperation from our physicians. They are very receptive to the message.”

Consider Treatment-resistant Strains

While most patients with CDI recover completely with one or two courses of antibiotics, an analysis by Lewis et al suggests that cases of multiply recurring *C. difficile* infections (mrCDI), the most stubborn cases, are increasing rapidly. In a review of a large, nationwide health insurance database that includes more than 40 million patients, the authors found that the annual incidence of mrCDI increased by nearly 200% between 2001 and 2012. This compares to a 43% increase in the incidence of CDI over the same period.¹

The analysis shows that the patients with mrCDI tended to be older and were more likely to be female than the patients with CDI. Also, the mrCDI patients were more likely to have been exposed to corticosteroids, proton pump inhibitors, and antibiotics before their diagnosis.

“There are several possible reasons [for these findings]. The most worrisome hypothesis is that the nature of *C. diff* is changing, meaning that the strains are changing and becoming more difficult to treat,” Lewis offers. He points to the recent emergence of the North American pulsed-field gel electrophoresis type 1 (NAP1) strain, which has been shown to be a risk factor for mrCDI, as one example. Other possible reasons for these

findings include a change in treatment patterns or the possibility that some patients who present with what appears to be mrCDI may, in fact, suffer from something else, and they are misdiagnosed, Lewis says. “All of these hypotheses need to be explored further, and treatments are needed for patients who have these symptoms,” he adds.

One option that is used increasingly with patients who have experienced multiple recurrences of the infection within a short period is fecal microbiota transplantation (FMT). Clinicians perform this procedure to provide an infusion of beneficial intestinal bacteria into patients to essentially compete with the *C. difficile* bacteria. The goal of the procedure is to help restore a normal population of gut bacteria, which will discourage the development of *C. difficile*. Although the approach is not FDA approved, Lewis notes that FMT is used fairly widely and available within the United States and around the world.

“There are multiple different ways that [this treatment] can be administered, ranging from colonoscopy, which is still probably the most common method, to enemas, upper

endoscopy, to even administration of frozen fecal samples in capsules,” Lewis explains.

However, Lewis stresses that transplanting human feces into other humans is not likely to be the long-term solution to mrCDI. “The hope is that we can get smarter and figure out what bacteria or other microorganisms are essential for the effectiveness of this strategy so that those organisms can be grown in a lab and then put in a vehicle to be administered to patients,” he says.

Lewis notes that a small subset of patients with the most difficult mrCDI cases will go on to experience very severe disease. “Occasionally, people require having their colon removed as a treatment, and people have died as a complication of this,” he says. “Fortunately, that is a small minority, but it can be a fatal disease.”

There is some early evidence suggesting that aggressive antimicrobial stewardship programs and vigilant infection control practices finally may be making a dent in the incidence of CDI. The CDC’s Emerging Infections Program reports that a preliminary analysis of data from 2011-2014 shows a 9-15% decrease in cases of CDI nationally. Although these

data are encouraging, public health officials stress that hospitals must maintain their focus on prevention. The CDC estimates that in 2011, CDI contributed to 29,000 deaths and 500,000 illnesses in the United States. That’s three times the number of deaths and illnesses from CDI that were tallied in 2000. ■

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Education, Training Needed to Combat Human Trafficking

Experts note there is plenty of crossover between the opioid epidemic and what healthcare providers see in terms of trafficking, further complicating rescue

The U.S. Department of Justice estimates that 14,500-17,500 people are trafficked into the country annually, and that does not include the thousands of trafficking cases involving U.S. citizens. Further, the Department of Health and Human Services (HHS) estimates 240,000-

325,000 children are at risk for sexual exploitation annually.

Researchers note that most victims seek medical treatment while they are in captivity, making frontline providers ideally positioned to recognize the plight of these patients and connect them with appropriate help.

However, in too many instances these opportunities slip away, explains **Amber Egyud**, DNP, RN, the chief nursing officer and vice president of patient care services at Forbes Hospital, a level II trauma center in Monroeville, PA, and part of the Allegheny Health Network, a

large health system serving western Pennsylvania. Egyud is the lead author of a new study that outlines a multidisciplinary approach aimed at helping healthcare professionals better recognize when a patient could be a trafficking victim, and how to intervene most effectively.¹

In her own research on the subject, Egyud found that 50-80% of the time, healthcare providers miss the identification of victims of trafficking when they present for medical treatment, and roughly 68% of the time, these patients present to the ED. “We completely miss it,” she explains. This realization is what prompted Egyud to study the issue and determine what kinds of assessments and education could be provided to frontline providers to help them improve in this area. “I knew we weren’t doing anything specific to human trafficking,” she says. “We all do domestic abuse screening, but we really weren’t educating about trafficking in our health network.”

Learn the Signs

Typically, trafficking victims will seek care in the ED because they are unable to work or they have suffered a trauma or been the victim of a violent assault, Egyud notes. “Anything that would prompt them to need medical attention is when we would have the opportunity to intervene,” she says.

However, emergency personnel must be aware of the signs of trafficking. For instance, rape is one of the red flags. Also, these patients may present with sexually transmitted diseases (STDs) or they may report an unusually high number of sexual partners for their age, Egyud observes. “They may have been to multiple hospitals giving different names. They may appear younger than the

EXECUTIVE SUMMARY

Victims of human trafficking often seek medical treatment while they are in captivity, but experts note that too often frontline providers miss the signs that these patients are in trouble as well as the opportunity to intervene. However, with education and training in this area, providers can learn to identify potential victims, approach them in a non-traumatizing way, and link them to appropriate resources.

- Investigators note that 50-80% of the time, healthcare providers miss the identification of victims of human trafficking, and 68% of the time, these patients present to the ED.
- Trafficking victims may have been to multiple hospitals giving different names. They may appear younger than the age they state because they are asked to lie. They may tell a vague or inconsistent story about their injury or history.
- Other red flags include a suicide attempt, a drug overdose, or patients experiencing pseudo seizures, a condition whereby patients will fake uncontrollable seizures as a method of self-preservation.
- Two of the biggest issues that EDs must address if they are going to identify victims of trafficking are substance use and safe housing.

age they state because they are asked to lie. They may have a vague or inconsistent story about their injury or history,” she shares. “What they are saying about their injury may not match [the clinical evaluation].”

Other red flags include a suicide attempt, a drug overdose, or what Egyud refers to as a pseudo seizure. “It’s a condition where people will have fake seizures, uncontrollably, as a method of self-preservation,” she explains. To help clinicians recognize the social signals, Egyud and colleagues incorporated assessment questions, suggested by HHS, into the hospital’s electronic medical record (<http://bit.ly/2wG0jsp>).

For instance, if clinicians suspect that a patient may be in some trouble, they may ask whether there is someone making the patient do something that he or she does not want to do or whether the patient can come and go as he or she pleases, Egyud explains. “Then, we use our clinical judgment for the medical red flags

such as STDs, drug addiction, pseudo seizures, suicide attempts, traumas, and inconsistent injuries or stories,” she says. “We put that all together, and then if there is a suspicion of human trafficking, we have a treatment algorithm where we actually make sure that we separate the person who brought the patient [to the ED], who is often times a pimp or the person who is holding the patient captive.”

Clinicians will follow the treatment algorithm to make sure the patient is medically stable and isolated from danger. “We try not to tip off the handler of the patient because that could become a security issue,” Egyud observes. “We involve security, social services, the local police department, and the [FBI], and then we plan a rescue for the patient in conjunction with local authorities.”

If the patient is younger than 18 years of age, the hospital notifies children and youth services; for older patients, local police help provide a rescue, Egyud adds. However,

Egyud emphasizes that the pathways for treatment and rescue must be established ahead of time and they need to be well-understood by care providers.

“We developed an algorithm for action, and we implemented the education and a screening tool,” Egyud observes. “We developed a treatment algorithm for the ED so that [emergency personnel] can follow the algorithm. Everybody knows their role in the algorithm and what to do.”

Facilitate Disclosure

Embedded within these policies and procedures is a process for what Egyud refers to as silent notification. This is a method that patients can use to notify staff that they are in trouble for cases in which their captors are with them or they are too afraid to voice their predicament.

“Some people can’t tell you what is going on or don’t want to disclose what is going on as far as trafficking because they have been coached that if they tell, they will be the ones who will get arrested for prostitution or for other crimes, and they will have no place to live,” Egyud explains. “They often live in fear that if they disclose what is happening, bad things will happen to them or there will be threats of violence against them or their families.”

To help such individuals communicate what is happening, the team at Forbes Hospital developed a process whereby if the staff suspects that a patient may be a victim of trafficking or any kind of abuse, the patient will be directed to use a patient-only restroom, where there is a sign telling patients to place a blue sticker on their urine specimen cup if they are in an unsafe situation or they need help. “If the patient puts a blue sticker on

the cup, then we know that even if he or she can’t verbalize [the threat] or the handler won’t leave the patient alone long enough to verbalize, then they can just hand in the urine specimen with the blue dot on it and we know the patient needs rescue,” Egyud shares.

During a five-month period, investigators tracked the effect of the education, screening, and rescue protocols implemented in the ED. Clinicians identified 38 potential victims, with about 20% accepting rescue from their abusive environment. One of the identified patients was a trafficking victim, while the others were victims of other types of violence, Egyud explains. Among the ED personnel who participated in the project, 75% indicated that the education and training improved their competence level in recognizing trafficking victims.

One frustrating reality when dealing with this issue is that it often takes multiple encounters before a victim is ready for rescue, Egyud notes. “If the patient is over 18, there is nothing we can do unless the patient asks for help or is willing to disclose [that he or she is a trafficking victim],” she says. “We have identified people who were at risk for trafficking or even said they were trafficked, but they weren’t ready for rescue. They screened as potential victims, but declined intervention.”

Nevertheless, staff members have encountered few roadblocks while implementing these procedures. “We have sustained the program since its implementation in February 2016, so we are about 18 months into it,” Egyud shares. “We continue to have our screening tool available, we continue to do education at various points throughout the year, and our network hospitals have also almost all implemented [the program] in their

facilities as well.” Although some health systems are taking steps to focus more attention on human trafficking, awareness among healthcare providers remains low, according to **Wendy Macias-Konstantopoulos**, MD, MPH, an attending physician in the ED at Massachusetts General Hospital (MGH) in Boston, and medical director of the hospital’s Human Trafficking Initiative, which launched in 2008. “There are groups across the country that are trying to increase the level of awareness and do some educational training for healthcare providers who are seeing patients in settings like EDs, but I think it is still an ongoing challenge that needs to be addressed,” she says.

Helping victims is complicated by the fact that so many of them are unwilling to self-identify, Macias-Konstantopoulos observes. “One of their main jobs when they come in is to not be identified [as a trafficking victim] for fear that they will be exposed to more physical harm by the trafficker,” she says. “Traffickers often coach victims and teach them to lie about their age or about their identity, and if they are being labor trafficked and they are in the United States without proper documentation, they may be even more frightened about the possibility of being identified and turned in to the authorities.”

Recognizing the signs that a patient may be a trafficking victim, and learning how to approach the individual, requires significant training, Macias-Konstantopoulos notes. “You need to [talk to them] in a way that is not re-traumatizing, and then if they do disclose, you need to know what the next steps are,” she explains. “In the same manner that we would be trained around how to react and respond to a family with children who might be experiencing child abuse or an elderly person who might be

experiencing elder abuse, we need to learn how to respond to human trafficking.” There is a lot of crossover between the opioid epidemic and what healthcare providers see in trafficking patterns, Macias-Konstantopoulos notes. “If you have a patient who has been exposed to substances and has become addicted, and their trafficker is their supplier ... that can go way beyond anything the patient has control over,” she says. “These [patients] would rather be exposed again to the emotional and physical harm than bear the pain of the withdrawal that they are experiencing.”

Another issue that can be particularly difficult to tackle is finding safe housing for trafficking victims. “I think it is one of the most scarce and yet important resources needed for combatting trafficking and being able to assist these victims,” Macias-Konstantopoulos offers. “A shelter is not always the best place for these patients because many of them have been victimized or trafficked out of a shelter, so going back to a shelter is very traumatizing, and if that has been their experience, most of the time they would prefer to stay on the street.”

Safe housing and substance use treatment are key issues that emergency personnel should consider ahead of time if they are going to start identifying trafficking victims, Macias-Konstantopoulos stresses. “You have to be ready to respond to those resources,” she says.

Assemble Resources

The Human Trafficking Initiative at MGH is a center for research in this area, and it also provides education and training to hospitals on how to recognize and interact with trafficking victims who present to healthcare settings. In addition, the initiative

has established the MGH Freedom Clinic, which is dedicated to providing long-term primary and mental healthcare to the victims and survivors of trafficking. “We see patients who are 13 years old and older who have had various experiences with trafficking,” Macias-Konstantopoulos says. “We also have case management to work with them to figure out what their social needs are ... and they are referred to community resources to make sure they are connected in a way that will be productive and help them to reintegrate in a safe manner into society.”

For more information about the Human Trafficking Initiative, visit: <http://bit.ly/29ahO85>. Another resource for healthcare providers interested in establishing programs or initiatives to address the issue is the Project to End Human Trafficking (<http://bit.ly/2xJDef>). ■

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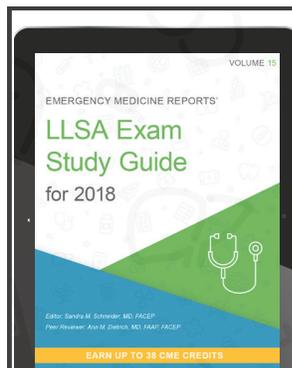
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CME/CE QUESTIONS

1. Similar to when there is a mass casualty event involving scores of injured patients, when there is an infectious disease outbreak there must be:
 - a. regional coordination involving multiple hospitals.
 - b. an all-hands-on-deck response.
 - c. one person put in charge of the emergency response.
 - d. clinicians with specialized training on the front lines.
2. Before taking incoming patients' vital signs, the "vital sign zero" concept instructs healthcare providers to first:
 - a. don protective equipment.
 - b. alert infection control.
 - c. ask themselves whether the patient is a danger to staff or others in the ED.
 - d. contact the local health department.
3. The development of *Clostridium difficile* infection usually occurs because of:
 - a. ineffective handwashing.
 - b. poor sterilization procedures.
 - c. having received antibiotics for another indication.
 - d. None of the above
4. What are the two key issues emergency personnel should be ready to address if they are going to start identifying trafficking victims in the ED?
 - a. Mental healthcare and case management
 - b. Food assistance and education
 - c. Primary care and transportation
 - d. Substance use treatment and safe housing



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Bundled Approach to Handoff Communication Delivers Significant Safety Dividends

Users note that the I-PASS handoff bundle offers structure for communications as well as guidance on implementation, feedback, and sustainability

With an estimated 80% of the most serious medical errors linked to communication failures, handoff processes are a rich target for improvement. There are numerous tools designed to help providers remember to convey the most important information when transitioning a patient to another provider, but one approach in particular has demonstrated in multiple studies that it can reduce medical errors and preventable adverse events substantially.

Called the I-PASS bundle, the approach originally was devised for use in pediatric hospitals, but it has been adapted and modified since for use in many different types of hospital units, including both pediatric and adult EDs. In fact, such efforts have been so successful and widespread that the I-PASS Study Group has been awarded this year's John M. Eisenberg Award, an honor bestowed annually by The Joint Commission to recognize national-level innovation in improving patient safety and quality.

The moniker "I-PASS" stands for: illness severity, patient summary, action list, situation awareness and contingency planning, and synthesis by receiver. However, the bundle includes several other elements, too, including a handoff document, training, faculty observations and feedback, faculty development, and an awareness campaign.

Although the approach has delivered impressive results, reducing handoff-related errors by as much as 30%, proponents acknowledge that reaping such gains requires considerable effort and ongoing commitment.

Christopher Landrigan, MD, MPH, the research director of inpatient pediatrics at Boston Children's Hospital, the principal investigator for numerous I-PASS

studies, and a co-founder of the I-PASS Institute, a group formed to help guide institutions interested in implementing the I-PASS approach, explains that while the tool was developed and used in children's hospitals first, there are themes that carry across all healthcare settings.

"There are some common principles in structuring and organizing handoffs," he explains. "The reason we started at Boston Children's Hospital is because that is where I am, and it is a place where, from my own clinical experience, I could see there was a problem, and we began to try to design a solution."

In fact, initially in 2008, I-PASS was just a resident physician initiative that focused specifically on change-of-shift transitions as residents began to work shorter shifts, resulting in more handoffs, Landrigan says. "When we put the I-PASS bundle into effect, there was a very substantial reduction in medical errors," he observes.¹ "And that initial

WITH AN ESTIMATED 80% OF THE MOST SERIOUS MEDICAL ERRORS LINKED TO COMMUNICATION FAILURES, HANDOFF PROCESSES ARE A RICH TARGET FOR IMPROVEMENT.

effort served as a foundation for the multi-center I-PASS study where we were in nine children's hospitals, and again focused primarily on that transition between residents and interns at the change of shift."²

Beginning in 2010, the study group began to make adaptations to the bundle for nurses, finding that they could achieve similar levels of improvement in the quality of communication during transitions.

"Since 2013, we have really been focused on wide-scale dissemination across different settings, including internal medicine services, the ED, surgical perioperative handoffs, and all kinds of transitions involving doctors and nurses," Landrigan observes. "This includes transitions within services at change of shift as well as between services when patients are moving around in the hospital."

The I-PASS bundle has continued to deliver good results. For instance, Landrigan notes that one study nearing completion involves 32

hospitals that have begun to adapt the bundle for different settings. "We are seeing similar results to what we saw in the original I-PASS studies where we saw reductions in both medical errors and injuries due to medical errors," he says.

Prioritize Training, Feedback

Landrigan acknowledges that there are all kinds of mnemonic-based tools published in the literature that provide reasonable organizational frameworks for the information that needs to be conveyed in a handoff.

"What makes the I-PASS bundle unique is that it is not just about the mnemonic," he says. "We have bundled together a training program for residents and later for nurses and others, with discrete changes to the handoff process." For instance, there is a written handoff tool that is

integrated into the electronic medical record (EMR), and investigators have expended considerable effort thinking through how hospital administrators can achieve the cultural changes needed to sustain the I-PASS approach, Landrigan explains.

"A critical piece of this is workplace-based learning and assessment so that when clinicians are using this, they are getting feedback on what they are doing and constant reinforcement on what a good handoff looks like," he says. "That requires really building a core of faculty that can provide this feedback."

Further, when making modifications to the I-PASS bundle, individual units have to account for how it is going to integrate with their EMR systems as well as the workflow of physicians and nurses. "It has to be something that is easy for them to use, and ideally is sitting on the same [EMR] system or is accessible from that system so that it feels natural for them," Landrigan notes. Working with IT specialists, hospitals often can arrange for the electronic handoff form that is part of the I-PASS bundle to be populated automatically with information that exists elsewhere in the EMR, which saves time and effort, Landrigan says.

In fact, Landrigan relates that investigators have taken pains to accurately measure the time required to use the I-PASS bundle when transitioning patients, and they have found that it does not add any time at all to the process.

"It does lead to some reorganization in the way that handoffs are handled ... but in the aggregate, it does not add any time," he says.

For the past several months, **Catherine Perron, MD**, the director of physician quality assurance and compliance in the department of

EXECUTIVE SUMMARY

The I-PASS handoff bundle originally was implemented for residents in children's hospitals. Now, others are adapting it for use by physicians and nurses in many different hospital units, including the ED. The approach has been shown to reduce handoff-related medical errors by as much as 30%, although users note that successful implementation of the approach requires resources and rigorous reinforcement.

- I-PASS stands for: illness severity, patient summary, action list, situation awareness and contingency planning, and synthesis by receiver. However, the bundle includes several other elements, such as a handoff document, training, faculty observations and feedback, faculty development, and an awareness campaign.
- A critical piece of the bundle is workplace-based learning and assessment so that when clinicians use I-PASS, they receive feedback on what they are doing along with constant reinforcement.
- Emergency providers interested in adopting I-PASS should consider modifications that take into account the time pressures of the ED as well as workflow, according to users of the approach.

emergency medicine at Boston Children's Hospital, has been focused on implementing I-PASS in the ED after an earlier attempt failed.

"We had an experience back in 2011 where we did a lot of I-PASS training because the hospital was promoting it, but it went still in the water because we never backed it up with any real-time observation," she explains.

This time, Perron has made implementation of the approach a top priority, first modifying aspects of the I-PASS bundle so that they integrate well within the emergency setting. For example, she developed her own I-PASS training videos, using patients more representative of those treated in the ED.

"We quickly created five or six patient [examples] so that when we went to do training, it looked like an ED sign out and not an [inpatient] floor sign out," she explains.

Perron explains that she turned to the most vocal naysayers in the department to prepare video examples of both poor handoffs and good handoffs, using the I-PASS approach. This helped to get buy-in of the concept from some of the most resistant staff, she explains. The videos then were sent to all the staff so they could see examples of how the approach works with typical emergency patients.

Another modification of the I-PASS approach involved the written handoff tool because while handoff documents for inpatients often involve hefty documents, the ED sees a wide variety of patients, some of whom require very little documentation.

"We as a group troubleshooted what we were going to do about the written handoffs and we left that fairly loose," she explains. "We provided people with a template

they could use in our charting area, but we didn't actually require people to use a certain template for the handoff. That was probably our quickest modification."

Identify Champions

With the kickoff for the implementation slated for Jan. 1, 2017, Perron spent much of the fall leading up to that date holding workshops and focus groups and identifying I-PASS champions who would conduct observations and provide feedback to staff once the rollout began.

"We made a plan to get to every provider with two observations, so all attending physicians and nurses, which for us was about 300 observations," Perron notes. "We were going to do that within six months. We were going to be a presence in the department so that people felt like their behavior was being reinforced, and if we got to everybody, people would reinforce each other."

The department also launched a marketing campaign so that the I-PASS method was reinforced constantly as a priority.

"The amount of information that providers got — I am sure they are seeing I-PASS in their dreams," Perron notes. "There was signage, emails, staff meetings, safety stories — this has been a constant presence."

Prior to the I-PASS rollout, administrators collected data showing that the department would handle a handoff-related safety issue every two to three days. That was the baseline, Perron observes.

"Our intent was to reduce our handoff-related safety events by at least 20% at the six months mark following the start of the initiative,"

she explains. "We just ran our numbers; we are down by roughly 30% in handoff-related and reported safety events."

Going forward, Perron is hopeful that with other units in the hospital also implementing I-PASS, there will be added reinforcement to keep the practice in place. "We have already started to notice that if you call [another unit that is using I-PASS], you don't have to prompt them to synthesize," she explains. "They will actually say 'let me synthesize back to you,'" she says.

Certainly, implementing I-PASS is a big lift, and you have to keep at it, Perron shares.

"You really have to have a multidisciplinary group take this on and make it happen," she adds. "What we learned a few years ago is you can train everybody, but if you don't reinforce the behavior, you can't make it stick."

Consider Time Pressures

Intrigued with the potential and the published results of the I-PASS approach, **James Heilman, MD**, medical director of the transfer center, telemedicine, and continuous quality improvement for the department of emergency medicine at Oregon Health & Science University (OHSU) Hospital in Portland, led the effort to study, modify, and implement the I-PASS bundle in the ED.³

"We started investigating and did focus groups [on the I-PASS approach] in the fall of 2014," he explains. "The major modification we made was to the patient summary ... because it is a lot different in the ED than in an inpatient setting." The main issue is time, Heilman observes. "On the inpatient side,

often times there are more things to follow up, but they are not as time-sensitive,” he says. “There may be multiple consultants managing a lot of different things over a longer period of time, whereas in the ED it is a matter of managing fewer things, but in a much more condensed time period.”

To accommodate for this difference, the patient summary must be brief and to the point, Heilman observes.

“It has to be tailored to how much work the oncoming team is going to have to do with that patient,” he says. “It is a challenge with emergency medicine handoffs because of the time pressures that we have. It takes experience to be able to know when you need to talk more or less, so the I-PASS tool helps with this, but it doesn’t solve all the problems.”

Before adopting the I-PASS bundle, the ED used the standard SBAR (situation, background, assessment, recommendation) mnemonic, but the department did not have a standardized EMR template.

“It was loosely used by people to organize their handoff, and that was helpful, but I think the advantage of I-PASS is that it has ‘illness severity’ first,” Heilman notes. “Having that at the beginning is helpful because it really cues the oncoming team if there is someone that they need to worry about ... if you are receiving someone who is unstable, then you are going to want to know more information.”

With the SBAR, the stability of the patient is not always communicated, says Heilman, so being prompted to identify whether the patient is stable or unstable helps because it cues the oncoming team to any high-risk patients up front. “It is surprising how [illness severity]

can get missed sometimes with handoffs because there are so many other details,” he adds.

Upfront Investments

The OHSU team also modified the instructions for the second “S” in I-PASS, which stands for synthesize. “In the ED, it is different from an inpatient ward where clinicians have more time to be able to repeat everything back, so we modified it for the ED,” he explains.

Instead, this synthesis is shortened to one sentence on each patient. “It achieves the same thing. It is still a synthesis by the receiver,” Heilman notes. “It is not the whole presentation back, but rather a one-liner so everyone is on the same page.”

It is tough to quantify the effect the I-PASS bundle has made on the ED because other changes were integrated at the same time, observes Heilman, but he believes it has made a difference.

“I think the important thing is to have a standardized process and a standardized tool to help guide that process,” he says. “Having a standardized EMR template was critical ... and it was important to the way our work flows here.”

Also key to the successful adoption of the approach was empowering residents to take a leadership role in driving the implementation.

“Different academic programs have different ways that they do sign outs and handoffs. Ours is resident-directed, so having them buy into the idea ... and getting them interested in it was important to our culture here,” Heilman notes.

The I-PASS bundle offers structure to the handoff process as well as to the process for implementing the

approach, but putting in the required resources and time is important, Heilman observes.

“Putting the investment up front solves a lot of problems downstream,” he says. “It is a way your department can demonstrate that you are staying up with the current times and the safety literature.” ■

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