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INSIDE



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# APIC 2018: A Call to Action for Infection Preventionists

*To protect patients, get certified, 'ask for what you need'*

*By Gary Evans, Medical Writer*

Infection preventionists (IPs) were called to action recently in Minneapolis at the annual conference of the Association for Professionals in Infection Control and Epidemiology (APIC). A keynote speaker who suffered a devastating healthcare infection urged IPs to stand their ground and protect patients.

"I want you to know that patients want you to take the lead," former patient **Alicia Cole** said to roughly 5,000 IPs at the 2018 APIC conference. "You are the experts. Stand your ground. Stand up for patients, because now more than ever patients need you."

> "WELL, I'M ONE OF THE LUCKY ONES. I SURVIVED A HOSPITAL-ACQUIRED INFECTION. THAT'S WHY THE WORK THAT YOU DO IS EXTREMELY IMPORTANT TO ME."

Speaking at the same opening session, APIC President **Janet Haas**, PhD, RN, CIC, FSHEA, FAPIC, said IPs, as longstanding patient safety advocates, are poised to take leadership roles in healthcare, but first they must demonstrate objective competency through professional certification.

"I believe that infection prevention is at a crossroads, and we as APIC members have an opportunity to determine our future if we identify it and prepare for it now," she said. "Patient safety is at the very center of everything we do as IPs."

An actress and national patient



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safety advocate, Cole described her horrific experience with a postsurgical healthcare-associated infection (HAI) that caused necrotizing fasciitis.

The flesh-eating condition almost led to the amputation of her leg and has required multiple surgeries over a period of years.

## Lucky One?

"We know that the CDC estimates that 75,000 patients a year will die of HAIs," Cole told APIC attendees.

"Well, I'm one of the lucky ones. I survived a hospital-acquired infection. That's why the work that you do is extremely important to me in becoming an advocate to help make a change and improve the system," she said.

Cole often played doctors or nurses in television acting prior to a 2006 routine surgery that would prove to be life-changing.

Showing some clips of her television shows, Cole said, "I may not be a doctor, but I played one on TV."

She became a patient in real life when she was told she had to have two noncancerous uterine fibroid tumors removed.

Cole went on an exercise program to speed her recovery and told her parents there was no need to travel to Los Angeles for what she thought would be a routine procedure. They came to the hospital anyway, making a decision that would prove critical to help their daughter through the ordeal that was about to ensue.

"What I didn't know is that 2 million patients a year develop HAIs after coming in for something else," Cole said.

Soon after the procedure, she spiked a fever and felt discomfort, but was told it was probably a reaction to the anesthesia."After the next day or two I still didn't get better," she said. "I said to my doctor, 'Is this normal?'"

In what became a recurrent theme of reassurance, she was told it would pass even as the pain and swelling increased and she became nauseous, Cole said.

When a nurse was changing her surgical wound dressing, her mother noticed a black spot on her abdomen. When the dressing was next changed, it became clear that Cole had an aggressive infection.

"The black spot was gone, and in its place was a quarter-size pustule like a blister," she told APIC attendees.

## 'Your Daughter Is Very Sick'

Cole did not name the hospital nor the clinicians involved, but said a nurse told her parents confidentially to ask for an infectious disease specialist.

According to Cole, the nurse told them, "I have to talk to you in confidence because I could lose my job. Your daughter is very sick. This doctor is a bit of a cowboy, and he doesn't want to hear from anybody. But if you as a family request an infectious disease specialist, they have to get you one."

The ID consult was performed, and Cole was diagnosed with multiple infection problems that occurred during her surgery.

"Finally, I was diagnosed with sepsis, *Pseudomonas*, MRSA, VRE, and necrotizing fasciitis," she said, adding that the combination

of pain and seeing the graphic destruction of her tissue caused her considerable fear.

"I can't explain to you in words what it does to your mind," Cole said. "They finally took me back to surgery and started cutting away."

After discharge, care continued for years, and the misery of the unhealed wound was compounded by recurrent swelling and boils, sometimes on her face.

"I had an open wound for three years," she said. "It had to be packed twice a day. I had home healthcare nurses for a year and a half. I went to a wound care center for five and a half years."

## A Story That Resonates

Cole began blogging about her experience as the ordeal continued, first using only a talk-to-type program. With the help of a wound care specialist, she managed to eventually heal without secondary infections.

As her blog posts resonated with other patients and infection control advocates, Cole was asked to share her story at meetings and conferences.

Becoming a leading voice in patient safety, Cole lobbied for passage of California legislation requiring healthcare workers who work with patients to undergo infection prevention training, and mandating that hospital infection rates are made publicly available.

She continues that advocacy, now more than a decade beyond her initial surgery, urging IPs at APIC and elsewhere to use her story as inspiration for patient safety.

"As an infection preventionist, as a nurse, as a team member, stand up for your patients," Cole said. "Speak up and help them. Take the lead and help your patients understand what's going on. Give them the diagnosis" if they have an HAI, she said.

IPs must be patient "champions" but they cannot do it alone, she said. "Patient safety is no accident — it is strategic," she said. "Everyone is a part of the infection prevention team."

## Time to Get Certified

Indeed, healthcare-associated infections are more broadly understood by patients and the public, and accordingly IPs are emerging from the early days of crunching HAI rate data in silos.

With patient safety at the forefront of healthcare quality improvement and regulatory initiatives, IPs are well-positioned to take the lead and speak up to prevent infections, Haas said.

"We have to be recognized as the experts and leaders in our facilities," Haas said.

"To do this we have to have a high level of competence — to be the go-to people for our facilities, our colleagues, our patients, and our colleagues in public health."

As part of this, APIC is pushing professional certification in infection control (CIC), even lobbying states to require it.

"It's time to rally around certification," she said. "Certification is the best objective way to show your competence to the wider world. It shows your commitment to your patients and to your profession."

Thus armed, IPs should bring their expertise to bear on decisions that affect patient safety. This means taking a "seat at the table" with the key clinicians and administrators at your facility, Haas emphasized.

"It might be more comfortable to take a back seat," she said. "But I'm here to tell you if you are not at the table — you are not at the table. And if you are not at the table, you are not an advocate for infection prevention that could save patient lives."

To growing applause, Haas said, "This doesn't take an advanced degree — it just takes some courage. So, make the commitment right here, right now, to do this. Are you with me?"

The renewed challenge fits well with a profession that has "a long history of getting things done," she said.

Clinical care is collaborative, and infection prevention as a critical component of that warrants commensurate resources and support, Haas added.

"You must be prepared to ask for what you need," she said.

"Prepare, practice, and present like your patients depend on it — because they do."

With the broad demographic changes occurring in nursing-dominated professions, it is important to support and inspire others coming into infection prevention.

"Let someone know you have confidence in them," Haas said. "Help them with an abstract or a first paper. No man is an island, and no IP is an island. When we are alone our challenges can be overwhelming. To reach our desired [goals] as infection preventionists, we need to work together." ■

# What Joint Commission Surveyors Are Citing on Infection Control

*IP gets dinged under new SAFER survey method*

Feeling prepared for a Joint Commission accreditation survey after receiving only one deficiency in an inspection three years prior, an IP was "devastated" when her hospital was written up for four lapses in infection control practices.

"The main theme from my last survey was that if you think you have a process nailed down and standardized — check again," said **Michelle Heine**, BS, MT(ASCP), CIC, manager of infection prevention at UnityPoint Health–Allen Hospital in Waterloo, IA.

Heine shared her survey findings recently in Minneapolis at the 2018 Association for Professionals in Infection Control and Epidemiology conference.

The lone IP at a 204-bed hospital with multiple affiliated clinics, Heine described her June 2017 survey experience in the hope that it would help other infection preventionists prepare.

"Many of you may be wondering why am I standing up here speaking about surveys when I had four deficiencies," she said.

"We are not up here pretending to be experts. We are here to share our experiences so you can all learn from them. I was devastated to see the final report and see four deficiencies."

The survey was conducted using The Joint Commission's (TJC's) new Survey Analysis for Evaluating Risk (SAFER) Matrix, which became effective in January 2017. *(See the sidebar on page 89.)* Noting that prior inspections may not cite something unless it was a recurrent problem, Heine said under the SAFER approach "they report every deficiency they see, even if they just see it once."

Under CMS Condition of Participation 482.51 for surgical services, accreditation surveyors cited Heine's hospital for hinged instruments, such as scissors and forceps, being sterilized in the closed positon.

"In three of five peel packs checked, it was observed that the hinged instruments were wrapped and sterilized in a closed and locked manner, thus preventing full sterilization of the closed portions," TJC reported. "The organization uses AAMI [Association for the Advancement of Medical Instrumentation] standards. AAMI standard 8.4.1 states that the individual instrument should be sterilized in an open and unlocked manner."

The instruments were not intentionally closed, but became so because there was no tab or barrier keeping them open, Heine explained, showing the products purchased to ensure hinged instruments remain open during processing.

"Our corrective action was that we had to pull every peel pack in every tray to open it up to make sure that the hinged instruments were sterilized appropriately," she said.

Some were fairly easy to block open with stops or tabs, but "if you go through and look at your hinged instruments — there are a lot of them that aren't just scissors. That was a big process," she added.

Surveyors also cited the hospital after observing that soiled instruments used during circumcision were rinsed in the only sink located in the procedure room. The sink was also used for hand hygiene.

"We have a process," Heine said. "All they have to do is take the dirty, sometimes bloody, scissors they use for the circumcision and put them in the recycle tray. It's right there. The surveyor talked to one staff member who liked to rinse them off to make sure they were clean before putting them in the recycle bin."

The corrective action involved reiterating the proper practice to staff and putting signs on sinks indicating they are for hand hygiene only.

"We reminded staff that you do not need to rinse off instruments being sent for recycling," she said.

In another cited deficiency, surveyors reported that two nurses in the obstetrics triage area were putting used speculums back into their peel packs and placing them in the sink until patients left the room.

"AAMI standards require precleaning begin at the point of use and sinks used for soiled instrument processing not be used for handwashing," TJC reported.

This again called for follow-up training, Heine said, noting that "no one ever mentioned to me that they walk a dirty speculum from one end of the unit to the other in the peel pack."

The findings underscored the importance of additional education and conducting rounds to observe staff practices, she said. "If I would have opened the cabinets and seen peel packs with speculums, I would have asked questions — that's why rounding is so important."

## Unannounced Rounds

A colleague from another facility in the same healthcare group joined Heine in the session, describing the rounding process she uses to prepare for accreditation surveys.

A critical initial step in this is "putting your oxygen mask on first," meaning that the infection prevention team fully understands the accreditation standards and is prepared to discuss them with staff, said **Angel Mueller**, MPH, CIC, FAPIC, manager of infection prevention at UnityPoint Health at Trinity in Rock Island, IL.

"We have to understand the supporting evidence — the best practices and guidelines that support the standards," she said. "That way we can work with everyone else and explain it to them as well."

This approach lends credibility to the process while enhancing collaboration and reinforcing the message that infection control responsibility extends to all staff. Another message driven home is that these measures are not taken just to comply with TJC, but also because they protect patients and healthcare workers, Mueller said.

"I see it as my personal role to educate our leaders and everyone throughout our organization to understand why we do this," she said. "It's not just because The Joint Commission says so."

The key to being prepared when accreditation surveyors walk into your facility is a process of "continuous readiness," she added. This process includes unscheduled multidisciplinary rounds by members of the hospital's accreditation team.

"It is really an ongoing best practice to make sure that all of these safety initiatives are being carried out throughout our organization," she said. "We like to see what is really going on in the unit. People don't have a week to prepare and know we are coming at 1 o'clock."

The team has delegated environment of care rounds to individual unit managers, focusing instead on asking questions to staff on the floor.

"We actually ask staff to walk us through when and how they do hand hygiene," Mueller said. "That is a big focus area for The Joint Commission, so we wanted staff to get comfortable speaking about how they carry out this process. It allows your team to find gaps in the process, and it also helps frontline staff to become comfortable in speaking to surveyors."

Other questions during rounds ask about educating MRSA patients, for example, about isolation practices. Staff may be asked about the contact times for cleaning products, or what process they follow to send instruments used at the bedside to central services, she said. ■

## What Is the SAFER Accreditation Survey?

*A new approach for Joint Commission inspections*

Infection preventionists should be aware that The Joint Commission (TJC) is using a new accreditation process called the Survey Analysis for Evaluating Risk (SAFER).[1]

According to TJC, SAFER will help organizations "see areas of noncompliance at an aggregate level." The new system "replaces the previous scoring methodology, which was based on predetermined categorizations of elements of performance (such as direct and indirect impact)."

Furthermore, with SAFER, surveyors can "perform real-time, on-site evaluations of deficiencies." Findings will be placed on a matrix "according to the likelihood of the issue to cause harm to patients, staff, or visitors, according to how widespread the problem is, based on the surveyor's observations."

TJC says that "performance expectations for determining if a standard is in compliance are included in [SAFER's] elements of performance (EPs). If an EP is determined to be out of compliance, it will be cited as a Requirement for Improvement (RFI)."

Another important element involves accountability. "All observations of noncompliance will be documented within the SAFER matrix and will require follow-up activity based on surveyors' observations," TJC says. "All cited deficiencies will be assigned a single time frame of 60 days for corrective action. For deficiencies of a higher risk level in the matrix, additional information … will be required regarding sustainment of corrective actions." ■

### REFERENCE

1. Joint Commission. Facts about the SAFER™ matrix scoring process. April 20, 2017. Available at: https://bit.ly/2zhtDYq.

# Measles Outbreak 101: IP Shares Lessons Learned

*Minneapolis hospital had 745 exposed patients*

Measles raises a host of challenges for infection preventionists, whether they are responding to a single case or a community outbreak. These include difficulty identifying cases, figuring out if susceptible patients were exposed, checking immunity of healthcare workers, and determining if post-exposure prophylaxis (PEP) or measles, mumps, and rubella (MMR) vaccine should be given.

Once declared eradicated in the U.S., measles is still causing outbreaks in many parts of the world and may show up at any given U.S. hospital in a traveler or a child whose parents did not have him or her immunized.

The latter was the case last year in Minnesota, where measles erupted in an unvaccinated and undervaccinated population of Somali children. Antivaccine groups were peddling the debunked connection between MMR receipt and autism, leading to a decline in MMR immunization among the younger children, says **Patricia Stinchfield**, MS, RN, CPNP, infectious disease nurse practitioner and senior director of infection control at Children's Minnesota in Minneapolis.

"We really realized the impact of the antivaccine groups when we looked at our vaccine records and saw the oldest kids were vaccinated, the middle kids had one MMR, and the youngest kids had no MMR — but every other [childhood vaccine]," she told *Hospital Infection Control & Prevention* at the recent Association for Professionals in Infection Control and Epidemiology (APIC) conference in Minneapolis. "There are some antivaccine groups in Minnesota. They met with the Somali imams and basically told them to tell their mosque members that MMR causes autism. That myth and the fear took hold."

The outbreak resulted in 75 cases, one of which was a healthcare worker with a history of measles vaccination, said **Julie LeBlanc**, MPH, CIC, healthcare epidemiologist at Children's Minnesota, at the APIC conference.

The transmission occurred at the beginning of an outbreak when an emergency department nurse with documented receipt of two doses of MMR was exposed to two undiagnosed measles cases.

Another reported hospital-acquired case of measles was the mother of an infant who came in for treatment unrelated to measles. Again, the exposure occurred in the emergency department before clinicians were aware that a measles outbreak had begun in the community.

Both hospital-acquired cases resulted in mild illness, but added to the chaos as the hospital responded to the outbreak.

The hospital policy is that healthcare workers have evidence of measles immunity on hire. However, as measles vaccination is not 100% effective, the policy calls for healthcare workers to wear respirators when treating known or suspect measles cases.

"You wear an N95 — if you are medically cleared and have done the fit-testing — or wear a PAPR [powered air purifying respirator]," LeBlanc said. "Once we knew we had measles, staff really understood their role in identifying any potential suspect case and getting airborne precautions implemented. We had good compliance."

## Severe Infections

Children's Minnesota hospital was besieged by the outbreak, ultimately caring for 52 (70%) of the total of 75 total cases in the community.

"Forty-one of those were tested in our facility, and there were an additional 11 tested elsewhere that subsequently came to us for care," LeBlanc said. "Twenty-one of the cases in the outbreak were admitted, and all those admissions were at Children's Minnesota."

Measles may be dismissed by some as minor childhood illness, but these resurgent outbreaks have been marked by some severe infections. One measles patient had a 17-day length of stay in the Minneapolis outbreak. The average length of stay was four days, with a minimum of two days.

The severe measles cases were one of the primary reasons there was a frantic effort to identify exposures and administer PEP or vaccine after the outbreak began, she said, showing a picture of a child from an earlier measles outbreak (used with parental permission).

"This is a patient from our 2011 outbreak that was in our ICU, on a ventilator for 15 days," LeBlanc said. "This little boy was fortunate and survived, but this is why we

work so hard. We want to prevent this from happening to any other child."

## Sprint or Marathon?

LeBlanc traced the beginning of the outbreak as it unfolded at her hospital, beginning with a two-year-old child who presented at the ED. The child had a four-day history of fever, a rash that started the day prior, and cough and congestion. There was no travel history reported, and vaccination record showed the receipt of only one MMR. The patient had been diagnosed with otitis media five days prior and started on amoxicillin.

"The hospitalist admitting this patient thought that the rash was associated with administration of amoxicillin," she said. "However, measles entered their mind and they ordered a test. Sure enough, it was measles."

Now the clock was ticking, she emphasized. The patient presented on April 9, and the test was ordered and the positive measles confirmed on April 11.

"The first thing is to figure out the patient's contagious period of time in which they can transmit measles," LeBlanc told fellow IPs in the APIC audience. "It starts with rash onset, and this patient's rash onset was the 8th. So the contagious period was four days before [rash], and four days after."

The next question is when did the patient go into airborne precautions, which for this case was on April 10 when the test was ordered.

"The patient was not in airborne precautions on the 9th, so we needed to assess exposures for that day," LeBlanc said.

# Using PEP or MMR Vaccine for Measles Exposure

During a large community outbreak of measles last year, infection preventionists at Children's Minnesota Hospital in Minneapolis worked with the state health department to deliver post-exposure prophylaxis (PEP) to 138 (80%) of 173 people who were defined as PEP-eligible.

"PEP can be given to people who are exposed and susceptible — so this is those who don't have immunity," said **Julie LeBlanc**, MPH, CIC, healthcare epidemiologist at Children's Minnesota, at the 2018 Association for Professionals in Infection Control and Epidemiology conference in Minneapolis.

"The unfortunate part is that the window of time to give that PEP is really limited. So when you have a confirmed case, the clock is ticking and you need to really promptly assess for exposures, identify who needs PEP, and then it's go time."

During the outbreak, PEP or MMR vaccine was administered to asymptomatic susceptible people exposed to a confirmed measles case in the hospital or community according to the following risk categories and guidelines[1].

- **Infant less than 6 months old**
  - Less than 72 hours: Give intramuscular immune globulin (IGIM[2]) 0.5 mL/kg[3]
  - 72 hours through day 6: Give IGIM[2]
- **Infant age 6 through 11 months**
  - Less than 72 hours: Give IGIM[2] or MMR vaccine
  - 72 hours through day 6: Give IGIM[2]
- **Susceptible pregnant woman**
  - Less than 72 hours: Give intravenous immune globulin (IGIV[2]): 400 mg/kg
  - 72 hours through day 6: Give IGIV[2]
- **Severely immunocompromised**
  - Less than 72 hours: Give IGIV[2]
  - More than 72 hours: Give IGIV[2]
- **Close contact over 1 year old**
  - Less than 72 hours: Give MMR vaccine if no contraindications.
  - 72 hours through day 6: Give IGIM[2] if less than 66 lbs. IGIV[2] may be considered in susceptible close contacts 66 pounds or more. However, priority for IGIV should be given to susceptible pregnant women and severely immunocompromised contacts, as IGIV is expensive and difficult to administer. ■

### REFERENCE

1. Minnesota Department of Health. Measles Post-Exposure Prophylaxis (PEP) for Non-Symptomatic Susceptible Contacts: https://bit.ly/2u7o4WY.

Looking back on the patient history, LeBlanc and colleagues noticed a problem. The measles patient had actually been in the hospital ED earlier, on April 4 and 6.

"At those visits they were appropriately under contact and droplet precautions based on upper respiratory symptoms, but nobody was thinking measles at that time," she said.

Depending on when susceptible people were exposed to a case of confirmed measles — and the risk factors of those exposed — there are options to use the vaccine or immune globulin PEP. *(See sidebar, page 91.)*

LeBlanc and colleagues quickly began looking at those exposed to the index case, getting ready to "sprint" to deliver PEP, when they received some more unwelcome news.

"We found out that the patient in the room next door — who had been there for four days with no airborne precautions — was being tested for measles," she said.

Complicating matters, the mother of this new patient said her child had a playmate at day care with suspected measles.

"You might be thinking, wow, how did you guys miss the measles on both of these kids?" LeBlanc said. "Neither of them had international travel. They both had symptoms that were very similar to other illnesses. And they both had amoxicillin, which could explain their rash. People with measles are not walking in with a sign over their head."

In any case, the stakes rose considerably with two confirmed cases in the hospital and the involvement of a day care center in the community.

"We knew we had an outbreak brewing," she said. "We needed to get ready for a marathon instead of a sprint."

## Outbreak Response

At this point, the hospital began rolling out a response plan for an outbreak in the community, where the public health department was now sounding the alarm.

"These are really the same principles, whether you are responding to one case or an outbreak," LeBlanc said. "As soon as measles enters the mind as a differential diagnosis, infection prevention needs to know about it."

The hospital developed triage and testing criteria, emphasizing the use of PCR tests with quick turnaround times. "We don't want people ordering serology because it is not the right test for active disease," she said.

"For about six weeks, we were testing for new cases almost every day," LeBlanc said. "In total, there were 234 tested and ruled out. Overall, there were about 15% that actually had measles. The point being, again, that a lot of kids have fever and rash, and measles can look like a lot of other childhood illnesses."

As testing was done, infection prevention notified the health department, initiating exposure follow-up for the positive cases. Measles is highly transmissible by the airborne route, meaning many patients in the vicinity of known cases may have been exposed.

"You need to know where the patient was — what departments and rooms were they in?" she said. "Then the time they were there, and when did they leave. Who else was in the same area at the same time?"

The hospital electronic medical records were used to track down answers to these questions, enabling LeBlanc and colleagues to identify discharged patients exposed to known measles cases.

"Now you have your list of who's exposed, and you need to prioritize them," she said. "The main element for prioritization is immune status. You want to prioritize people who you know are not immune to measles."

## Calling Patients

Using state vaccination records to prioritize immune status, the hospital developed a script to make phone calls to those with no history of vaccination. Those who received at least one dose were contacted by mail.

"Ideally, you would make a phone call to everyone," LeBlanc said. "In our outbreak, with such large numbers, that just wasn't feasible."

LeBlanc and colleagues worked with the IT department to establish a call bank with a designated line for call-backs. The patients contacted were told about their possible measles exposure, their immune status was verified, and questions were asked about the immune status of their contacts.

"Let them know what to do next, where they need to go, and be ready to address challenges like lack of transportation by providing people taxi vouchers to get to your facility," she said. "Access to interpreters is essential, both to translate the letters and to interpret phone calls."

Patients who refused follow-up or could not be reached were referred to the health department.

"This is really about figuring out who can help you," she said. "We had some nurses from our quality

and safety department that were able to help with calls. The relationships that you build in your day-to-day job as an IP are really going to help you in a time-sensitive situation like this."

As people returned to the hospital for evaluation and possible PEP, LeBlanc and colleagues shunted them away from the ED.

"We set it up in a primary care clinic, but there were still problems with that," she said.

"You have the people coming in for PEP because they might have measles. You have people coming in to get vaccinated because there is an outbreak and everybody wants the MMR vaccine," she explained. "And then all of the regular patients that you see every day coming in for non-measles-related reasons."

In total, the hospital had 745 total exposed patients. There were 489 letters sent out and hundreds of phone calls made.

"There were 173 people who were PEP eligible," she said. "We were able to successfully reach 138 and give them PEP."

Ramped-up triage measures included masking symptomatic patients and setting up temporary airborne precaution rooms using portable HEPA filters.

"The majority of our exposures occurred in the time frame before we knew we had measles in the community," she said. "There were a couple of little spikes, which were learning opportunities. We did real-time process improvements, like the masking on entry. As the outbreak went on and we refined our interventions, we were able to successfully identify and care for confirmed cases of measles without any exposure to other patients." ■

# Challenges Remain to Reduce *C. diff*, CAUTIs, and MRSA

*But dramatic decline in CLABSIs greatest IP success story*

The epidemiology of a leading healthcare-associated infection (HAI) is changing. *Clostridium difficile*, which kills some 15,000 patients annually, is becoming more of a threat in the community as hard-fought progress is made in hospitals.

According to the Centers for Disease Control and Prevention (CDC), national *C. diff* infection rates declined 7% from 2015 to 2016.

Yet, while healthcare-associated cases are declining, more *C. diff* cases are coming in from the community. Some suspect that hospitals are doing more testing on admission to ensure that patients who come in with *C. diff* are not later counted as hospital-acquired. Although that protects the hospital from financial penalties, a concern is that highly sensitive tests may be picking up mere *C. diff* colonization, which may then be counted as community-associated cases of actual infections.

Although these factors probably are affecting the shift in numbers, the primary driver of the increase in *C. diff* in the community likely is antibiotic use beyond the hospital, a leading CDC epidemiologist said recently in Minneapolis at the 2018 Association for Professionals in Infection Control and Epidemiology conference.

"I think it's real," **Arjun Srinivasan**, MD, FSHEA, FAPIC, told *Hospital Infection Control & Prevention*. "Clearly, there are some people who get tested without clear symptoms — they only have diarrhea — but the concern is that the outpatient cases we are seeing probably reflect antibiotic use. We know that there is a lot of fluoroquinolone use in outpatient settings — an antibiotic that is one of the highest risks for *C. diff*."

It is well-known that broad-spectrum antibiotics can disrupt the gut microbiome and set up a *C. diff* infection. That suggests that these community-onset cases, which have no recent history of hospitalization, received antibiotics after visiting a doctor, dental office, or clinic. Another factor that may be contributing to the trend is that antibiotic stewardship programs are being heavily emphasized in hospitals, but may still be in more rudimentary stages in community care.

In presenting a session on *C. diff* and other hospital infections, Srinivasan cited data collected by 10 CDC Emerging Infections Program (EIP) sites nationally.

"We are actually seeing decreases in healthcare-associated *C. diff*, but we are seeing increases in cases of *C. diff* that have community onset," he told APIC attendees. "This is a really important distinction that we are seeing."

Indeed, data from the EIP sites show that the healthcare-associated *C. diff* rate per 100,000 people fell from 93 cases in 2012 to 83 cases in 2015. Conversely, community-associated *C. diff* by that same population measure went from 53 cases per 100,000 in 2012 to 66 cases in 2015.

Improved antibiotic use through stewardship is likely the most important issue for both hospital and community-onset cases.

"That is probably the biggest bang for our buck," he said. "There are studies that suggest that there is only so much we are going to be able to do with improved environmental cleaning. That remains very important, but the biggest yield is likely to come from efforts in improving antibiotic use."

There also is a need for diagnostic stewardship, not only to prevent unnecessary testing for *C. diff*, but to improve urine culturing practices, he said.

"More often than not, those cases of asymptomatic bacteriuria that are diagnosed get treated with a quinolone," Srinivasan said.

With 2015 as the baseline, the CDC and public health partners are trying to reduce *C. diff* 30% by 2020. The changing epidemiology of the infection may complicate that, and other targeted infections are proving difficult as well.

## MRSA and CAUTIs

For example, the 2020 goal is a 30% reduction in catheter-associated urinary tract infections (CAUTIs). Methicillin-resistant *Staphylococcus aureus* (MRSA) infections — both invasive and facility-onset — are targeted for a 50% reduction.

The MRSA goal is looking unreachable, Srinivasan said.

"We are seeing modest progress in preventing hospital-onset MRSA bacteremia," he said. "A 6% reduction from 2015 to 2016. It's not zero, but certainly not enough to make a 50% reduction over five years."

That has raised the question of alternative strategies, both antibiotic stewardship efforts and considerations of decolonizing patients. "Should we be doing decolonization in select patients at the time of discharge in order to reduce the risks of post-discharge MRSA bacteremias?" he said.

CAUTI reductions are somewhat more encouraging, though surveillance has been complicated by a definition change in 2015. At the suggestion of infection preventionists, the CDC removed yeasts as a cause of CAUTI infections.

"We changed the CAUTI definition because you educated us that we could do a better job with the definitions, so keep that up," he told APIC attendees. "These are good definitional changes because it helps focus the surveillance on the infections we think can be prevented, and frankly are the ones that are actually infections."

The CDC is seeing encouraging drops in urinary catheter use, which has been a major emphasis for prevention. "Much of our focus has been to get the catheters out," Srinivasan said.

Of course, removing catheters is more problematic in the ICU, where little patient mobility is expected. "There was some progress in ICUs, but we saw substantially more progress in ward locations," he said.

The CDC is trying to expand diagnostic stewardship efforts to eliminate catheter-associated asymptomatic bacteriuria masquerading as CAUTIs, he said.

"If the culture is not sent, then there is not a CAUTI," Srinivasan said. "We really need to help people understand appropriate sending of urine cultures, especially in nursing home settings."

## Success Story

The ongoing struggle to reduce *C. diff*, CAUTIs, and MRSA infection is in sharp contrast to the dramatic reduction in central line-associated bloodstream infections (CLABSIs). With significant reductions in the last few years, and the CDC on target for a 50% reduction by 2020, CLABSIs are "the greatest success story" in the modern infection prevention era, he said.

"I don't think it's debatable," he said. "Success with CLABSIs fundamentally changed the way we talk about HAIs. A decade ago the dogma was that some of these infections might be preventable if you really worked hard at it, but not that many of them."

However, with the realization that a simple checklist to standardize catheter insertion could prevent many infections, the notion of inevitable infections was finally debunked. The paradigm shifted to many, if not most, HAIs are preventable. "Some people are saying almost all of these infections are preventable," he said.

In addition, because it was the clinical staff changing practice to prevent CLABSIs, the success reinforced the notion that infection prevention is the broader responsibility of all staff. Infection control is now more frequently seen as the job of frontline providers with support from IPs and healthcare epidemiologists.

"This has obviously not happened everywhere, but we are beginning to see this shift," he said.

"The CLABSI work was led by clinical teams in ICUs with support from infection prevention. It really shifted that model to it is the job of frontline providers to prevent infections," he added.

The success in reducing these bloodstream infections emboldened the Centers for Medicare & Medicaid Services to demand reductions in other HAIs, increasing the use of public reporting and pay-for-performance incentives to reduce infections.

"All that we do now, I would argue, was built on the foundation that CLABSI [reductions] established," Srinivasan said. "We have seen success,

but we are not exactly where we want to be."

There still are individual unit locations — in fact, entire hospitals — followed in CDC surveillance that have CLABSI rates twice the national average, he said.

"What is keeping them from seeing the same success that we see in so many other places?" he said. "We have seen success in so many different types of hospitals. We can no longer say they must have sicker patients or more complex cases." Some question remains whether the success of preventing CLABSIs in the ICU can be duplicated on hospital wards.

"It is encouraging that in 2015 to 2016 we did see more aggressive prevention in wards," he said. "Over 50% of CLABSIs now occur in ward locations. That wasn't always the case."

Understandably, most of the reductions in CLABSIs have been related to proper central catheter insertion, which has been the focus of the well-known checklist of aseptic technique. "We've seen *Staph aureus* and MRSA drop dramatically," he said.

"We have not seen as many reductions in infections caused by gram-negatives or *Candida* — things that wouldn't necessarily be influenced by putting in the catheter better. Those are likely catheter maintenance issues."

This corresponds to infection prevention beyond the ICU as well, as catheter maintenance is more of an issue in ward patients, he said. ■

# WHO: Ebola Outbreak in Congo Appears Contained

*Two fatal infections in healthcare workers*

As of July 1, 2018, the Ebola outbreak in the Democratic Republic of Congo appeared to be ebbing, but infection preventionists should still be wary of cases related to travel. There have been 53 cases, with 38 confirmed and 15 probable, in Congo. The 29 deaths due to Ebola, which include two healthcare workers, translate to a mortality rate of 55%.

"There is a possibility that a person who has been exposed to Ebola virus and developed symptoms may board a commercial flight or other mode of transport, without informing the transport company of his/her status," the World Health Organization (WHO) warned.[1]

The incubation period for Ebola is between 2 to 21 days.

"U.S. healthcare facilities should continue to seek travel histories as a routine part of initial patient triage and assessment," says **Kate Fowlie**, a spokeswoman for the Centers for Disease Control and Prevention (CDC). "In the context of the current outbreak, travel to the Ebola-affected health zones in [Congo] or contact with an individual with confirmed Ebola within the previous 21 days should trigger further symptom evaluation."

Now is a good time for facilities to review their status as frontline, assessment, or treatment centers, and confirm that current health department contact information is readily available, she adds. The CDC recommends a strategy of "Identify, Isolate, and Inform," which calls for immediately isolating suspected Ebola cases and alerting the facility's infection preventionist and the health department.

For PPE, CDC recommends following the CDC guidance[2] for U.S. healthcare settings that was developed during the 2014-2015 outbreak. Some 11,000 people — including one in the U.S. — died during that outbreak, which also involved the Zaire strain of the Ebola virus.

## Experimental Vaccine

In addition to the two fatal infections, three other healthcare workers have acquired Ebola during the outbreak. Though they were one of the targeted groups, it was not known at press time whether the healthcare workers who acquired Ebola had received the experimental vaccine that has been implemented on an emergency-use basis.

Since vaccinations began on May 21 through June 30, a total of 3,330 people had been vaccinated in Congo. The vaccine, called rVSV-ZEBOV, was found to be highly protective against the virus in a trial conducted by the WHO in Guinea in 2015. The vaccine has not been licensed by the FDA yet, and there is no recommendation for pre-exposure vaccination of U.S. healthcare workers.

The vaccine consists of an animal vesicular stomatitis virus seeded with the protein of Zaire Ebola, which provokes a human immune response to the Ebola virus.

In a "ring" vaccination approach, contacts with an Ebola case include those living in the same household or those who were visited by the patient in the three weeks prior to diagnosis.

Further, "contacts of contacts," including neighbors or extended family members, may also be vaccinated.

"The ring is not necessarily a contiguous geographic area but captures a social network of individuals and locations that may include dwellings or workplaces further afield, where the index patient spent time while symptomatic, or the households of individuals who had contact with the patient during the illness or after his or her death," the WHO stated. "Experience suggests that each ring may be composed of an average of 150 persons."

The current outbreak in Congo began on April 4, 2018. No Ebola cases were being treated in the U.S. as this report was filed, but the CDC has deployed eight experts to the region to assist in the outbreak.

Although the risk to most travelers is low, visitors to Congo should avoid contact with blood or body fluids, funeral or burial rituals that require handling a dead body, raw bush meat, and wild animals. The 2014 outbreak was thought to have begun with a child who was playing in a hollow tree full of bats, which can asymptomatically carry the virus. ■

## REFERENCE

1. WHO. Ebola Virus Disease. Democratic Republic of Congo. July 3, 2018: https://bit.ly/2NzlEcu.
2. CDC. Ebola Virus. PPE. https://bit.ly/2tHkUIW.

## CME/CE QUESTIONS

1. **According to APIC President Janet Haas, PhD, RN, CIC, FSHEA, FAPIC, which of the following should be emphasized for IPs to demonstrate objective competency?**
   a. Publishing more research
   b. Learning the psychology of human behavior
   c. Finally agreeing on the same standards for all institutions
   d. Professional certification in infection control

2. **Joint Commission accreditation surveyors cited a hospital under surgical sterilization because hinged instruments were:**
   a. left open
   b. closed
   c. being flash sterilized
   d. reused without processing

3. **Angel Mueller, MPH, CIC, FAPIC, said her "continuous readiness" approach to accreditation includes survey inspections of individual hospital units with only 24-hour notice.**
   a. True
   b. False

4. **Julie LeBlanc, MPH, CIC, emphasized that measles can be a severe disease, citing the longest length of stay of a patient in a 2017 outbreak as how many days?**
   a. 9
   b. 13
   c. 17
   d. 21