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INSIDE

RELIAS MEDIA

Measles Outbreaks Put EDs, Other Frontline Providers on Heightened Alert

Authorities lament preventable outbreaks, shift focus to protecting vulnerable populations

Measles, a disease thought to be eliminated in the United States as recently as 2000, is popping up across the country, driven in large measure by people who are reluctant to vaccinate themselves or their children against the virus. Public health authorities report they have confirmed more cases of measles in just the first two months of 2019 than they confirmed in all of 2017.

The CDC's preliminary data reveal that as of March 21, there had been 314 individual cases of measles reported in 15 states in 2019. In areas that have reported especially high numbers, the CDC attributes that to "communities with pockets of unvaccinated people" and "an increase in the number of travelers who get measles abroad and bring it into the U.S." *(Editor's Note: For more data about the measles outbreak, which the CDC updates weekly, visit: https://bit.ly/1hR3aN8.)* The challenge for hospitals and EDs is the fact that measles is a highly virulent disease. Consequently, if a patient presents to an ED with the illness, the chances are high that other patients or visitors in the vicinity who are susceptible to measles will contract the illness. This means emergency personnel and other frontline providers not only need to recognize a disease that they might never have seen before, but also should be ready with precautions if a patient with a suspected case presents. Further, practitioners need to stay in close contact with appropriate public health authorities so that steps can be taken quickly to limit subsequent exposures.

Establish Procedures

As of March 27, there have been 214 confirmed cases of measles in Brooklyn and Queens, NY, since October 2018. EDs in the region are on heightened alert for any signs of the telltale rash and fever associated

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with the disease. *(Editor's Note: The New York City Department of Public Health and Mental Hygiene maintains its own database about measles outbreaks, along with plenty of other useful resources on this topic, all of which are available at: https://on.nyc.gov/2G5njWS.)*

"Even if there is only a relatively low or moderate suspicion for possible measles, we want to get [the patient] out of the general population as quickly as possible in case we have patients otherwise in the ED who are potentially susceptible to this illness," explains **Eitan Dickman**, MD, the vice chair in the department of emergency medicine at Maimonides Medical Center in Brooklyn. "There is an outbreak in the local community, staff is aware, and that is why we are attuned to these patients and getting them into isolation quickly."

Indeed, just before Dickman spoke with *ED Management* on March 18, a woman with suspected measles presented to the ED. "She was noted in triage to have a fever as well as a rash ... the physician working in triage was quickly alerted to the case. The patient was rapidly moved into our isolation room so that we can do further testing," he says.

The patient was an adult female and a member of the Orthodox Jewish community, which has experienced a high number of measles cases during the current outbreak. Most of these cases have involved children who have not been vaccinated against the disease. In this case, the woman indicated that she thought she had been vaccinated, but was not sure, Dickman explains. "In an abundance of caution, we did take the extra step of putting her in an isolation area."

Since October, the ED at Maimonides has seen seven confirmed cases of measles. Some cases have involved patients who were exposed to the disease because of travel to other areas where measles is prevalent; others have contracted the illness from living in close quarters with people who have the disease. However, for many clinicians, this outbreak has been their first encounter with a measles case.

"Especially among the younger staff members, many of them have never seen a case of measles. We have done education, and we talk about it routinely at staff meetings," Dickman shares. "We spend a lot of time [talking about] recognition of the classic appearance of the rash as well as recognizing that sometimes people may have the illness before the appearance of the rash."

To make sure any cases of suspected measles are identified quickly, triage nurses ask patients routinely about whether they have a rash and check for fever. "Any time the triage nurse sees a patient with a rash and fever, that is an immediate indication to go get the attending physician to come and evaluate the patient," Dickman notes. "Even an isolated rash [prompts triage nurses] to call over the attending physician to rapidly assess the patient."

Throughout the outbreak, the hospital has been in contact with public health authorities, Dickman explains. "We interact with them any time there is a suspected case ... and they are very involved with the testing of the patient and then the follow-up coordination," he says. "We are working very closely with the department of health to make sure that anyone who has been potentially exposed receives the necessary treatment."

The hospital also works internally to make sure any people potentially exposed to the virus receive proper notification and care. For instance, in the case of the woman who had just presented to the ED with suspected measles, the next step involves confirming whether the patient has measles. "If testing is positive, then we will see if anyone needs to be notified about that exposure," Dickman adds.

Employ Precautions

As part of employment at Maimonides Medical Center, staff members undergo blood tests to ensure their blood contains antibodies to measles, indicating that they have been vaccinated or have had measles already, making them immune to the disease. However, when the outbreak became apparent in the local community last year, the hospital double-checked the immune status of staff.

"I am not sure anyone required a booster shot, but the plan was if anyone did, they would be offered [the shot] through employee health," Dickman says.

While measles is a rare occurrence, Dickman's advice to other EDs is to review with staff how the disease typically presents and what procedures to follow in the event the disease is suspected in a patient.

"It is warranted to have some education for both the nursing staff and physicians on the appearance of the rash, the typical symptoms, and how the rash progresses from the head down to the rest of the body," he says. "Provide all those things as a brief reminder to help refresh in people's minds the idea that this is a very serious illness with potentially serious ramifications."

EXECUTIVE SUMMARY

Measles was declared all but finished as recently as 2000. However, the disease has re-emerged in the wake of declines in the number of people receiving vaccinations against it. As of late March, 268 cases had been confirmed in the United States this year, with the largest outbreaks of the virus occurring in Clark County, WA, and Brooklyn, NY, mostly among children who have not been vaccinated. The disease is a significant concern for EDs because of the highly contagious nature of measles.

- As of mid-March, the CDC reported several hundred cases of measles had been confirmed in more than a dozen states so far this year.
- Since the current outbreak of measles began in October 2018, more than 200 cases have been confirmed in two New York City burroughs. In the state of Washington, more than 70 cases of measles have been confirmed since Jan. 1, with all but one case centralized to a single county.
- The ED at PeaceHealth Southwest Medical Center in Vancouver, WA, is asking patients who think they may have measles to call ahead before coming to the ED, and then to wait in their cars when they arrive. A provider will assess the patient at his or her vehicle.
- Providers are most concerned about the potential exposure of measles to vulnerable populations, including children younger than age 5, immune-compromised patients, and pregnant women who have not been vaccinated.

Further, clinicians must understand that any patient who comes in with a rash and fever should be immediately evaluated by a physician for the characteristic signs of measles. "In addition, especially if a physician is not immediately available, place the patient in isolation until a further determination is made as to the etiology of the rash," Dickman offers.

While most people will recover from a case of measles, some become very sick from the illness, Dickman adds. "One of the key things that stands out about measles is that up to 90% of people who are susceptible to the disease will become infected if they are exposed to the virus," he says. "This is a very virulent virus, and even if someone is in a room two hours after a patient with measles has left the area, there is still the possibility that the person will contract the illness."

Another hot spot for measles during the current outbreak is in Washington state where 74 cases were confirmed just between Jan. 1 and March 22. Health officials warn that this number is still rising. All but one of these cases occurred in Clark County, which is in the southwest part of the state, separated from Oregon to the south by the Columbia River.

Hospitals and EDs in the region have taken multiple steps to address the outbreak and answer community concerns about the virus. "It has had a pretty big impact administratively as well as on the doctors and nurses on the ground," noted **Jason Hanley**, MD, medical director of the ED at PeaceHealth Southwest Medical Center in Vancouver, WA, during a Facebook live chat in February. "We moved pretty quickly with our infection prevention team to prepare the ED as well as our outpatient clinics to make sure we

can keep our community safe, to not only care for the people who could possibly have measles, but also everybody else they could possibly expose to [the virus]."

In fact, the hospital is asking patients who think they may have measles not to come to the hospital; rather, these patients should call ahead and let the ED know they are on the way so staff can prepare. On arrival, Hanley noted that the ED will send a physician out to a patient's car to perform an assessment.

"If there is any risk at all of it being measles, we will put a mask on the patient and bring [him or her] through a back door into a room that is safe and keep [the patient] away from all of the other patients in the waiting room," Hanley explained. "Most concerning to us are vulnerable populations — children under 5, immune-compromised people, [such as] people with cancer or another medical problem, and pregnant women."

Institute Protocols

Typically, the vaccine for measles is administered in two doses: one dose at age 1 and then a second dose at age 5. Hanley noted that children up to 6 months of age generally receive some protection from their mothers, so the most vulnerable period is between 6 months and 1 year of age.

"We want to protect those children with herd immunity. If enough of us are vaccinated against the disease, we won't see it pop up in the community like we have seen here recently," Hanley said.

To deal with the outbreak, the PeaceHealth ED has established some protocols for infants who have been exposed to measles. "If [the exposure] is within 72 hours, we can give the vaccination. Usually, we wait until 6 months of age to do that. We work with Clark County Public Health to make that decision," Hanley said.

What if a child who has been exposed to measles has received one dose of the vaccine but is not yet old enough for the scheduled second dose? "We have a system where we look at how risky the exposure was and how at-risk the patient is," Hanley explained. "If the exposure is significant and we see the patient within 72 hours [of the exposure], we may provide the second dose of

AUTHORITIES BLAME MISINFORMATION

Public health officials in Clark County, WA, lament the fact that the area is referred to as the epicenter of the current measles outbreak; this, for a disease that is entirely avoidable.

At issue is the fact vaccination rates need to be at 90-95% to prevent a measles outbreak. In Clark County, the rate is estimated to stand at just 78%, although some schools in the area have reported even lower rates.

Gov. Jay Inslee has declared a state of emergency in Washington, noting that vaccination rates in the Pacific Northwest are among the lowest in the nation. Washington is one of 17 states that enable parents to opt out of vaccinating their children for "philosophical" reasons.

Why are parents not vaccinating their children? For years, inaccurate information has circulated concerning a discredited 1998 study that linked the measles vaccine with autism. However, the inaccurate information persists despite the fact that the authors of subsequent reputable scientific studies have found no link between the measles/mumps/rubella (MMR) vaccine and autism.

Along with this misinformation, people lack an understanding about the seriousness of the measles virus. According to the CDC, before the measles vaccination program began in 1963, 3-4 million people contracted the illness in the United States each year, resulting in 400-500 deaths. Further, 48,000 people were hospitalized on an annual basis and 1,000 people developed encephalitis.

The CDC notes that widespread use of the vaccine resulted in a 99% reduction in measles cases. The agency also reports that the vaccine has a long record of safety and that adverse reactions are rare. Epidemiologists report that two doses of the MMR vaccine are 97% effective at preventing measles and one dose is about 93% effective at preventing the disease.

Complicating the issue for frontline providers is the fact that the earliest symptoms of measles are runny nose, cough, fever, and red or pink eyes — symptoms that are very similar to other illnesses. These symptoms may occur several days before the measles rash appears; nonetheless, patients are highly contagious during this period. As a result, people can be out in public spreading the disease without knowing that they have measles.

The CDC offers detailed information about the MMR vaccine that clinicians can share with patients: https://bit.ly/2Fz66lK. For clinicians who may be unfamiliar with measles, there is much more information from the CDC available at: https://bit.ly/2hudTre. ■

vaccine earlier [than the scheduled time of age 5]."

Alternatively, Hanley noted if a child presents to the ED and it has been longer than 72 hours post-exposure to measles, providers may provide immunoglobulin instead.

Hanley related that he had seen a few cases of measles during his training. However, just like at Maimonides Medical Center in Brooklyn, many staffers have never seen measles.

"For our first case here about a month ago, one of our physicians grabbed as many nurses, nursing students, techs, and other physicians [as he could] and said to come look at the rash — a classic measles rash ... because it is so rare to see anymore," he recalled.

Hanley stressed although while most people who contract measles will recover, it remains a dangerous disease. "One or two people out of 1,000 eventually die from measles," he said, noting the disease can spread extremely quickly. "On the spectrum of diseases, it is very contagious. If you walked into a room [with measles], no one was vaccinated, and no one had been exposed to the disease before, nine out of 10 people would get measles."

(Editor's Note: For even more information about the measles outbreak in the United States, be sure to check out an article in the April issue of Hospital Infection Control & Prevention*, available online at: https://bit.ly/2UaKcPa.)* ■

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'Purposeful Rounding' Mixes Security, Clinical Teams to Help De-Escalate Tense Situations

Early data show this tighter relationship has reduced "disruptive patient" calls

Concerned about the rise in workplace violence across the United States, administrators at St. Louis-based SSM Health decided they needed to look for new solutions to the problem in their network of hospitals. What they came up with was a cultural shift of sorts that they refer to as "purposeful rounding," a concept based on the idea that if security personnel are more integrated into the care team, there is a better chance of de-escalating behaviors so situations do not turn into major disruptions or violent acts.

First implemented in several hospitals in the summer of 2018, the health system has found that the approach has nurtured closer bonds and communications between security personnel and clinicians. In turn, this is making a difference in the number of incidents involving disruptive patient calls. Indeed, at one hospital, data show that the number of such calls to security was cut by half following implementation of the new approach.

Security personnel anticipate that there will be more fine-tuning in the months and years ahead. Still, they also believe they have hit upon a

winning solution that they can use without the need for big investments in added staff or technology.

The concept behind purposeful rounding grew out of a systemwide rapid improvement event, a tool SSM Health uses regularly to identify solutions to reduce waste, improve efficiency, and problem-solve, explains **Todd Miller**, CPP, regional public safety and security specialist for SSM Health. "One of the more concerning issues that we have had for healthcare security nationwide is a rising trend for workplace violence, especially in high-risk departments [such as] the ED, behavioral health, and mother and baby units," he says.

Consequently, in June 2017, SSM Health focused the rapid improvement process on finding new ways to reduce incidents of workplace violence more effectively. "All four of our states [Illinois, Oklahoma, Missouri, Wisconsin] were represented [at the event]. We had ED directors, behavioral health directors, and security leadership involved as well as executive leadership," Miller recalls. Purposeful rounding was one of the more promising ideas that emerged from this process.

Essentially, purposeful rounding is designed to identify troubling or potentially disruptive behaviors before they begin to escalate. This way, appropriate resources can align to prevent tempers or high emotions from potentially turning into something worse, Miller explains.

Considering security officers already round through high-risk areas to increase visibility and promote a law enforcement presence, purposeful rounding involves adding another layer to that process. Essentially, the role of the officer evolves so that he or she becomes another member of the care team, Miller observes. "The expectation now is to work with the clinical staff and work with the team to communicate observations ... and even build a positive rapport with patients if it is appropriate," he says. "It really revolves around having a more proactive approach and intervening before [a violent incident] occurs rather than traditionally being reactive where once someone is injured, security is called."

Begin With Education

Implementing purposeful rounding involves first providing a sound base of education about de-escalation and recognizing behavioral indicators before a physically violent act occurs. "This includes doing live, scenario-based education with nursing staff and actors to try to create a team environment that allows [security personnel and clinicians] to train together and work together naturally," Miller says. "The first time an officer and a nurse interact isn't in a crisis; it is in training and understanding how they work together and have a more natural communication."

Part of this educational phase involves learning how to use more facets of the rapport-building aspects of Crisis Prevention Institute (CPI) training, a widely used methodology with which most healthcare personnel and security personnel are at least somewhat familiar. *(Editor's Note: Learn more this training online at: https://bit.ly/2kxm9bk.)*

This education and practice equips security personnel with the skills to effectively communicate with clinical staff as they are rounding, Miller explains. This is especially important when it comes to sharing observations about potentially troubling behaviors in patients or visitors.

"There is a constant stream of actionable information back to not

EXECUTIVE SUMMARY

Concerned about upticks in workplace violence in healthcare settings across the country, SSM Health has implemented "purposeful rounding," a concept designed to strengthen communications and feedback between security personnel and clinicians on hospital units. Administrators describe the approach as a culture change but one that is well-received by clinicians in some of the most vulnerable units such as the ED, neonatal ICU, and behavioral health.

- Purposeful rounding grew out of a systemwide rapid improvement event, a tool that SSM Health uses regularly to identify solutions to reduce waste, improve efficiency, and solve problems.
- The approach is designed to identify troubling or potentially disruptive behaviors before they begin to escalate. This allows appropriate resources to align early to prevent tempers or high emotions from potentially turning into something worse.
- One of the first hospitals to implement the approach found that "disruptive patient" calls to security declined by half after the procedure change.

only the department during a shift, but also for oncoming shifts so that they can align resources ahead of time, intervene if needed, build rapport if needed, and show an extra presence on the floor instead of being reactive once an incident occurs," Miller shares. "Having a constant feedback loop of communication between nursing and security is the biggest part of purposeful rounding."

In fact, Miller says that of all the units, security personnel are probably closest to the ED in terms of building a positive line of communication. While building a good rapport with clinicians is central to the concept of purposeful rounding, there are times when it is essential for security personnel to take an extra step with patients or visitors.

"Building a rapport with a high-risk patient before the patient escalates is a big deal," Miller offers. "It is an attempt, at the very least, to initiate a positive interaction with the patient ... so that should [the patient] escalate, it is not just a uniform coming in after a crisis has started; it is Officer Jones who the patient met earlier."

Another part of the cooperation between clinical and security leaders concerns determining when extra resources or more frequent security rounding is needed in a department. "It is based more on acuity [in a security sense, meaning higher risk] and is at the discretion of the clinical leaders," Miller notes.

"If the ED is high acuity or there are a lot of behavioral health patients or the nursing staff has been feeling that a greater security presence is needed, it is up to that shift leader or that director to say what is appropriate for that shift."

Usually, such decisions are made in concert with a security shift supervisor and are the result of the strong bilateral communication that the purposeful rounding approach encourages, Miller adds. Such an approach helps to ensure that resources go where they are needed most. "What we didn't want to do is use up resources in areas where the acuity [or risk] is low or where there are only a few patients," Miller adds.

Nurture Relationships

Kate Madden, BSN, RN-C, team leader for the neonatal ICU at Cardinal Glennon Children's Hospital (part of SSM Health), notes that the implementation of purposeful rounding has been a welcome change for her staff.

"Our security team always had a great presence. They were immediately available and we had a good relationship with them, but we were definitely in a reactive mode," she explains. "That was the biggest shift, going from a reactive mode with a problem focus to being proactive and developing relationships."

Prior to implementation, security staff provided Madden with information about purposeful rounding and what it would involve. She passed that information to staff during huddles and through a weekly newsletter. "Security officers then layered in what they were trying to do with the families [in the unit], but they also did that piece with the staff," she says. "Having [the security officers] speaking with families and making friends and building relationships — that was very welcome because people were interested in having them around a little bit more."

Now, rather than just rounding through the 65-bed unit, security officers will engage in conversation with staff nurses and ask them about any security concerns or anyone in the department who may need extra attention. For instance, it is not uncommon for parents under stress to pace or raise their voices. Sometimes, people will level accusations or start arguments with staff, Madden says. She recalls one couple that was under great stress because of their sick baby. They started bickering. "They were in a good relationship, but they had financial woes and then a sick baby as well," Madden says. "They were missing work, they were worried about their jobs, and you can imagine how extremely stressed they felt."

A security officer, who had observed the bickering, made an effort to get to know the couple. "In speaking to them and in proactively building a relationship, he was able to help them tap into some support services," Madden recalls. These were services that the nursing staff had told the couple about. However, because the security officer knew the couple and had been proactively supportive, he drew attention to the fact that they had been bickering. The officer indicated he was worried about them, Madden relates. Thus, she believes the information about the support services was received in a different way, helping defuse the tension and potentially preventing the couple's bickering from turning physical.

In other instances, the security officer has passed helpful observations on to the nursing staff so they can take steps to intervene. "In building a relationship with one mom, the officer noticed a change and felt like she was escalating," recalls Madden of one recent situation.

The officer told the staff nurse that he thought the woman was upset, so the nurse helped the woman talk through her feelings, Madden says.

"I think the mom was trying to put up too brave of a front and maybe let her guard down with the security officer instead of the nurse," she says.

Madden explains that one of the things that has to happen for a person to de-escalate is for a "break" to occur.

"The goal of de-escalation is to control that break, for it to be a relief instead of a traumatic break," she shares. "We want to give people a controlled break, a supported break."

It is helpful for both security and nursing personnel to receive training in de-escalation techniques so that everybody knows what escalated behavior looks like and what they can do to provide that break before the behavior becomes unpleasant, scary, or dangerous.

"Just unpleasant is stressful for families, too," Madden adds. "No one wants to act like that, and we can really help people not to do that."

So far, hospital administrators are encouraged by the results of the purposeful rounding initiative. One of the first hospitals to implement the approach found that "disruptive patient" calls to security declined dramatically after the procedure change.

"They did a four-month average before we started the purposeful rounding process. They had an average of 34.16 calls per month before purposeful rounding," reports Miller, noting he is not permitted to reveal the specific hospital involved. Immediately following implementation of purposeful rounding, the average number of calls per month dropped to 15.75 for a similar four-month period.

"Something that dramatic shows that it wasn't a fluke," Miller says. "We're excited. We're positively encouraged that what we are doing has value or else we wouldn't be doing it."

Indeed, the implementation of purposeful rounding is now a systemwide initiative for SSM Health, including more than 20 hospitals in four states. Further, Miller notes that he is in the process of instituting a robust data collection process to understand the initiative's results going forward, along with any tweaks and refinements to the process.

"We are so new to it right now, and we are being very deliberate," he says. "I am looking forward to seeing the initiative evolve as we see what works and what can be improved upon like any continuing process-improvement program."

For other hospital or ED administrators intrigued by purposeful rounding and interested in pursuing a similar approach in their own settings, Miller advises them to clearly define the process they intend to put in place first and then track that process until it becomes standard practice. "Like any new process, you go through a period of fearing the unknown and fearing change," he says. "However, once the infrastructure is put in place and staff can see the value, it gets easier."

Further, Miller stresses that it is critical that both sides of the equation understand the importance of the purposeful rounding process.

"If one side is putting themselves out there to communicate more, it needs to be supported by the other side," he advises. "If security personnel are taking the time to reach out to ED leadership, they need to be supported and feel like what they are doing has value or the program will die on the vine." ■

SOURCES

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Consider Potential for Drug-Drug Interactions When Prescribing New Medication

Research suggests pain meds are a frequent culprit in these episodes

Intriguing new research suggests that emergency clinicians might want to take extra care when writing new prescriptions for patients upon their discharge from the ED. Investigators reviewed the charts of 500 adults discharged from the ED at a large, academic medical center between Aug. 1 and Aug. 31, 2015. The research revealed that 190 patients experienced at least one drug-drug interaction resulting from a newly prescribed medicine. In all, the researchers identified 429 drug-drug interactions.[1]

Patrick Bridgeman, PharmD, BCPS, a study co-author and an ED-based pharmacist at Robert Wood Johnson University Hospital in New Brunswick, NJ, explains that part of the problem may be that in the study hospital, as well as in many other hospitals, new prescriptions written for patients upon discharge from the ED do not go through the same computer-based system as drugs administered to patients while they are in the hospital.

"At our facility, we have ... the main hospital computer system into which all medications would be entered that are going to be administered in the ED. Then, there is a separate ED documentation system where [clinicians] write discharge prescriptions for the patients," explains Bridgeman, who also is a clinical assistant professor of pharmacy practice and administration at Rutgers University Ernesto Mario School of Pharmacy.

Although the drugs a patient takes at home may have been entered into the main hospital system, they are not necessarily re-entered into the ED documentation system. Thus, these drugs may escape electronic flagging for a potential drug-drug interaction with a newly prescribed medicine. "A lot of facilities integrate [both of these computer systems], and that is something we are working toward. It is not uncommon for there to be two separate systems between the ED and the inpatient side," Bridgeman says.

Although having an integrated computer system for both the ED and the inpatient side might prevent many drug-drug interactions, it will not prevent all of them. Consequently, Bridgeman encourages emergency personnel to familiarize themselves with some of the most common drug-drug interactions described in his study.

Out of the 429 drug-drug interactions, the most common drugs involved included oxycodone/acetaminophen, which was implicated in 18% of cases, and ibuprofen, which was implicated in 10% of cases. Further, ciprofloxacin, albuterol, and prednisone each were implicated in 9% of the drug-drug interactions.

"One of the biggest things we found was that narcotics, and oxycodone in particular, accounted for a large proportion of the drug-drug interactions, not only from a mild or moderate standpoint, but from a more severe standpoint," Bridgeman noted.

For example, investigators found instances in which patients received prescriptions for both oxycodone and a benzodiazepine,

EXECUTIVE SUMMARY

The results of a new study show that 38% of patients discharged from the ED at a large, academic emergency center experienced at least one drug-drug interaction resulting from a new medication prescribed at discharge. Even though this was a small study, investigators noted that the findings suggest emergency clinicians should familiarize themselves with the most common interactions highlighted and carefully consider the potential for adverse reactions when writing new prescriptions for patients upon discharge from the ED.

- Out of the 429 drug-drug interactions that surfaced during the investigation, the most common drugs involved included oxycodone/acetaminophen (18% of cases), ibuprofen (10% of cases), and ciprofloxacin, albuterol, and prednisone (9% of cases each).
- Although 15.6% of the drug-drug interactions were classified as B (no intervention required), another 60% were classified as C (therapeutic monitoring required). Further, 22% were categorized as D (consider modifying therapy) and 1.6% were categorized as X (drugs prescribed involved contraindicated combinations).

a combination that causes a higher risk of overdose death. "This is something that would be extremely concerning," Bridgeman says. "There was a major warning that was distributed [by the FDA about this drug-drug combination] because benzodiazepines are also becoming a concern in terms of recreational use."

Another problematic drug-drug interaction that surfaced was the combination of oxycodone/acetaminophen and fluoroquinolones, a class of antibiotics commonly used to treat urinary tract infections. Researchers have found that when these two drugs are used together, there can be neurologic side effects such as seizures, delusions, and hallucinations. Similarly, the combination of oxycodone/acetaminophen and the diuretic hydrochlorothiazide is associated with significant decreases in blood pressure and/or sodium levels, which can lead to a higher risk for falls. Also, the drug-drug combination may make the diuretic less effective.

Fortunately, since the time of the study, the use of narcotics at Bridgeman's hospital has declined substantially. The risk of drug-drug combinations involving this class of drugs likely has declined, too — and may be the case at other hospitals. "Narcotics are not necessarily being used as frequently now as they were [in 2015]," Bridgeman notes. Nonetheless, providers need to be mindful of potential drug-drug interactions when prescribing these drugs.

Nonsteroidal anti-inflammatory medicines also were found to be problematic when used in concert with antihypertensive drugs. For instance, investigators noted that the use of lisinopril (a drug used to treat high blood pressure and heart failure) and ibuprofen together can lead to higher rates of kidney damage.

"Providers should be cautioned [about this drug-drug combination], especially in patients that are higher risk, such as elderly patients," Bridgeman observes.

Note Follow-Up Options

Investigators reported that 15.6% of the drug-drug interactions were classified as B, meaning that no intervention was required. Another 60% of cases were classified as C, requiring therapeutic monitoring, and 22% of drug-drug interactions were categorized as D, meaning the provider should consider modifying therapy. Only 1.6% of drug-drug interactions were categorized as X, meaning the drugs prescribed involved contraindicated combinations.

In many cases of drug-drug interactions, providers simply are unaware of all the medicines patients are taking at home. "Patients don't necessarily have a complete list of their medicines when they come to the ED. That makes it exceedingly difficult to do an appropriate assessment if we are missing that information," Bridgeman notes.

However, if emergency providers are at least aware of the most common drug-drug interactions, they can counsel patients about these problematic combinations when they are prescribing one of the implicated drugs upon discharge. Bridgeman encourages providers who have access to ED-based pharmacists to consult with them, especially in cases involving patients taking complex drug regimens.

"We frequently get asked questions about which antibiotics would be most appropriate for a patient on an anticoagulant or a large number of medicines," he observes. "You can make sure there are no serious drug-drug interactions associated with what you are prescribing. We are a good resource from that standpoint." Of course, it is possible that taking the time to consult with a pharmacist or to double-check the safety of particular medications will affect a patient's length of stay in the ED, but it is best from a safety standpoint, Bridgeman stresses.

Another safeguard that is helpful is to ensure that patients can access follow-up monitoring before they are discharged from the ED. "My intention is that patients will have follow-up either by their PCP or a specialist," Bridgeman notes.

"This does not necessarily mean putting the burden on the ED itself, but making sure that patients are tied into care before they are discharged from the ED so that in the event they need assistance [for a drug-drug interaction], they have someone they can contact." ■

REFERENCE

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SOURCE

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Data Show Progress Has Stalled on Staph Bloodstream Infections

Experts call for renewed adherence to CDC recommendations

New findings from the CDC show that while hospital infection prevention efforts have successfully reduced the rates of *Staphylococcus aureus* (staph) bloodstream infections in recent years, this progress has apparently stalled. There is a concern that healthcare providers may be backsliding in their activities and focus regarding infection control.

According to electronic health record data from more than 400 acute care hospitals and population-based surveillance data from the CDC's Emerging Infections Program, methicillin-resistant *Staphylococcus aureus* (MRSA) bloodstream infections in healthcare settings decreased by about 17% each year between 2005 and 2012. However, that progress slowed, with no significant change from 2013 to 2016. Further, the data also reveal there was a nearly 4% per year increase in methicillin-susceptible *Staphylococcus aureus* (MSSA) infections that started outside of healthcare settings from 2012 to 2017. In 2017 alone, the CDC reported 119,000 people acquired staph bloodstream infections in the United States, leading to nearly 20,000 deaths.

In a press briefing held in March, **Anne Schuchat**, MD, the principal deputy director of the CDC, explained that the ongoing opioid crisis is one possible factor driving the incidence of *S. aureus* bloodstream infections.

"In 2016, 9% of all serious MRSA infections happened in people who inject drugs, rising from 4% in 2011," she said. "Healthcare providers should be aware that people who inject drugs are 16 times more likely to develop a serious staph infection than those who do not."

To prevent the spread of MRSA in healthcare settings, Schuchat advised clinicians to adhere to CDC recommendations, including contact precautions such as wearing gowns and gloves when caring for patients with MRSA, and targeted screening of patients who might carry MRSA.

"We believe those actions, along with preventing infections in the first place — keeping hands clean and improving how antibiotics are used — have contributed to the decline in overall staph infections nationally," she said. "But inconsistent or declining adherence to these recommendations might also be slowing our progress."

Schuchat said that while many staph infections have been prevented, the data show that more effort is needed to address the problem.

"For healthcare providers and administrators, this means prioritizing the prevention of staph infections and implementing programs based on CDC recommendations," she said. "[They] should review their data on an ongoing basis and decide when to add additional interventions if they are not meeting their infection reduction goals."

For instance, Schuchat pointed to the success at Veterans Affairs medical centers regarding reductions in overall staph burden by 43% between 2005 and 2017. These centers achieved this by implementing interventions to reduce the spread of MRSA and by enhancing adherence to recommended infection prevention practices.

"We think if a facility or a community is seeing a plateau [in progress against staph infections], they should add on more steps," Schuchat offered. "We don't have the data yet to say that everybody should be doing everything all the time, but we do recommend that clinicians consider additional measures for high-risk patients or high-risk circumstances like those in the intensive care unit or people undergoing particular types of higher-risk surgery."

Schuchat noted that it is crucial for healthcare providers to use checklists and to maintain consistent adherence to infection prevention practices across teams that work in healthcare facilities. Further, she said that pharmacists play an important role in addressing antimicrobial resistance.

"We really think the right drug needs to be used at the right time for the right purposes and for the right duration. That can help us avoid the increases in antimicrobial resistance that we're seeing," she explained.

(Editor's Note: For much more information about staph infections and how to prevent them, please visit: https://bit.ly/2U5MzDG.) ■

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CME/CE QUESTIONS

1. **Since October 2018, how many confirmed cases of measles have been reported in the ED at Maimonides Medical Center in Brooklyn, NY?**
   a. Two
   b. Four
   c. Seven
   d. 10

2. **Speaking about a recent measles outbreak, Jason Hanley, MD, medical director of the ED at PeaceHealth Southwest Medical Center in Vancouver, WA, says medical staff members there are most concerned about vulnerable populations, including:**
   a. children older than 5 years of age.
   b. pregnant women.
   c. teenagers.
   d. patients without health insurance.

3. **The concept behind purposeful rounding grew out of:**
   a. a systemwide rapid improvement event.
   b. a review of how other industries were preventing workplace violence.
   c. a specific instance of workplace violence that prompted new action.
   d. a suggestion from law enforcement personnel.

4. **For other hospital or ED administrators intrigued by purposeful rounding and interested in pursuing a similar approach in their own settings, they should:**
   a. review their data on workplace violence to see if it is necessary.
   b. visit other hospitals that have implemented the approach.
   c. clearly define the process they intend to put in place.
   d. invest in new technology to facilitate the process.

5. **According to Anne Schuchat, MD, the principal deputy director of the CDC, how much more likely is it that those who inject drugs will develop a serious staph infection compared to those who do not inject drugs?**
   a. Two times more likely
   b. Four times more likely
   c. 10 times more likely
   d. 16 times more likely