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Frontline Providers Use Lessons Learned During 2014 Ebola Crisis to Manage COVID-19

March 5, 2020

EXECUTIVE SUMMARY

As the outbreak of COVID-19 expands well beyond China, public health authorities warn hospitals and frontline caregivers to prepare for possible widespread virus outbreaks in U.S. communities. Experts note that policies and procedures developed during the Ebola crisis of 2014 are in place and ready to be deployed. They urge hospitals to take advantage of the resources available.

- The CDC reports there are 100 cases of COVID-19 in the United States. Ten people have died (as of March 5). Thirty cases are travel-related, 17 have been spread person to person, and the rest are under further investigation.
- In addition, there are many other patients with COVID-19 undergoing care in the United States because of repatriation efforts to bring home U.S. citizens living in areas hard-hit by the virus.

- Experts from the National Ebola Training and Education Center urge healthcare systems to adopt processes in line with “Identify, Isolate, and Inform,” a process for quickly identifying and managing cases of infectious disease in a way that minimizes the risk for subsequent transmissions.
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Public health authorities have confirmed cases of COVID-19, the name given to the novel coronavirus first identified in China, have broken out in several states.

Before these cases were reported, **Nancy Messonnier**, MD, director of the National Center for Immunization and Respiratory Diseases at the CDC, warned such outbreaks were all but inevitable.

“This new virus represents a tremendous public health threat,” she said during a Feb. 21 press briefing. “We don’t yet have a vaccine for this novel virus, nor do we have a medicine to treat it specifically.”

Messonnier said the CDC continues working with state, local, and territorial health departments to prepare the public health workforce to respond to local cases and the possibility the outbreak could become a pandemic.

She also noted the agency is working closely with healthcare systems across the country to reinforce infection control principles and to prepare plans in the event there are surges of patients seeking care.

As of March 5, the CDC says there are 100 U.S. cases (30 travel-related, 17 spread person-to-person, and 53 under further investigation). In addition to these cases, dozens of U.S. citizens who have been diagnosed with the illness are receiving care. These individuals come from groups that have been repatriated to the United States from areas hard-hit by the virus. Most of these cases involve individuals from the Diamond Princess, a cruise ship that docked in Japan carrying more than 600 passengers diagnosed with the illness. There also are a handful of cases involving individuals repatriated from Wuhan City, where COVID-19 outbreaks were first reported.

Messonnier noted all individuals involved with these repatriation efforts must remain in quarantine for 14 days, the incubation period for the virus, before returning to their regular life. This is to ensure they are free of the disease and cannot transmit the virus to others. Most of these individuals are under quarantine at four Department of Defense installations across the United States.

The CDC has begun sharing the number of confirmed U.S. COVID-19 cases and the number of those who were repatriated to the United States with the virus.¹ The agency updates this information daily Monday through Friday.

The CDC is working with businesses, manufacturers, and pharmacies on steps they can take to ensure supplies of needed materials are available in the event of a surge in new cases.

Frontline providers in the ED need to be prepared, too. The risk of a larger outbreak of COVID-19 is clear, and public health authorities are stressing the need for a heightened focus on screening and infection control practices.

If there is any good news, it is that the 2014 Ebola outbreak illuminated many of gaps in the U.S. healthcare infrastructure that needed to be improved to effectively manage a fast-spreading infectious disease. Since then, much work has been done to address these shortcomings.

For instance, the Department of Health and Human Services and CDC developed a tiered structure, establishing 10 regional treatment centers as well as some state-designated treatment centers that are capable of caring for people infected with special pathogens, explains **Shelly Schwedhelm**, MSN, RN, NEA-BC, the executive director of emergency management and biopreparedness at the Global Center for Health Security at Nebraska Medicine.

The University of Nebraska Medical Center's (UNMC) biocontainment unit, a highly specialized facility designed to care for people affected by bioterrorism or highly hazardous communicable diseases, was one of three centers that took charge of the care and treatment of patients diagnosed with Ebola during the 2014 outbreak. Specialists are again playing an important role in the latest health emergency, as several patients with COVID-19 have been flown to the UNMC campus for evaluation and treatment.

Further, the specialized staff members at UNMC make up a significant portion of the faculty at the National Ebola Training and Education Center (NETEC), which has spearheaded efforts to improve preparedness for infectious disease outbreaks through systems improvements as well as basic training. (*Learn more about the center at: <http://bit.ly/2HU0gwS> (<http://bit.ly/2HU0gwS>).*)

“To say that we are more prepared [than in 2014] is an understatement,” Schwedhelm stresses. “NETEC also does some site visits for readiness. They are nonpunitive, non-regulatory site visits. The 10 regional treatment centers are [evaluated] annually, and then we have done numerous other site visits over the last five years to look for progression ... in moving people toward preparedness.”

While considerable progress has been made, Schwedhelm acknowledges there is a long way to go, specifically regarding frontline providers who have not yet been able to access the kind of training that NETEC provides.

“I think it is a matter of doing a lot of work to let people know what their resources are,” she says. “We share everything very broadly. All of our resources and tools we put on [the NETEC website]. People can then download them, customize them, and use them without having to start [from scratch].”

Schwedhelm notes that an important mantra of the one-day training sessions that NETEC provides to frontline providers is “Identify, Isolate, and Inform,” a straightforward process for ensuring individuals at risk for a communicable disease are identified quickly, steps are taken immediately to protect others from acquiring the potential pathogen, and appropriate internal and external authorities are notified about a suspected case.

While this approach has been adapted for use with Ebola, SARS, MERS, and other pathogens, the CDC has quickly developed a flowchart for use of the process with COVID-19.²

First implemented at UNMC as a paper process during the Ebola crisis, it has been integrated into the health system’s electronic medical record, and is fine-tuned continually, Schwedhelm shares. The process is in place at all entry areas for clinics, urgent care centers, and EDs within the Nebraska Medicine system to ensure any potential cases of COVID-19 are picked up before staff or other patients are put at risk.

For instance, when patients present to the ED at UNMC, the first person they interact with, whether this person is a receptionist at the front desk or a nurse greeter, will ask if they have a fever, rash, or cough.

It is a simple “yes” or “no” question, requiring no clinical judgment, Schwedhelm explains. For cases in which patients answer “no,” the ED staff person will move on to travel questions.

Staff ask the patient if he or she or anyone they have been in contact with have traveled outside the country in the last month. “We went with a month because that keeps us from having to be specific to the incubation period of 21 days for Ebola and Lassa [fever], or 14 days for [COVID-19], or whatever it is we are looking for,” Schwedhelm observes. If patients answer “yes” to both the symptom and international travel question, the ED staff person will pin down the travel location, beginning by continent. For example, if a patient has recently traveled to the Democratic Republic of Congo, where an Ebola outbreak is occurring, that will trigger a banner for the triage person to move the patient to an isolation room, Schwedhelm explains.

Regarding COVID-19, a similar trigger occurs if the international travel involved China. “We just changed this [question] from just being about travel to Wuhan City ... to travel to all of China,” Schwedhelm says. “We customize the process for how we want it to be. We believe it is very efficient, and it takes relatively little time.”

Patients who report a warning symptom and have traveled to a hot spot (or been in contact with someone who has), receive masks. “What this does is ... get a mask on people right away so that they are not sitting side by side with other people sitting in the waiting room,” Schwedhelm says. “We have many fewer, almost to the point of it being zero, healthcare exposures, too.”

At press time, the ED at UNMC had not yet picked up on any suspected cases of COVID-19, although there have been two possible cases reported in the system’s student health centers. There are two such centers, one in Lincoln and one in Omaha. Nonetheless, protocols are in place in the UNMC ED should a suspected case present there.

“Once that patient is identified up front, then they would have a mask placed on them, and then they would be taken to a negative airflow room,” explains **Michael Wadman**, MD, chairman of the department of emergency medicine at UNMC. “Then, we would have a consult with our infectious disease specialists at UNMC and with the county health department [to initiate] testing once we have determined that symptoms of a lower respiratory tract infection are present.”

Currently, a nasopharyngeal swab, a oropharyngeal swab, and serum samples would be sent to the CDC for testing for COVID-19, Wadman notes.³

How might colleagues in other emergency settings go about putting similar procedures in place so they are optimally prepared for COVID-19 cases? First, scrutinize front-end triage and intake processes, Wadman advises.

“Make sure there is a standard way to screen for these patients, and then make use of the resources that Schwedhelm described for getting [the Identify, Isolate, and Inform] process in place,” he says. “This is not something that is going to end. What will be the next challenge that we confront? Having that type of a flexible intake process that we have here really allows you to adapt to whatever the threat might be.”

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