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and measles. Whereas other studies have described specific infection control interventions, such as patient masking,⁷ isolation,⁹ and risk-factor screening,⁸ this study is unique in its use of drills to capture both key temporal measures and staff member compliance with multiple infection control practices.

The findings in this report are subject to at least 2 limitations. First, exercise evaluation was limited to items that were under direct control of the staff members who participated in the drill, the controller, and the evaluator. Factors such as ED patient volume and staffing levels could potentially influence performance on a given day, but these were not evaluated. Second, controllers were not able to objectively present all signs of illness (eg, fever, chills), and the moulage used to simulate a measles rash might have been misleading or unconvincing, although this information was not captured in the drill reports.

Unannounced mystery patient drills were successfully used to evaluate communicable disease response capabilities in the acute care setting in 49 New York City hospital EDs. As part of this program, a toolkit was developed to help hospitals carry out similar infectious disease drills to test protocols and identify areas for improvement. Use of standardized scenarios, evaluation guides, and reporting templates can assist public health officials in assessing systemwide capabilities and gaps to guide interventions, and inform development of training resources to improve health care facility readiness at a critical point of entry into the health care system. The toolkit is available at <http://on.nyc.gov/IDPrep>.

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COMMENTARY



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Increasing globalization and travel has allowed infections to spread more easily and has resulted in the potential for more frequent outbreaks. Outbreaks of severe acute respiratory syndrome (2003), MERS (2012 to 2014), measles (2014), and Ebola virus disease (2014) highlight the importance of rapidly identifying, isolating, and appropriately managing the care of patients with highly communicable diseases of public health concern to prevent nosocomial spread of illness to other patients, staff, and visitors.¹ With approximately 141 million patient visits every year in the United States, EDs serve as one of the front lines of our health care system and a major gateway to care.² They also serve as a vulnerable point of entry for potential public health emergencies, including highly communicable infections. Communicable diseases can pose a unique threat to our health care system because patients seeking evaluation in the ED are at risk of both spreading an existing infection to other patients and health care personnel and acquiring new infection.³ Despite awareness of these issues, quickly identifying these infections and initiating appropriate infection control measures can still be easily overlooked, given the overwhelming pressures that exist in the ED because of crowding and the need to quickly provide triage assessment.

The above report describes an assessment of a series of unannounced mystery patient drills that evaluated EDs' abilities to identify and respond to patients with possible measles or MERS.⁴ The drill was passed 78% of the time by appropriate masking and isolation of the patient; however,

nearly 40% of hospitals failed at least one drill. Considerable variation was observed in the length of time each hospital took to perform the steps, and suboptimal adherence to key infection control practices was frequently identified.

The approach to patients with potentially communicable diseases should center on optimizing the ability to rapidly identify them and prevent subsequent transmission. The results of the above study indicate that EDs should focus additional resources in educating staff, especially in triage, on recognizing the characteristic high-risk features of these patients. Triage protocols may be designed to develop scripts so that specific information is extracted from all patients who present to the ED to improve detection. The best protocols can be quickly modified to adapt to newly identified outbreaks (eg, screen all patients for recent travel to West Africa when there is an Ebola outbreak in that area). The patient drills also showed that some patients were not isolated (or isolation was delayed) and that ED staff often had suboptimal compliance with infection control measures. Therefore, any protocols implemented should clearly delineate the appropriate isolation precautions (eg, contact, droplet, aerosol) and ensure that ED staff are fully compliant with infection control measures.

Some key features of highly communicable diseases to include in screening protocols would be a rash, fever, travel to an area with an outbreak, and unexplained respiratory symptoms. Patients with *Neisseria meningitidis* present with petechiae or ecchymosis and fever and should use droplet precautions for the first 24 hours of antimicrobial therapy. The signs and symptoms of Ebola virus disease are nonspecific and resemble those of many other common causes of febrile illness in returning travelers.⁵ Acutely ill patients who have been in an Ebola-risk area in the previous 21 days should be assessed for any potential risk for Ebola virus exposure, as well as other conditions listed on the Centers for Disease Control and Prevention's Traveler's Health Web site (<https://wwwnc.cdc.gov/travel>) for West Africa (eg, Lassa fever, yellow fever, other illnesses), and specifically for malaria, the most likely diagnosis in a febrile traveler returning from these areas. Updated recommendations for health care workers can be found at Ebola: US Healthcare Workers and Settings (<https://www.cdc.gov/vhf/ebola/healthcare-us/>). Vesicular rashes may be observed in patients with varicella and smallpox; patients with suspected disease should begin using airborne and contact precautions. Measles often presents with a maculopapular rash, cough, coryza, and fever; these patients should be

placed in an airborne isolation area. Influenza presents with fever, malaise, cough, and pulmonary infiltrates, and patients should begin using droplet precautions. Patients with severe acute respiratory syndrome and MERS present with an influenzalike illness, with pulmonary infiltrates in patients with recent travel to an endemic area, and should begin using airborne and contact precautions with face and eye protection.⁶

It is vitally important for health care providers to quickly recognize and isolate patients with rare illnesses, such as severe acute respiratory syndrome and Ebola, that could have disastrous public health consequences. Providers also need to pay attention to the day-to-day screening for infections such as influenza that put patients and staff at risk regularly. Improved awareness, education, and development of protocols and performance goals are critical in enhancing preparedness and addressing the vulnerability of the ED to these risks. These drills illustrated several areas that need improvement, such as obtaining an appropriate travel history and better adherence to infection control practices. Simulated patient exercises can be effective tools to evaluate ED emergency plans, protocols, and readiness for the entry of dangerous communicable diseases. The link in the article above (<http://on.nyc.gov/IDPrep>) provides a tool kit to help EDs conduct similar drills to enhance preparedness and identify areas for improvement.

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