

Johns Hopkins and CDC prepare emergency department staff to care for patients with infectious disease

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From the modules: Actors simulate an emergency department nurse caring for a patient presenting symptoms of Ebola virus disease in the department's isolation unit. Credit: Johns Hopkins Medicine/CDC

Four Web-based training modules developed by Johns Hopkins Medicine for emergency department personnel who treat patients with infectious diseases are now available on the Centers for Disease Control and Prevention's (CDC) [YouTube channel](#).

Titled Ebola Preparedness: Emergency Department Guidelines, the learning series prepares health care workers to safely and efficiently identify, triage and briefly manage the care of patients who might have Ebola. In addition, the modules showcase important planning processes, provider-patient communication techniques and cross-discipline teamwork principles that can be used to successfully prepare for emerging infectious diseases.

"In the last several years, our world has witnessed outbreaks of coronavirus, severe acute respiratory syndrome, Middle East respiratory syndrome and novel influenza viruses, such as H1N1 and, most recently, Ebola," says Lisa Maragakis, director of hospital epidemiology and [infection control](#) at The Johns Hopkins Hospital. "These modules provide tools and resources that [emergency department](#) staff can reference when preparing to care for patients with any highly infectious disease."

The Johns Hopkins Armstrong Institute for Patient Safety and Quality led the development of the online learning experience using federal funds awarded by CDC. The multidisciplinary team included experts in emergency medicine, infectious disease, nursing, human factors and systems engineering, infection prevention and control, content development and visual design from organizations including Johns Hopkins Medicine, The Johns Hopkins University, the Society for Healthcare Epidemiology of America, the Emergency Nurses Association, the American College of Emergency Physicians, the Association for Professionals in Infection Control and Epidemiology, and the Armstrong Institute for Interactive Media Studies at Miami University, located in Ohio.

"The product we produced for CDC will help prepare health care facilities across the nation to better care for patients during disease outbreaks and epidemics," says Peter Pronovost, senior vice president

for patient safety and quality at Johns Hopkins Medicine and director of the Armstrong Institute. "As clinicians, we have a responsibility to provide patient-centered, respectful care in the safest manner possible, no matter the circumstances."

The training package consists of short, step-by-step video clips that supplement CDC's written guidance on how to identify, triage and briefly care for a patient who might have Ebola. The modules feature a series of vignettes showcasing CDC's recommended three-step strategy—identify, isolate and inform—for managing possible Ebola cases. A narrator reminds viewers of important safety and patient-centered care practices. One module is dedicated to department planning for future emerging diseases. Preparations referenced include stocking enough [personal protective equipment](#) to cover frontline staff caring for a patient under investigation for Ebola and regular drills to practice important safety protocols.

"With approximately 130 million Americans visiting emergency departments each year, it was critically important that we develop an interactive training program to educate clinical staff on CDC's recommendations related to the identification, isolation and approaches to care for patients with risk factors or symptoms of Ebola," says Susan Peterson, an emergency medicine specialist with the Armstrong Institute and assistant professor at the Johns Hopkins University School of Medicine.

In developing the online learning experience, the organizers took advantage of the Armstrong Institute's close, ongoing partnership with The Johns Hopkins Hospital's departments of Emergency Medicine and of Hospital Epidemiology and Infection Control. The team toured the Emergency Department and isolation center to test how best to implement CDC's guidelines in a real-world setting. Points of uncertainty between the written guidelines and actual activities

performed by personnel were identified, and potential solutions are showcased in the filmed modules.

"To create these modules, we used an innovative approach that applied the principles of human factors engineering to CDC's guidelines for emergency department staff," says Ayse Gurses, a human factors engineer and associate professor at the Armstrong Institute. "This allowed us to identify potential safety risks and work with clinical experts to develop feasible recommendations that mitigate these risks, minimizing potential errors that could lead to the further spread of the disease."

This is the second course produced by the Armstrong Institute for CDC. The first training tool, Ebola Preparedness: PPE Guidelines, illustrates CDC's guidelines for the proper use of personal protective equipment. The complete series is available on CDC's website.

Provided by Johns Hopkins University School of Medicine

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