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RECOGNIZING AND RESPONDING TO A NEW ERA OF INFECTIOUS AND COMMUNICABLE DISEASES

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Friedrich Nietzsche once wrote, “That which does not kill us makes us stronger.”¹ The purpose of this article is to apply this philosophy to infectious and communicable diseases. In the recent scramble for Ebola virus readiness, health care providers adopted drastic measures to protect patients and staff. Using hindsight, what lessons can be extrapolated for other infectious and communicable diseases within the context of emergency nursing? Moreover, what are ways in which emergency departments might prepare for future pandemics?

Infectious and communicable diseases are not new. The current generation of emergency nurses has adapted to human immunodeficiency virus, severe acute respiratory syndrome, avian flu, annual influenzas, Ebola virus, and other microorganisms. However, one newer and confounding variable is the speed at which remote germs are urbanized. Specifically, more humans spread germs at faster rates, as demonstrated in the [Figure](#).² We have entered an era in which risks are higher and everyone has more to lose. This opportunity for reflection is one we cannot afford to ignore.

Early Ebola virus response plans were developed under chaotic circumstances. These circumstances took a toll on scarce hospital and human resources. Pandemics are forecasted to appear at faster rates, and thus time for preparation between pandemics will grow shorter as a result. Emergency departments need a proactive framework or formula from which to stage and mobilize future responses. The following sections describe “5 S’s” (screening, segregating, suiting, sharing appropriate information, and sanitizing) to consider during pandemics to prioritize and solidify safety.

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J Emerg Nurs 2015;41:138-40.

Available online 19 January 2015
0099-1767

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<http://dx.doi.org/10.1016/j.jen.2014.12.009>

Screening

Patients suspected of having a disease may not exhibit a hallmark symptom or may be in denial. In 13% to 25% of Ebola cases, patients have been afebrile. A lesson learned was that emergency departments should screen for more disease symptoms than the one “hallmark Ebola symptom” of fever.³

Rigor must be a priority when constructing screening questions. Without validity and reliability of screening instruments, one breach in screening can expose more ED patients and staff than one breach in personal protective equipment (PPE) or PPE donning and doffing procedures.

Segregating

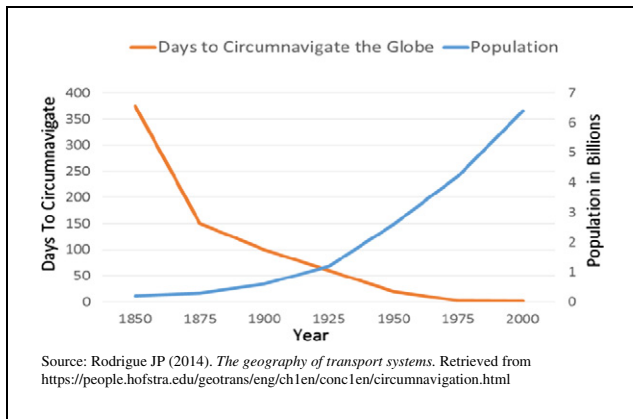
Privacy screens and physical barriers have limitations. Negative flow rooms and private toilets⁴ are recommended but may not be available. However, a designated anteroom is recommended to ensure proper PPE staging and buddy monitoring.^{5,6} Having a designated anteroom provides for cold, warm, and hot areas and pass-through of supplies.

Extrapolations from the construction industry are helpful. Consider interdisciplinary walkthroughs, such as those done prior to remodeling. Emergency departments should have access to portable high-efficiency particulate air (HEPA) filter machines⁷ to counteract droplets when aerosolization is a concern. HEPA filtering should be considered for prescreening areas, waiting rooms, ambulance entries, or other common areas to protect staff and other patients.

Suiting

Staff input and brainstorming into the PPE process is important. Not every employee is suited or built for frontline care. Hospitals were advised to solicit volunteers for Ebola response teams and containment unit patient care. Ebola caregivers must be highly engaged and devoted to strict isolation techniques.⁸

Visual displays of the equipment and the suiting process should be posted. Detailed checklists should be provided for buddies or monitors so they can verbalize each step and initial the checklist once it is completed. Lists of all staff or visitors and the time of entry and exit should be kept.



FIGURE

Growing populations and shorter travel time has urbanized remote infectious diseases at faster rates. Modified From Rodrigue J-P. *The geography of transport systems*. Retrieved from <https://people.hofstra.edu/geotrans/eng/ch1en/conclen/circumnavigation.html>, and from Tverberg G. World energy consumption since 1820 in charts. Retrieved from <http://gailtheactuary.files.wordpress.com/2012/03/world-population-1820-to-2010.png>. Accessed January 12, 2014.

Staff should have the option of wearing the N-95 mask inside the powered air purifying respirator. Although outer hose surfaces are regularly decontaminated, it is important that inside hose surfaces be cleaned between uses and that training regarding cleaning be provided. For example, the literature shows that shared opium and narcotic pipes are a vehicle for transmission of tuberculosis, syphilis, and other communicable pathogens.⁹

Sharing Appropriate Information

The communications process should be streamlined to remove chaos. It is advisable to create “speed dial” access to your institution’s infection prevention or infectious disease department and local or state departments of health so they can be contacted quickly if potential cases are identified.

Distribution lists should be created so a group page, text, or e-mail message can be sent via emergency response software. This step empowers staff to focus on patients rather than spending time guessing who should be called.

Sanitizing

When in doubt, risk versus benefit principles should be used.¹⁰ When built-in ED bathrooms are not present, commode chairs are the next best option. However, whenever commode chairs are used, disposable commode pails are the recommended standard of care for bedside toileting,¹¹ with use of strict wipe-down techniques.

Manipulation of infected waste increases microbe shedding and aerosolization. In addition to red bag use, triple bagging of infected waste is preferred compared with double bagging.

Conclusion

The speed at which remote germs are urbanized has complicated ED infection control processes. The need for the use of standard precautions remains a fundamental practice in emergency nursing and a high priority to reduce the transmission of infectious and communicable diseases.¹² ED staff should prepare for infectious and communicable disease pandemics by using a safe, structured, and prioritized approach such as the 5 S’s: screening, suiting, segregating, sharing appropriate information, and sanitizing.

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