

Infection Prevention for the Emergency Department

Out of Reach or Standard of Care?

Stephen Y. Liang, MD, MPH^{a,b,*}, Madison Riethman, MPH, CPH^c,
Josephine Fox, MPH, RN, CIC^d

KEYWORDS

- Infection prevention • Hand hygiene • Environmental cleaning
- Central line–associated bloodstream infection
- Catheter-associated urinary tract infection • Ventilator-associated pneumonia
- Emergency department

KEY POINTS

- The emergency department (ED) presents unique challenges to infection control and prevention.
- Hand hygiene is a fundamental strategy for preventing the transmission of infectious disease in health care settings.
- Transmission-based precautions, environmental cleaning, and appropriate reprocessing of reusable medical devices provide added layers of protection to counter the spread of infectious disease.
- Health care–associated infections (eg, catheter-associated urinary tract infection, ventilator-associated pneumonia, central line–associated bloodstream infection) are often preventable but require systems-based strategies.
- Future research and innovation are needed to optimize infection prevention practices in the ED.

Emergency departments (EDs) are the vanguard of modern health care systems, serving as a primary point of access to timely and life-saving medical care for the acutely ill or injured. In 2014, more than 137.8 million patient visits were made to US EDs, at a rate of 432 per 1000 population.¹ More than half of the 34.5 million inpatient

Disclosure Statement: The authors report no conflicts of interest and no financial disclosures in this work.

^a Division of Emergency Medicine, Washington University School of Medicine, 4523 Clayton Avenue, Campus Box 8072, St Louis, MO 63110, USA; ^b Division of Infectious Diseases, Washington University School of Medicine, 4523 Clayton Avenue, Campus Box 8051, St Louis, MO 63110, USA; ^c Communicable Disease, Clark County Public Health, Center for Community Health, 1601 East Fourth Plain Boulevard, Building 17, PO Box 9825, Vancouver, WA 98666, USA; ^d Infection Prevention, Barnes-Jewish Hospital, Mailstop 90-75-593, 4590 Children's Place, St Louis, MO 63108, USA

* Corresponding author. 4523 Clayton Avenue, Campus Box 8051, St Louis, MO 63110.

E-mail address: syliang@wustl.edu

Emerg Med Clin N Am ■ (2018) ■-■
<https://doi.org/10.1016/j.emc.2018.06.013>

0733-8627/18/© 2018 Elsevier Inc. All rights reserved.

emed.theclinics.com

admissions that occur annually in the United States originate in an ED. During mass casualty events, natural disasters, and public health emergencies, EDs play an integral part in local and regional response, absorbing rapid surges of patients requiring emergent medical attention. On a day-to-day basis, EDs function as a safety net for diverse and often vulnerable populations that might not otherwise receive routine health care. Infectious diseases factor prominently among the reasons patients seek care in the ED. Emergency clinicians must be well versed not only in the diagnosis and management but also in the control and prevention of infectious diseases.

Infection control and prevention have traditionally focused on inpatient health care settings with the objectives of reducing transmission of communicable infectious diseases and averting health care-associated infections. As a hybrid environment bridging ambulatory and hospital care, the ED presents unique challenges to this work.^{2,3} By virtue of a concentrated geographic footprint, ED patients and healthcare professionals (HCP) routinely come in close contact with one another in busy waiting rooms as well as treatment areas. Undifferentiated clinical presentations of infectious disease delay recognition, patient isolation, and HCP use of appropriate personal protective equipment (PPE), increasing the potential for transmission of disease. Variable patient acuity, frequent HCP-patient interactions, and simultaneous care of multiple patients create obstacles to infection prevention practices, particularly when invasive procedures are necessary. Finite inpatient beds and isolation rooms lead to the boarding of patients with infectious illness in the ED. Overcrowding, be it from high patient volume or delays in hospital admission, can lead to the evaluation and treatment of patients in nontraditional environs such as a hallway or other overflow sites. Finally, rapid room turnovers frequently strain environmental cleaning services, allowing the persistence of infectious microorganisms on health care surfaces.

Infection prevention has garnered greater recognition as an essential component of high-quality emergency care.^{2,3} In this review, the authors introduce the emergency clinician to the growing body of literature focused on hand hygiene, transmission-based precautions, environmental cleaning, high-level disinfection and sterilization of reusable medical devices, and the prevention of health care-associated infections in the ED.

HAND HYGIENE

Hand hygiene is a fundamental principle of infection prevention. Health care provider hands have the capacity to transmit pathogens from one patient to another.⁴⁻⁶ Microorganisms present on patient skin, from either infection or colonization, or shed into the health care environment can contaminate the hands of an HCP through direct patient contact or interaction with their environment (eg, bed rails, bed linen, bedside furniture, or patient care equipment). When these microorganisms are able to persist on skin and hand hygiene is lacking or inadequate, HCP hands can transmit them to another patient through direct contact or interaction with their environment. In the absence of visible soiling, routine hand hygiene using an alcohol-based hand rub is an effective and time-efficient means for reducing the cross-transmission of pathogenic microorganisms in health care settings.⁴ Hand washing with soap and water is advised when HCP hands are grossly soiled or when caring for patients with suspected *Clostridium difficile* or norovirus infection, because alcohol-based products lack efficacy and mechanical friction associated with hand washing aids in the removal of these pathogens. Although most emergency clinicians are accustomed to performing hand hygiene upon room entry and exit (ie, “foam in, foam out”) and before any procedure, the Centers for Disease Control and Prevention (CDC) and the World

Download English Version:

<https://daneshyari.com/en/article/11010330>

Download Persian Version:

<https://daneshyari.com/article/11010330>

[Daneshyari.com](https://daneshyari.com)