

### 3.19 PREVENTION OF HEALTHCARE-ASSOCIATED INFECTIONS AND ANTIMICROBIAL RESISTANCE

Healthcare-associated infections (HAIs) impose a significant burden on the healthcare system in the United States, both economically and in terms of patient outcomes. On any given day, approximately 1 in 25 patients in US acute care hospitals has at least 1 HAI, and more than 700,000 HAIs occur annually in hospitalized patients.<sup>1</sup> More than half of HAIs occur outside the intensive care unit.<sup>1</sup> HAIs are among the leading causes of preventable death. These infections often lead to increases in length of hospitalization and excess direct and indirect hospital costs. The overall annual direct medical cost of HAIs to US hospitals is \$28 to \$45 billion.<sup>2</sup> The central aim of infection control is to prevent HAIs and the emergence of resistant organisms. Hospitalists work in concert with other members of the healthcare organization to reduce HAIs, develop institutional initiatives for prevention, and promote and implement evidence-based infection control measures.

#### KNOWLEDGE

*Hospitalists should be able to:*

- Describe acceptable methods of hand hygiene technique and timing in relationship to patient contact in various circumstances.
- Describe the prophylactic measures required for all types of isolation precautions, which include standard, contact, droplet, and airborne precautions, and list the indications for implementing each type of precaution.
- List common types of HAI and describe the risk factors associated with urinary tract infections, surgical site infections, hospital-acquired pneumonia, and blood stream infections.
- Identify major resources for infection control information, including hospital infection control staff, hospital infection control policies and procedures, local and state public health departments, and Centers for Disease Control guidelines.
- Describe the indicated prevention measures necessary to perform hospital-based procedures in a sterile fashion.
- Appreciate that specific infection control practices and engineering controls are required to protect very high-risk patient populations, which may include hematopoietic stem cell transplant and solid organ transplant recipients, from HAIs.

#### SKILLS

*Hospitalists should be able to:*

- Perform consistent and optimal hand hygiene techniques at all indicated points of care.
- Identify and implement indicated isolation precautions for patients with high-risk transmissible diseases or highly resistant infections.
- Identify and use local hospital resources, including anti-

biograms and infection control officers.

- Perform indicated infection control and prevention technique during all procedures.
- Implement precautions and infection control practices to protect patients from acquiring HAIs.
- Implement antibiotic de-escalation when possible on the basis of microbiologic culture results.
- Adopt the use of care bundles when shown to reduce the incidence of HAIs.
- Avoid devices that are more likely to cause HAIs if alternatives are safe, effective, and available.
- Encourage removal of invasive devices, especially central venous catheters and urinary catheters, early during the hospital stay and as soon as is clinically safe to do so.
- Communicate effectively the rationale and importance of infection control practices to patients, families, visitors, other healthcare providers, and hospital staff.
- Communicate appropriate patient information to infection control staff regarding potentially transmissible diseases.
- Lead, coordinate, and/or participate in efforts to educate other healthcare personnel and hospital staff about necessary infection control prevention measures.
- Lead, coordinate, and/or participate in multidisciplinary teams that organize, implement, and study infection control protocols, guidelines, or pathways using evidence-based systematic methods.
- Lead, coordinate, and/or participate in multidisciplinary efforts to develop antibiotic stewardship programs.

#### ATTITUDES

*Hospitalists should be able to:*

- Serve as a role model in adherence to recommended hand hygiene and infection control practices.
- Engage collaboratively with multidisciplinary teams, which may include infection control, nursing service, and infectious disease consultants, to rapidly implement and maintain isolation precautions.
- Engage collaboratively with multidisciplinary teams, which may include infection control, nursing service, care coordination, long-term care facilities, home healthcare staff, and public health personnel, to plan for hospital discharge of patients with transmissible infectious diseases.

#### References

1. Magill S, Edwards JR, Bamberg W, Beldavs ZG, Dumyati G, Kainer MA, et al; Emerging Infections Program Healthcare-Associated Infections and Antimicrobial Use Prevalence Survey Team. Multistate point-prevalence survey of health care-associated infections. *N Engl J Med*. 2014;370(13):1198-1208.
2. Scott DR. *The Direct Medical Costs of Healthcare-Associated Infections in U.S. Hospitals and the Benefits of Prevention*. Division of Healthcare Quality Promotion; National Center for Preparedness, Detection, and Control of Infectious Diseases; Coordinating Center for Infectious Diseases Centers; Centers for Disease Control and Prevention. March 2009.