

Building a Successful Infection Prevention Program



Key Components, Processes, and Economics

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KEYWORDS

- Infection prevention • Infection control • Hospital epidemiology
- Hospital-acquired infections

KEY POINTS

- Infection prevention and hospital epidemiology programs are responsible for monitoring and preventing health care–associated infections in hospitals.
- Infection prevention programs have been shaped by a complex landscape of health care safety, regulatory, reporting, and payment requirements.
- The infection prevention committee is a multidisciplinary team that includes clinical and nonclinical members who meet to review findings, make recommendations, and meet requirements.
- Knowledge of surveillance for infections and the ability to make a business case/economic model are essential components of a successful program.

THE EMERGENCE AND DEVELOPMENT OF REGULATION AND REQUIREMENTS OF INFECTION PREVENTION AND CONTROL

Multistate prevalence surveys of health care-associated infections (HAIs) conducted by the Centers for Disease Control and Prevention (CDC) have provided estimates that 721,800 HAIs occurred in US acute care hospitals in 2011 and accounted for

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75,000 associated deaths.¹ Approximately 1 in 25 patients hospitalized in the United States will develop an HAI every day. The most common types of HAIs were device-associated infections (25.6%), pneumonias (21.8%), surgical site infections (SSIs; 21.8%), and gastrointestinal infections (17.1%).² Total annual costs resulting from HAIs have been estimated at \$9.8 billion in 2009.³ It has also been estimated that 55% to 75% of these HAIs are preventable, translating into potential savings of up to \$5.5 billion and, more important, improved patient outcomes. As a result, HAI prevention is a national priority resulting in a significant evolution of infection prevention and control.⁴

Infection prevention programs (IPP), now a standard in health care, saw their inception in the 1970s and 1980s after studies (such as the CDC's Study on the Efficacy of Nosocomial Infection Control [SENIC]) showed a 32% reduction in HAIs in hospitals with established programs compared with the 18% increases in infection in hospitals without.⁵ This coincided with the development of the National Nosocomial Infection Surveillance System for voluntary reporting of surveillance data in 1970 and the incorporation of requirements for surveillance into the Joint Commission Accreditation for Healthcare Organizations (now called The Joint Commission [TJC]) standards for hospital accreditation in 1976. Since this time, there have been several groups that have had direct influence on the development of IPP ranging from professional societies (such as the Society for Healthcare Epidemiology of America [SHEA] and the Association of Professionals in Infection Control and Epidemiology [APIC]), government agencies (such as the CDC, Occupational Safety and Health Administration, and Department of Health and Human Services), nonprofit organizations, accreditation bodies, and payers (such as the Centers for Medicare and Medicaid Services [CMS]).⁶ This complex landscape for infection prevention has led to the development of quality initiatives, legislative reforms, shifts in payment for HAIs, and an increased demand for transparency through public reporting of HAI data.⁷

IPPs have focused on 2 major goals: (1) the protection of the health care worker and (2) patient safety initiatives. Regulatory oversight of hospital infections dramatically increased in the late 1980s and early 1990s as the result of health care worker safety concerns, pertaining to the risk of occupational exposure to human immunodeficiency virus and hepatitis B virus. In 1991, the Occupational Safety and Health Administration released Standard 29 CFR Bloodborne Pathogens-1910.1030, which concluded that blood-borne pathogen exposure could be minimized or eliminated by a combination of administrative, engineering, and work practice controls (such as personal protective equipment, training, and vaccines).⁸ This was followed by additional legislative mandates aimed at increasing respiratory protection (use of respirators requiring fit testing) for workers at significant risk of incurring *Mycobacterium tuberculosis* infection (which today is regulated by Occupational Safety and Health Administration standards). Components of this program include the appropriate use of and the medical clearance to wear a respirator.^{9,10} Over the past several decades, infection prevention and control professionals have been charged with ensuring compliance of these and similar health care worker safety initiatives (as seen in the recent preparedness efforts for highly communicable diseases, such as Ebola).

The prevention of HAIs gained much public attention with the publication of several studies that categorized these infections as avoidable and preventable, and have helped to shape current prevention initiatives. The Institute of Medicine's 1999 report "To Err is Human: Building a Safer Healthcare System" and the subsequent 2003 report "Transforming Healthcare Quality" focused on HAI prevention as one of its priority areas for national action.¹¹ Subsequently, several organizations have advocated for or required HAI prevention and reduction initiatives. For example, in 2005 the Institute

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