Avoiding the Drama of Hospital-Acquired Infections

By Barbara M. Soule

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A patient contracting a life-threatening infection in the hospital may seem like a movie plot, but it's all too common. Practical strategies can "edit out" care-associated infections.

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It often reads like a movie script: A patient comes to a hospital to be treated for an illness and then contracts a serious infection, requiring a lengthy stay, experiencing additional suffering and needing extra attention. While movies may present extreme scenarios, there's an unsettling truth to this Hollywood scene. Patients sometimes *do* get sicker while in the hospital.

Today's health care institutions are faced with increasingly complicated patient care scenarios. From multidrug-resistant bacteria and serious device-related infections to the potential for epidemics and even a pandemic, today's health care personnel and administrators cope with many challenges to provide the best care possible and to ensure patients don't experience an infection or other adverse outcome while in their charge.

Those challenges include a constantly changing, complex environment; more compromised patients; resource limitations; and growing regulatory requirements. The good news is that hospitals *can* achieve quality and safety for patients through effective and practical infection prevention and control (IPC) strategies.

Setting the Stage: Evolving Concerns

Current estimates indicate that health care-associated infections (HAIs) account for approximately 1.7 million infections and 99,000 deaths each year, making them one of the 10 leading causes of death in the United States (1). Published reports also estimate that at least one-third of HAIs could be prevented using current recommendations. More recent advances using "bundled" best practices have demonstrated that hospitals can eliminate some infections for extended periods of time (2, 3, 4).

Given continuing, and sometimes increasing, infection rates and the potential to minimize or avoid infections using evidence-based practices, infection prevention and control is becoming increasingly visible and gaining attention among the public, lawmakers, accreditation organizations and health care professionals at all levels.

Besides the obvious quality of care concerns these infection statistics reflect, there are also significant financial repercussions for the institution. Estimates put excess health care costs for HAIs at between $4.5 billion and $5.7 billion (U.S.) annually (5).

The Association for Professionals in Infection Control and Epidemiology Inc. (APIC) recently reported that, contrary to previous opinions, HAIs are not revenue neutral and in fact have a profound impact on the hospital bottom line. The study evaluated 1.69 million admissions from 77 U.S. hospitals and concluded that inpatients with infections reduced net margins by $286 million—a critical loss for organizations that are already feeling budgetary pressures and constraints (6).

Outside the fiscal realm, there are increasing challenges for treating HAIs, especially from antibiotic-resistant bacteria. The growing prevalence of infections caused by methicillin-resistant *Staphylococcus aureus* (MRSA) is of paramount importance. In 1972, MRSA accounted for only 2 percent of all *Staphylococcus aureus* infections, but now it is responsible for 50 percent to 70 percent of these infections (7).

Some estimates indicate that more than half of all skin infections treated in emergency rooms result from MRSA acquired in the community. Until recently, the inability to rapidly identify and treat MRSA has led to increased hospital stays and more fatalities. What's more, a recent report from the Centers for Disease Control and Prevention (CDC) revealed that serious invasive MRSA infections are more pervasive than previously believed and are an urgent health care problem (8).

In addition to the typical challenges of preventing health care-associated infections, emerging pandemic and bioterrorism possibilities emphasize the critical role proper infection control plays in health care organizations and the community. Individual institutions must evaluate their specific environments, identify practical ways to help minimize the spread of infection should a pandemic or bioterrorist situation arise, and work closely with community resources to coordinate infection prevention efforts in the event of a pandemic or other emergencies.

Changing the Script: Practical Solutions

IPC professionals are like script writers. They identify and evaluate risks and, with others, design solutions to minimize those risks. These interventions, or new scenarios, can change and improve the outcomes of care. IPC professionals must engage colleagues, leaders and others as active partners in reducing HAIs. Making HAIs a priority for all staff and services within the institution is critical for an effective IPC program and the best results.

There are many practical and effective steps an organization can take to help reduce the risk of HAIs:

Designate a committee or other multidisciplinary group to oversee the infection prevention and control program. This group, often the infection control (IC) committee, helps identify program priorities, guide activities, support best practices, and meet IC standards and regulations. In many organizations, infection prevention and control is a frequent topic for the patient safety and quality committee as well as other groups responsible for patient care, employee health, the environment and emergency preparedness.

Assess infection risks in the organization. Include issues related to patients, staff, the environment, different care settings, special populations and significant organisms as well as potential emergencies. Also include risks associated with the geographic location and community environment of the organization. this assessment to systematically identify the infection prevention and control priorities for the organization (9).

Create an infection prevention and control plan based on the prioritized risks. Include routine and special activities as well as methods for managing worst-case scenarios (epidemics). Incorporate goals and objectives to measure progress. Keep the plan simple and use this process as an opportunity to involve leaders, caregivers, support staff and appropriate representatives from the community.

Educate clinical and administrative leaders throughout the organization and seek their participation in the design and implementation of the IPC program. The more senior leaders are engaged in and committed to the design and evaluation of the program, the more likely it is that goals will be achieved.

Incorporate the infection prevention and control program as an essential component of safety and performance improvement. Integrating IPC in the overarching organizational performance and safety plans ensures its position as an influential factor in achieving safe patient care.

Develop and maintain a surveillance system based on sound epidemiologic principles. In conjunction with the infection prevention and control oversight committee, the organization should develop a method to assess IPC practices, infection, trends and vulnerable areas. Surveillance is a fundamental component of IPC and will identify practices that can be improved (10).

Use infection prevention and control data to guide practice and performance improvement. Analyzing infections, high-risk procedures, epidemiologically significant organisms, evidence-based practices and employee health issues unique to the organization will help guide change. For example, the Joint Commission recently introduced a new infection control standard (4.15) that requires accredited organizations to offer influenza vaccinations to staff, volunteers and licensed independent practitioners with close patient contact. Organizations must also collect and analyze immunization rates and implement methods to help improve compliance (11).

Evaluate infection prevention and control practices. Once a program is established and implemented, it’s essential to periodically evaluate whether goals and objectives are being achieved. What works one year may not work the next, and practices may need to change while new practices are introduced. Evaluating the program at least annually, and more often if appropriate, will help determine whether the IPC program is on target (12).

Plan for infection emergencies. The health care organization is an important resource for the community during stressful and challenging health care events. Should there be an epidemic, pandemic or other major occurrence involving infectious agents, the organization’s ability to deliver care with decreased services and expanded needs will depend in part on how well the organization has planned for these events. Each organization that will care for patients during an emergency should have a plan that has addressed infection control issues such as supplies, personnel, communication, utilities, patient placement, triaging, isolation and barrier precautions, and support services (13).

Review and use best practices for infection prevention and control throughout the entire organization. Hand hygiene is critical to reducing HAIs. Although seemingly simple, achieving hand hygiene compliance is often difficult. Using a multimodal approach and understanding staff behavior, motivation and barriers are essential (14, 15).

Monitor emerging issues—like antibiotic-resistant bacteria—and implement appropriate strategies by looking to the scientific literature, evidence-based guidelines and IPC experts. Take into account new research, standards and evolving discussions from organizations and agencies such as the CDC, APIC, Society for Healthcare Epidemiology of America (SHEA), Infectious Disease Society of America and the Joint Commission.

APIC recently held a summit "designed to redefine the role infection prevention will play in the health care system of tomorrow." Participants discussed new technologies to screen patients for bacteria, the exclusive use of private hospital rooms, individual equipment for each patient and other measures for safer care, including how these approaches will affect hospitals fiscally (16).

The CDC has recently published updated guidelines for managing multidrug-resistant organisms and isolation of patients (17, 18). SHEA and APIC generate guidelines and position papers on a wide range of topics relevant to IPC (19, 20, 21). Watching for trends and new ideas from IPC leaders and societies will help keep prevention programs current.

A New Plot

An effective infection prevention and control program plays a critical role in the safety, efficiency and overall success of a health care institution. Taking basic steps to ensure that appropriate infection prevention and control protocols are instituted and sustained and using best practices will benefit patients and staff.

Wouldn't it be nice if the continued perseverance and hard work from the IPC community sent Hollywood looking for a new script?

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