

Health Services Research Impact

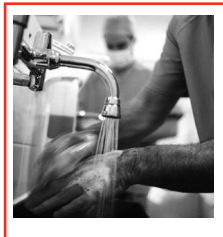
Quality and Safety

SNAPSHOT OF SUCCESS

Preventing Health Care-Associated Infections and Antimicrobial Resistance

THE ISSUE

Health care-associated infections (also known as nosocomial infections) are those that are acquired during the course of a patient's encounter with the health care system, whether at a hospital, clinic, or doctor's office. These infections pose a serious risk to anyone receiving medical care in the United States. In hospitals alone, these infections occur in approximately two million patients per year. In fact, the incidence of nosocomial infections has recently increased, due in part to a rising prevalence of resistance to antimicrobial drugs, an increase in the intensity of hospital treatment, and changes in clinical practice and health care staffing. Moreover, these infections cost the U.S. health care system an estimated \$4.5 billion and contribute to approximately 90,000 deaths annually, or one death every six minutes.



The systematic collection and analysis of data on health care-associated infections have yielded critical, evidence-based information that can improve infection prevention and control.

According to the Centers for Disease Control and Prevention (CDC), health care-based strategies that combine monitoring, prevention, and control of health care-associated infections have been underway since the 1950s.

Among the recent initiatives is the Prevention Epicenters program, a partnership between the CDC and seven medical centers that began in 2000. The Epicenters have undertaken a number of projects to enhance patient safety by implementing proven infection-control strategies, including using electronic data to detect infection patterns and interventions to encourage hand washing between patient contacts. "The Epicenters program allows us to take what is known about preventing infections and apply it in a practical, real-world setting," says Jerome Tokars, M.D., M.P.H., a medical epidemiologist at CDC.

For example, an educational campaign developed by the Washington University Prevention Epicenter in St. Louis explains to health care professionals the risk factors for central catheter-associated bloodstream infections among intensive care patients and methods for minimizing them. Preliminary results show a substantial reduction in the incidence of infection.

"We were able to document a significant change in physician practice because of the intervention," says David K. Warren, M.D., assistant professor of medicine, Washington University School of Medicine, and associate hospital epidemiologist at Barnes-Jewish Hospital in St. Louis. "Our project

helps establish benchmarks. If top management realizes their unit is out of synch with other units across the country, it might motivate them to take action." The module, piloted in St. Louis, is available through the Association for Professionals in Infection Control and Epidemiology, Inc.

Since 1998, a CDC-funded project has used innovative computer-based methods to monitor and prevent infections. For the Chicago Antimicrobial Resistance Project (CARP), researchers collaborated with three public hospitals of the Cook County Bureau of Healthcare Services to develop a clinical data warehouse using the hospitals' information systems. The data were used to monitor the prevalence of drug-resistant bacterial infections, to measure use of antibiotics, and to detect health care-associated bloodstream infections. The warehouse also enables researchers to assess the cost associated with treating the infections and to detect errors in prescribing antibiotics.

Continued on back page

Four Strategies to Prevent Antimicrobial Resistance



Visit www.cdc.gov/drugresistance/healthcare to learn about the four strategies of CDC's Campaign to Prevent Antimicrobial Resistance in Healthcare Settings.

Quality and Safety (continued)

This pioneering demonstration project suggests that automating surveillance, transferring data, and reporting infections can significantly improve infection control. Through CARP, a series of quality improvement strategies was launched to decrease antimicrobial resistance and improve antibiotic prescribing and infection control practices.

“CARP will help us address the threat of antimicrobial resistance by developing strategies to prevent the emergence and spread of antimicrobial-resistant microorganisms in hospitals,” says Robert A. Weinstein, M.D., chair, Division of Infectious

Diseases, Stroger Hospital of Cook County and professor of medicine, Rush Medical College.

The challenges involved with introducing interventions across many health care facilities are numerous and complex. “If implementing guidelines in a certain way leaves too many patients vulnerable to health care-associated infections, then we must change our approach,” says Tokars. “It’s important to learn from these experiences not just what works, but what doesn’t.”

FACTS

Over the past decade, hospitals participating in the National Nosocomial Infections Surveillance System, a CDC-sponsored surveillance system that helps hospitals monitor trends in health care-associated infections, experienced a 30 to 55 percent decline in targeted infections in intensive care units.

– Centers for Disease Control and Prevention

The more widely antibiotics and antiviral medications are used, the more likely it is that drug-resistant microorganisms will emerge.

– Infectious Diseases Society of America

Experts agree that handwashing is the simplest, most effective way to reduce the risk of spreading infection. Yet a recent survey revealed that up to 30 percent of travelers don’t wash their hands after using public restrooms at airports.

– American Society for Microbiology

RESOURCES FOR PATIENTS AND PROVIDERS

Campaign to Prevent Antimicrobial Resistance in Healthcare Settings
www.cdc.gov/drugresistance/healthcare

Hand Hygiene in Healthcare Settings
www.cdc.gov/handhygiene

Healthcare Infection Control Practices Advisory Committee
www.cdc.gov/ncidod/hip/HICPAC/factsheet.htm

Infectious Diseases Society of America
www.idsociety.org

Association for Professionals in Infection Control and Epidemiology, Inc.
www.apic.org

Joint Commission on Accreditation of Healthcare Organizations
www.jcaho.org/accredited+organizations/patient+safety/npsg.htm

American Society for Microbiology’s Clean Hands Campaign
www.washup.org

The Society for Healthcare Epidemiology, Inc.
www.shea-online.org

What is health services research?

Health services research is the multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviors affect access to health care, the quality and cost of health care, and ultimately our health and well-being. Its research domains are individuals, families, organizations, institutions, communities, and populations.

— AcademyHealth, 2000

FURTHER READING

Burke, J.P. “Infection Control – A Problem for Patient Safety,” *The New England Journal of Medicine*, Vol. 348, No. 7, October 15, 2002, pp. 651–6.

CDC. “Monitoring Hospital-Acquired Infections to Promote Patient Safety – United States, 1990–1999,” *Morbidity and Mortality Weekly Report*, Vol. 49, No. 8, March 3, 2000, pp. 149–53. Also available at www.cdc.gov/mmwr/preview/mmwrhtml/mm4908a1.htm.

Gerberding, J.L. “Hospital-onset Infections: A Patient Safety Issue,” *Annals of Internal Medicine*, Vol. 137, No. 8, October 15, 2002, pp. 665–70. Also available at www.annals.org/cgi/content/full/137/8/665.



AcademyHealth’s campaign to raise awareness of the value and impact of health services research

www.academyhealth.org/connectingthedots

AcademyHealth
1801 K Street, NW, Suite 701–L
Washington, DC 20006
tel: 202.292.6700 • fax: 202.292.6800
www.academyhealth.org