Infection Prevention Programs

Patient Care
Research
Education
Yet nearly 100,000 people in the United States die each year from infections directly related to their medical care. The epidemic of healthcare-associated infections kills more Americans each year than breast cancer, motor vehicle accidents, and HIV infection combined.

With years of clinical experience protecting patients at the University of Chicago Medical Center and as national leaders in infection prevention research, experts at the University of Chicago are uniquely positioned to meet this challenge.
To combat the epidemic of healthcare-associated infections, the University of Chicago is focusing on three key areas:

- Promoting Safe, High-Quality Patient Care
- Translational Research
- Education of the Wider Healthcare Community
Patient Care

UCMC Infection Control Program
Staffed by experienced professionals in infection prevention, nursing, clinical microbiology, and public health, the University of Chicago Medical Center Infection Control Program is responsible for protecting patients, staff, and visitors from contagious diseases. Recent achievements include:

- Dramatic reductions in hospital-acquired bloodstream infections and ventilator-associated pneumonia among Medical Center patients
- Sustained increases in hand hygiene compliance, placing the Medical Center among other national leaders
- Timely and successful investigations of hospital-based outbreaks
- Unified and comprehensive response to the 2009 H1N1 influenza pandemic

University Infection Control and Prevention (UICP)
Initially supported by a grant from the University of Chicago’s Department of Medicine, UICP offers local and regional hospitals and other facilities outreach programs in infection control and prevention. Tailored to the specific needs of participating institutions, UICP provides a new and intensive approach to infection control, focusing on location-specific priorities to develop an individualized plan that is evidence-based, sustainable, and integrated with routine operations. Specific services offered by UICP include:

- Institutional risk assessment and gap analysis
- Support for outbreak investigation
- Staff education and mentoring programs
- Assistance with local performance-improvement initiatives

Adult Intensive Care Unit Central Line–Associated Bloodstream Infection Rates 2003–2010

This chart shows the rate of central line–associated bloodstream infections in intensive care unit patients at the University of Chicago Medical Center over the last seven years. Because of effective infection prevention programs, the overall trend of infections has declined steadily.
Research

The infection prevention research programs at the University of Chicago are multidisciplinary, featuring collaborations not only with clinical experts in infectious diseases, nursing, and clinical microbiology, but also with engineers, computer scientists, design specialists, behavioral scientists, economists, and public health experts. The overall strategy is to better understand the epidemiology of infections and discover strategies that can be applied rationally, practically, and equitably to prevent and even eliminate healthcare-associated infections in the wider community.

Radio Frequency Identification

Hand hygiene is a basic infection control practice that everyone expects from their healthcare providers, and yet compliance remains low across the world. University of Chicago infection experts believe that this can be attributed to the inability to monitor practice effectively or efficiently and the lack of individual-specific feedback on performance. Radio Frequency Identification technology (widely used in applications such as inventory tracking and automated toll payment) offers the opportunity to electronically monitor hand hygiene 24 hours a day, 7 days a week with accurate individual-specific hand hygiene compliance rates. The University of Chicago is leading a project to test this technology in our medical intensive care unit in an effort to protect some of our most vulnerable patients and to better understand the role of individual feedback in shaping clinician behavior.

Giving for Performance

Hand hygiene promotion programs are common in hospitals around the world, but at the University of Chicago Medical Center we are trying a completely new way to encourage our providers to wash their hands. Like raising money for a walk-a-thon, contributions from philanthropic donors are committed to specific care areas and tied not to how many miles are walked, but to how often clinicians perform hand hygiene. Secret hand hygiene monitors observe healthcare personnel on participating units and the amount donated is based on hand hygiene compliance. Donations are used to improve care in ways that are above and beyond and chosen by the providers themselves. Some recent options included newspaper service for patients, a refurbished patient lounge for oncology patients, blanket warmers, and art and music therapists. We believe that this extra incentive motivates clinicians above and beyond the usual posters and educational sessions while directing donor dollars to improve the experiences of patients and providers.

MRSA Research

MRSA, or methicillin-resistant *Staphylococcus aureus*, is a bacterium that causes a number of hard-to-treat infections. Each year, 90,000 Americans suffer from invasive MRSA infection. About 20,000 die. Many are children. Since 2004, Dr. David has studied the epidemiology of MRSA in the U.S., including studies in jails, rural Alaska, at academic medical centers, and in cystic fibrosis patients. In collaboration with the University’s MRSA Research Center, he currently is working on a study aimed at limiting the transmission of MRSA in the Dallas County Jail and on a project aimed at modeling MRSA transmission in the city of Chicago.
Fellowship Training
Postdoctoral fellows in the Section of Infectious Diseases often choose to undertake dedicated training in hospital epidemiology and infection control with the aim of pursuing a career in academic infection prevention. The fellow curriculum includes extensive experience in epidemiological research, formal training in biostatistical methods, and clinical experience in infection prevention.

Curriculum Innovation and Continuing Education
Always working to create smarter and more creative methods of providing education for clinicians and trainees at all levels of experience, our award-winning educators are committed to promoting evidence-based practices to prevent infection. From individually targeted online courses for Medical Center staff and participation in seminars for undergraduate students to creation of cutting-edge continuing education modules for established professionals, we are shaping the future of infection prevention.

Mentoring for Infection Preventionists
Unique among hospital-based programs and sought after by practitioners from around the globe, University of Chicago infection prevention specialists offer on-site tutoring and mentoring for professionals in the field at all levels of training and experience.

We do not have the luxury of choosing to confront healthcare-associated infections. We have already been chosen. Dr. Stephen Weber
Meet the Experts

Stephen Weber, MD
Associate Professor of Medicine
Stephen Weber, Associate Professor of Medicine, is the Medical Director of Infection Control and Clinical Quality and serves as Chief Healthcare Epidemiologist at the University of Chicago. He specializes in antimicrobial resistant infections in vulnerable populations, particularly geriatric patients. Dr. Weber’s research interests include the diffusion of best practices in infection prevention, and he has authored multiple studies on the prevention and management of healthcare-associated infections.

Sylvia Garcia-Houchins,
RN, MBA, CIC
Director, Infection Control Program
Sylvia Garcia-Houchins is Director of the Infection Control Program at the University of Chicago Medical Center and has provided infection prevention and control consultation in a variety of healthcare settings, including hospitals, clinics, long-term care, and dialysis centers.

Jennifer Burns, CPNP, APN
Certified Pediatric Nurse Practitioner
Jennifer Burns provides pediatric infectious diseases inpatient consultation service at the University of Chicago Medical Center. The consultative care of these patients is often complex and includes management of patients in the neonatal and pediatric ICUs, and care of children with HIV and AIDS, as well as care of oncology and transplantation patients.

Michael Z. David, MD
Instructor of Medicine
Michael Z. David is Instructor in the Departments of Medicine, Pediatrics, and Health Studies at the University of Chicago. He is interested in the determinants of the fitness of methicillin-resistant Staphylococcus aureus (MRSA) strains, as well as identification and study of specific populations at high risk for asymptomatic carriage of MRSA.

Emily Landon Mawdsley, MD
Instructor of Medicine
Emily Landon Mawdsley is Instructor of Medicine in the Section of Infectious Diseases and Global Health, the Associate Healthcare Epidemiologist, and Medical Director of the Antimicrobial Stewardship Program at the University of Chicago. Her research focuses on understanding behavioral determinants of adherence to best practices in infection prevention, especially with respect to hand hygiene and antimicrobial use.

Benjamin Brielmaier, PharmD
Benjamin Brielmaier, Clinical Pharmacist in Infectious Diseases, provides clinical services to the adult infectious diseases consultation services and institutional antimicrobial stewardship programs.

Kenneth Alexander, MD, PhD
Professor of Pediatrics
Kenneth Alexander, Professor of Pediatrics, serves as the Chief of the Section of Pediatric Infectious Diseases at the University of Chicago. He is the co-chair of the Committee on Adolescent Immunization for the Illinois Chapter of the American Academy of Pediatrics. He is also Professor of Pediatrics, and Professor of Radiation and Cellular Oncology at the Pritzker School of Medicine, University of Chicago. He also serves as the Chief Quality Officer for the University of Chicago Medical Center.

Megan Stojcevski
Research Project Professional, Infectious Diseases and Global Health Section
Megan Stojcevski is Project Coordinator in Infectious Diseases and helped develop the University Infection Control and Prevention project. She began working at the University on a joint collaboration project with the CDC, which studied the effects of mandatory screening of MRSA legislation recently implemented in Illinois hospitals.
Find out more

To find out more about our work to eradicate healthcare-associated infections and how you can help, visit http://www.infectionprevention.uchicago.edu.