

## EXPLORING NEW TREATMENTS AND INNOVATIONS

From garden-variety influenza to human metapneumovirus, the Division of Infectious Diseases at the University of Kansas Medical Center (KUMC) has been engaged in bench-to-bedside research on a broad array of illnesses that are associated with infection for more than 50 years. Division Director Daniel Hinthorn, MD, was mentored by the division's founder Chien Liu, MD, professor emeritus of medicine, widely recognized as one of the physician scientists who helped discover the etiology of primary atypical pneumonia.

**"I was drawn to the field because of the broad-encompassing nature of infectious disease,"** said Hinthorn, noting that every organ system has the potential for infection, thus requiring a deep knowledge of internal medicine. And he's seen how a person's life could be derailed by something as seemingly innocuous as *Clostridium difficile*, and then find immediate and significant improvement with effective treatment.

The physicians in this specialty conduct NIH-funded research, industry-sponsored studies, as well as investigator-initiated projects.

Lisa Clough, MD, leads the Infectious Diseases Clinical Research Program with a focus on the safety and effectiveness of anti-microbial treatments; therapeutic and prophylactic vaccines; the study of influenza, HIV and other viruses; the mechanisms of disease production in pneumococcal infections; stem cell transplant and complicated lung infections.

There are currently 14 active studies in various stages of completion being undertaken by the division, including:

- Wissam El Atrouni, MD, worked with fellows on "Yield of Sonicated Cultures in Diagnosing Orthopaedic Hardware Infection," and presented at the Infectious Disease Society of America conference in October 2012. Now in analysis, the study focused on improving treatment of infections in patients who had received orthopedic hardware. "Many times, cultures taken from metal hardware were negative, even though we knew there was an infection," said El Atrouni. They found that when hardware was cultured in saline solution using ultrasound, bacteria could be grown in liquid, enabling a more effective diagnosis of infection.
- Dana Hawkinson, MD, is studying ways to improve diagnosis and treatment of infections in immunocompromised populations following bone marrow and organ transplants. He has completed a descriptive study of human metapneumovirus, a respiratory infection first discovered in 2001, which can complicate patients with weak immune systems. His retrospective study evaluated patients receiving bone marrow transplants at KUMC.
- Stephen Waller, MD, is developing a device to prevent the misuse of syringes and

needles. Such misuse, primarily in the outpatient setting, has led to outbreaks of bloodborne viruses such as Hepatitis C and HIV. Waller is working with KUMC's Institute for Advancing Medical Innovations on plans to bring the device to market, along with another device to minimize catheter-related infections.

Throughout the division, physicians are working to advance the science of infectious diseases through basic and clinical research, seeking answers that lead to new treatment opportunities and improved outcomes for patients. For this reason, Dr. Hinthorn champions the broad knowledge of his faculty to "provide key insights in diagnosing difficult disease symptoms and providing efficacious treatment plans that help patients regain their health."



Daniel Hinthorn, MD