

Infectious Diseases in the 21st Century: No End in Sight

In the late 1970s, Dr. Robert Petersdorf, an international leader in infectious diseases, stated the following in reference to graduating infectious diseases fellows: “Even with my great personal loyalty to [the discipline of] infectious diseases, I cannot conceive of a need for 309 more infectious diseases experts unless they spend their time culturing each other.”¹

It’s hard to believe that infectious diseases were so predicted recently to become a historical footnote for future generations. The subspecialty’s influence on modern medicine is far from declining; on the contrary, the field of infectious diseases will remain clinically important for the foreseeable future, both in the ED and other medical settings.

The advent of AIDS has had a significant role in the increasing scope of infectious diseases. The knowledge gained in 3 decades of study is impressive, and it has resulted in a niche for health care professionals specializing in the care of patients with HIV. Targeted, monitored HIV therapy has contributed to a decline in disease progression and death from AIDS in the US, but we still have a long way to go: More than 1 million HIV-infected people are estimated to be living in the US, and approximately 56,300 new infections occur annually.² CDC-recommended routine screening

for HIV in the ED and other health care settings will hopefully make a significant impact on these numbers in the future.³

In recent years, emphasis on preventive care has led to an increase in the number of vaccines recommended for children and adolescents in the US. The current schedule recommends immunization against measles, mumps, rubella, hepatitis A, hepatitis B, pertussis, *Haemophilus influenzae* type B, diphtheria, polio, tetanus, *Rotavirus*, *Pneumococcus*, *Meningococcus*, influenza, varicella-zoster, and human papillomavirus.⁴ The dramatic decline in the number of people infected by some of these organisms is testament to the importance of an effective vaccination campaign—but current circumstances serve as a timely reminder that more work remains. The 2009 H1N1 pandemic flu virus highlights the importance of an effective, efficient, and expeditious immunization program.

This issue of EM examines a topic of major concern: the complications of antibiotic use. Antibiotics allow for the emergence of resistance. Dr. Lee Engel discusses multidrug-resistance in gram-negative bacteria and the increased costs, morbidity, and mortality associated with infection. *Clostridium difficile*-associated diarrhea secondary to antibiotic use is the major cause of nosocomial diarrhea; Dr. James Morris discusses the emergence of a hypervirulent

strain that has resulted in increased incidence and severity of infection. Both articles remind us of the need to develop newer classes of antibiotics, as well as to reinforce effective antibiotic stewardship and infection-control measures.

The ease of international travel, increased availability of imported foods, need for more effective infection-control measures (including universal reinforcement of hand washing), and worldwide human and animal use of antimicrobials all ensure that infectious diseases will continue to challenge public health. The ED will remain a sentinel site for many of these infections and will bear witness to the emergence and prominence of infectious diseases in the 21st century. □

REFERENCES

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