INFECTIOUS DISEASES

One of the earliest contributions of VA researchers to medical science was the establishment of effective treatments for tuberculosis back in the 1930s and 1940s. Since then, VA scientists have helped advance the understanding, prevention, and treatment of numerous infectious diseases, ranging from the common cold to major public-health threats such as AIDS and influenza. Research also focuses on infectious diseases that may put deployed troops at risk abroad, such as malaria and leishmaniasis.

EXAMPLES OF VA RESEARCH ADVANCES

HEART PROBLEMS AFTER PNEUMONIA—Older men hospitalized with pneumonia may be at risk of heart problems. A San Antonio VA team analyzed data from 50,119 Veterans with an average age of 77. Some 22 percent had a cardiovascular event within 90 days of hospital admission. Congestive heart failure and arrhythmia were the most common events: Each affected 10 percent of Veterans. Another 1.5 percent had a heart attack, and 0.2 percent had a stroke. Other studies have also suggested an increase in cardiovascular events after pneumonia, and the authors suggest further studies to determine whether interventions can reduce the frequency of these events.

DISCOVERING ANTIMALARIAL DRUGS—Malaria infects about 250 million people worldwide, including troops in Afghanistan. A Portland, Ore., VA team is seeking to develop a new class of drugs to treat the disease, which is now resistant to quinine and chloroquine. The group is also synthesizing a chemical cousin of chloroquine that would work against malaria without the problem of drug resistance. They also are designing and testing drugs called quinolones, which would destroy the malaria parasite while leaving human cells untouched.

NEW MODEL FOR DRUG SCREENING—San Antonio VA researchers have invented a model to screen compounds for activity against visceral leishmaniasis, a parasitic disease spread by the bite of a sand fly. Using the model, the team screened 4,035 compounds. They found 84 with promising activity; 69 of these are novel compounds. Visceral leishmaniasis is the most serious form of leishmaniasis, and can be fatal. Current therapies for visceral leishmaniasis are toxic and expensive, and may induce drug resistance. There have been about 3,000 cases of leishmaniasis in U.S. troops since 2003; almost all were the common and less-severe cutaneous form.

★ **FACTS ABOUT INFECTIOUS DISEASES—***Infectious diseases are generally classified according to the source of the infection. The major types are viral, bacterial, parasitic, and fungal. In the VA health care system, two viral diseases of special concern are HIV/AIDS and hepatitis C. VA maintains special websites devoted to these conditions: www.hiv.va.gov and www. hepatitis.va.gov. VA investigators are studying these and a range of other infectious diseases, working toward developing effective new preventive strategies, vaccines, and drugs. In recent years, bioterror—the use of bacteria, viruses, or toxins to harm people—has become a concern for public health officials, and VA hospitals take part in a national program called BioSense to help track and investigate suspected bioterror events.*