

20th-Century Medicine Books

Infectious Diseases Books

Infectious diseases that historically have killed millions of people each year were conquered early in the 20th century by improved sanitation, antibiotics, and vaccines.

German physician Paul Ehrlich showed around 1910 that a chemical compound, arsphenamine, could treat syphilis. He opened the era of chemotherapy, in which physicians use chemical compounds that act selectively to target specific diseases.

In the early 1930s, German and French scientists showed that sulfonamide was effective in treating streptococcal bacteria infections. This discovery led to the first family of so-called wonder drugs, the sulfonamide antibiotics. In 1938 British biochemists Howard Florey and Ernst Chain purified penicillin, the bacteria-destroying compound that Alexander Fleming observed in mold ten years earlier. Streptomycin, the first antibiotic for tuberculosis, was discovered in 1944 by American microbiologist Selman Waksman. Dozens of other antibiotics were subsequently discovered, each stronger and more effective against a broader range of bacteria.

Scientists learned more about how the body's immune system protects itself from infections, resulting in new tests for diagnosing infectious diseases and new vaccines to prevent them. The Wasserman blood test for syphilis was developed in 1906 and the tuberculin skin test for tuberculosis appeared in 1908. By the 1930s new techniques for growing viruses in the laboratory led to vaccines against viral diseases. These included a yellow fever vaccine in the late 1930s and the first effective influenza vaccine in the 1940s. The American physician Jonas E. Salk developed a polio vaccine in 1954. Later virologist Albert B. Sabin developed a safer oral polio vaccine, which was in wide use by the 1960s. Later came vaccines for other childhood diseases, including measles, German measles, mumps, and chicken pox.

Infectious diseases, once thought conquered by antibiotics, became a major concern again in the 1990s. New forms of tuberculosis and other diseases resistant to antibiotics spread. Concerns also arose over new or newly recognized microbes, such as human immunodeficiency virus (HIV), the cause of acquired immunodeficiency syndrome (AIDS), which became epidemic in 1981. As human populations grow and expand into wilderness areas, humans and animals come in closer contact. A number of diseases transmitted from animals have become problematic in recent years, including the hemorrhagic fevers caused by the Ebola and Marburg viruses, hantavirus pulmonary syndrome, and Lyme disease. In other areas, physicians recognized that an easily curable bacterial infection caused most peptic ulcers, a disease once blamed on stress and diet.