

the microorganism, the human host, and the environment, resulting in spread or greater virulence. In some cases, emergence is more strictly “reemergence” of a known disease after a stabilization or decline of its incidence: such is the case for cholera in Latin America; tuberculosis, much of which is now multi-drug-resistant; for antibiotic-resistant pneumococcal pneumonia; and for group A streptococcal disease (which killed puppeteer Jim Henson).

Emerging microbial threats arise because of a number of factors operating singly or in combination:

- changes in human population density and distribution;
- changes in society or human social behavior;
- changes brought about by technology and industry;
- changes resulting from economic development and land use;
- microbial adaptation and change; and
- breakdown of public health measures.

Vigilance against emerging infections is a critical component of the Nation’s overall effort to combat infectious diseases (Centers for Disease Control and Prevention, 1994; excerpts from this document are included here in appendix 4).

#### **GLOBAL COLLABORATION AGAINST INFECTIOUS DISEASES: U.S. PARTICIPATION**

There are several reasons in addition to those mentioned above why the United States has historically been a major force for global collaboration to control infectious diseases:

- International collaboration has proved successful in combating infectious diseases, as evidenced by the worldwide campaigns to eradicate smallpox and poliomyelitis.
- It has been demonstrated that significant cost savings in health care can be achieved when a disease is globally eradicated because there is no longer a need to immunize people against the causative agent (see section XI).
- Many studies have shown that the control of infectious diseases can help promote economic development abroad, which is an important foreign policy goal of the U.S. government (see, for example, World Bank, 1993).
- With the increasing globalization of medical research, many breakthroughs in infectious disease control are possible only through collaborative international research, often involving institutions in both industrialized and developing countries.
- There is growing international awareness of the humanitarian obligations of industrialized countries to share the benefits of medical research with poorer countries without delay.