

## PANDEMIC INFLUENZA PLANNING

### WHAT IS THE PUBLIC HEALTH ISSUE?

New strains of influenza viruses can emerge unpredictably and spread rapidly and pervasively through susceptible populations. A significant shift in the virus's genetic structure could mean that the entire population would be vulnerable. Influenza pandemics, or global epidemics, occurred three times during the 20th century: in 1918, 1957, and 1968. The 1918 pandemic resulted in more than 500,000 deaths in the United States and over 20 million deaths globally. Experts agree that future pandemics of influenza are likely, if not inevitable. In the United States alone, preliminary estimates indicate that an influenza pandemic would cause between 89,000 and 207,000 deaths and that the economic impact would range from \$71 billion to \$166 billion, not including disruptions to commerce and society.

Pre-pandemic planning is essential if influenza pandemic-related morbidity, mortality, and social disruption are to be minimized. The sudden and unpredictable emergence of pandemic influenza and its potential to cause severe health and social consequences necessitate developing a national plan and implementing preparedness activities called for by that plan.

### WHAT HAS CDC ACCOMPLISHED?

CDC worked with federal partners to develop the Pandemic Influenza Preparedness and Response Plan, which was submitted to the Department of Health and Human Services. The goal of this preparedness and response plan is to limit the total burden of disease (morbidity and mortality) caused by an influenza pandemic and to reduce social disruption and economic loss. Objectives include strengthening global and domestic surveillance, public health and healthcare system readiness, and conducting research to improve influenza vaccines and other preventive interventions.

In collaboration with the Council of State and Territorial Epidemiologists, CDC assists state and local public health and emergency management agencies in developing their pandemic influenza plans. A software program, FluAid, 2.0, that estimates the number of deaths, hospitalizations, and outpatient visits that may occur during the next pandemic was developed. It helps state and local public health officials and policymakers prepare for the next influenza pandemic. The software also will help planners calculate the potential burden of an influenza pandemic on healthcare resources (e.g., number of hospital beds required and doctors available to see outpatients as a percentage of existing capacity).

CDC has also supported and strengthened the World Health Organization's global system of influenza laboratories and the U.S. influenza lead physician, virologic, and mortality surveillance systems. CDC has contributed to pandemic influenza vaccine development efforts by producing reassortant pandemic vaccine candidate viruses against avian influenza A viruses subtypes H5 (Eurasian lineage) and H9. CDC has also identified key cell surface receptors that contribute to the decline in immune function in the elderly. This research will lead to the development of more effective vaccines.

### WHAT ARE THE NEXT STEPS?

CDC will continue to work with partners to enhance preparedness for an influenza pandemic based on the National Preparedness and Response Plan. Areas of future attention include providing increased technical assistance to states for pandemic planning, including the development of tabletop and field exercises, assuring a supply of antiviral drugs, improving the adult immunization infrastructure, and developing a hospital surveillance system to monitor more severe cases of influenza.