National Center for Immunization and Respiratory Diseases

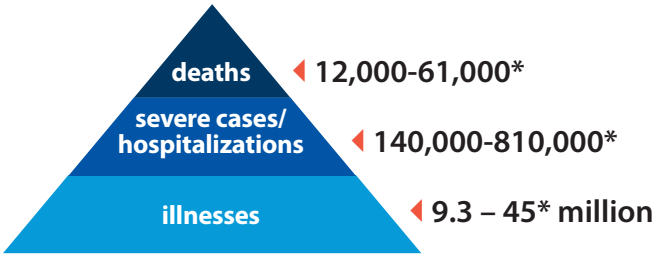
Influenza Planning and Response

Influenza poses one of the world's greatest infectious disease challenges. CDC programs protect the United States from seasonal influenza, as well as pandemic influenza which occurs when a new flu virus emerges that can infect people and spread globally.

Influenza is always changing

- Flu viruses change constantly, from season to season and sometimes during the season.
- Flu vaccines must be updated frequently to keep up with these changes.
- Each year, influenza causes millions of illnesses, hundreds of thousands of hospitalizations, and tens of thousands of deaths.

Seasonal flu causes sickness and death



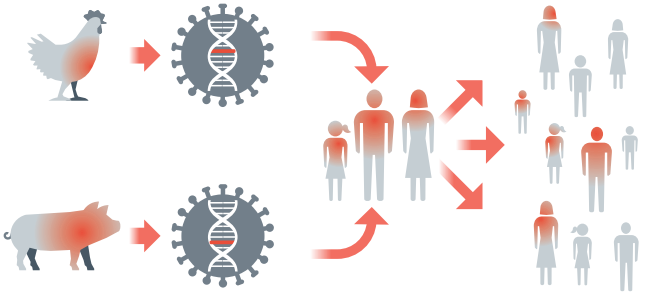
U.S. flu burden each year since 2010

**The top range of these burden estimates are from the 2017-2018 flu season. These are preliminary and may change as data are finalized.*

Novel influenza viruses are always emerging

- Most influenza viruses don't spread in people, but spread in animals, especially wild birds and pigs.
- A few of these animal influenza viruses can spread to people, and in rare cases, may cause a pandemic.
- Periodically, more instances of animal influenza viruses infecting people are reported.
- People may have little or no immunity to pandemic influenza so the consequences can be much greater.

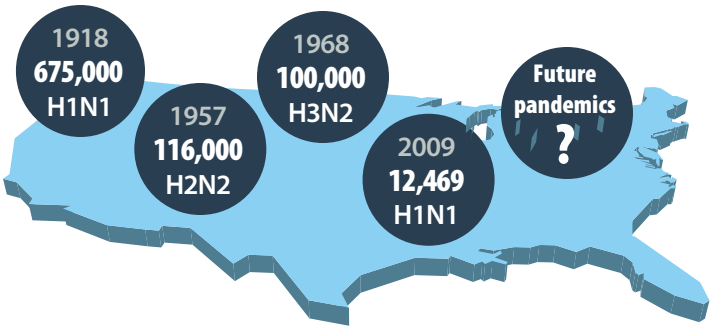
Animal influenza viruses can spread to people



An influenza pandemic can emerge anywhere and spread globally

- Four influenza pandemics have occurred in the past 100 years.
- The 1918-19 flu pandemic was the most severe, killing 675,000 Americans and 50 to 100 million people worldwide.
- During a pandemic:
  - medicine may be in short supply
  - vaccines may not be readily available
  - hospitals may be overwhelmed
  - schools and businesses may close

Estimated U.S. deaths from pandemic flu



www.cdc.gov/flu

What CDC does to protect Americans from influenza threats

CDC uses its scientific expertise and resources to address the continuing threat posed by seasonal and pandemic influenza. Key CDC activities that protect people against both seasonal and pandemic influenza include:

Monitoring influenza viruses

Works with domestic and global public health partners to monitor both human and animal influenza viruses to know what and where viruses are spreading and what kind of illness they are causing.

Studying influenza viruses in the laboratory

Studies both human and animal influenza viruses in the laboratory to better understand the characteristics of these viruses, including conducting genetic sequencing on more than 6,000 viruses each year.

Improving testing and diagnostic tools

Develops and distributes tests and supplies materials to state, local, territorial, and international laboratories so they can detect and characterize influenza viruses.

Leading influenza planning and preparedness

Supports state and local governments in preparing for the next influenza pandemic, including planning and leading pandemic exercises across all levels of government. CDC works with the World Health Organization and partner countries in pandemic planning efforts. Domestically, CDC supports the development and use of community mitigation measures and medical countermeasures to minimize the impact of a pandemic.

Supporting vaccine development

Assists global and domestic experts who choose which viruses to include in seasonal vaccine production for each year's vaccine and guides prioritization of pandemic vaccine development. CDC develops candidate vaccine viruses used by manufacturers to make flu vaccines. CDC tracks and monitors seasonal influenza vaccine distribution.

Funding and technical assistance

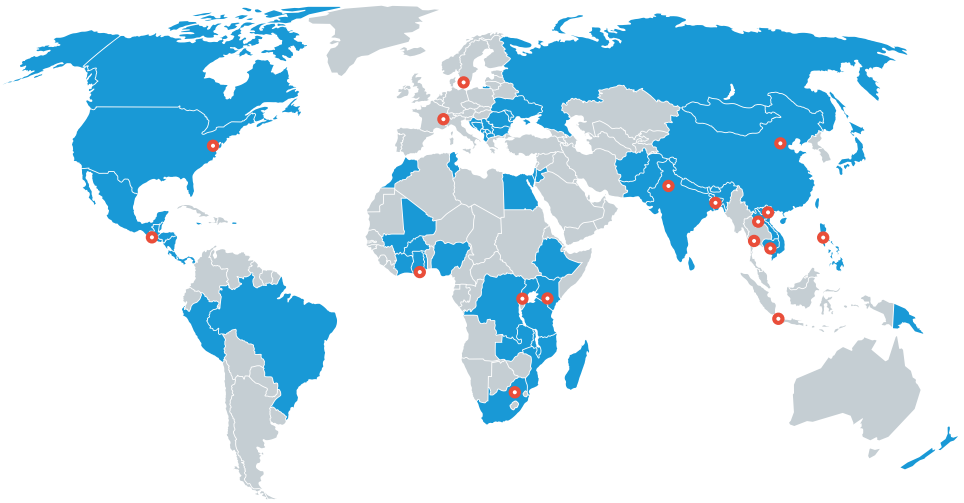
Provides direct support to state, local, and territorial public health departments for influenza surveillance and laboratory work. Globally, CDC supports more than 50 countries to build surveillance and laboratory capacity to find emerging influenza threats and respond to them.

Improving tools to prevent and control influenza

Evaluates the effectiveness of vaccines and drugs and updates recommendations on these.

Providing timely and accurate information

Informs health care providers and the public about influenza prevention and control measures. CDC works with businesses, schools, communities, and others to plan for and address influenza threats.

CDC's NCIRD leads influenza activities across the globe to monitor changes in influenza viruses.

- NCIRD-assigned field staff
- Funding and technical assistance