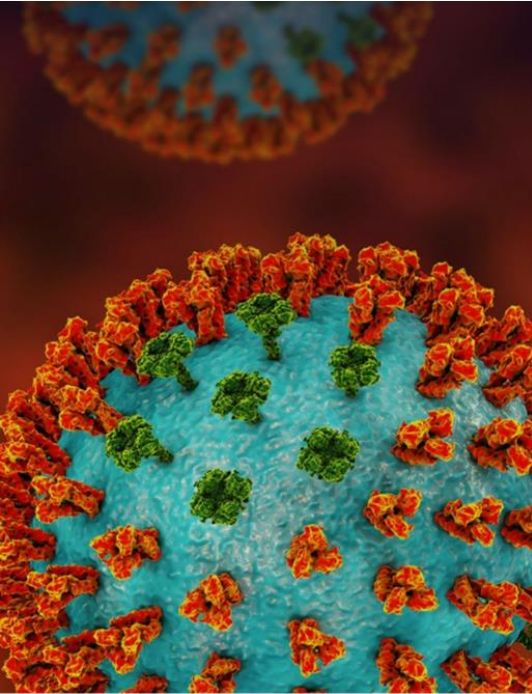


# Seasonal and Pandemic Influenza: Leveraging Resources toward Mutual Preparedness



COALITION TO  
**STOP FLU**



The United States has built a robust ecosystem to prevent, detect, and respond to seasonal influenza each year. Decades of federal, state, and private investment have enabled this progress. However, the United States still experiences between 12,000–61,000 deaths from influenza every year.

U.S. health officials view each routine flu season as an opportunity to continuously improve health outcomes and ensure readiness for the emergence of a novel strain that may cause a pandemic. The 1918 Great Influenza pandemic infected nearly a third of the world and killed at least 50 million.

From viral surveillance to vaccine development, from clinical trials to communications strategies, **seasonal flu activities create a basis for pandemic flu readiness.** However, a pandemic flu requires special strategies to enable rapid, large-scale response.

Sustained and right-sized annual appropriations for both seasonal and pandemic influenza programs are needed to save lives and make us better prepared for any influenza virus—known or novel.

## How are seasonal and pandemic influenza distinct?

	Seasonal flu	Pandemic flu
<b>The virus</b>	An Influenza virus of the Orthomyxoviridae family that has been circulating among humans for some time; may be designated as an A or B virus.	An Influenza virus of the Orthomyxoviridae family that is new to science (i.e., novel) and is newly infecting humans; most likely to be an A virus.
<b>Timing of occurrence</b>	Outbreaks occur annually, predominantly in the fall and winter (and thus at opposite times of the calendar year in the northern and southern hemispheres).	Outbreaks occur rarely; four globalized pandemics were recorded in the past 100 years: 1918, 1957, 1968, and 2009; can occur at any time of year.
<b>Mode of spread</b>	Human-to-human, primarily from droplets generated by coughing or sneezing, less commonly through contact with contaminated surfaces.	Human-to-human, primarily from droplets generated by coughing or sneezing, less commonly through contact with contaminated surfaces; the index case or other early cases may result from animal-to-human transmission.
<b>Who is at risk?</b>	About 70-90% of deaths are estimated to occur in people 65 years and older.	Depends on the strain. The 1918 pandemic influenza primarily impacted children under 5, 20-40 year-olds, and those >65 years of age. The 2009 H1N1 virus was different in that it generally spared the older population.
<b>Caseload</b>	U.S. numbers of cases annually over the last decade range from 9-45 million, and deaths from 12,000-61,000.	The 2009 H1N1 pandemic caused an estimated 60 million U.S. cases and 12,500 deaths. It was considered relatively mild, and future flu pandemics could have much higher numbers. The 1918 pandemic led to an estimated 675,000 deaths in the United States; the global tally was at least 50 million.
<b>Vaccine availability</b>	Seasonal flu strains are included in the annual influenza vaccine.	Stockpile of “pre-pandemic” vaccine for H5N1 strain available in the Strategic National Stockpile; if a pandemic strain is not a match for the stockpiled strain, a new vaccine will need to be developed.

# SEASONAL & PANDEMIC

## INFLUENZAS



### Science

Biologically, the primary distinction between an influenza virus labeled “seasonal” and one labeled “pandemic” is the ability of that virus to transmit and cause infection, particularly with respect to the severity of infection. This is a function of the newness of the virus in the human population. **Pandemic viruses are novel**—that is, they are strains that are newly evolved into existence, typically from sources in animals that may shift or combine to form a new strain.

### Health

Federal, state, and local public health departments and other health care providers engage annually in efforts to implement and improve systems to track and respond to seasonal influenza outbreaks. These activities include the operation of surveillance systems, the distribution of vaccines, administration of antivirals to sick patients, and staffing of informational public hotlines. These activities are also vital during flu pandemics, but must be adjusted and re-scaled.

### Funding

Historically, funding for seasonal and pandemic influenza preparedness and response has largely been treated as distinct, reflecting policymakers’ tendency to take a reactive rather than proactive stance to pandemic preparedness.

**Seasonal Influenza.** Federal funding for seasonal influenza preparedness and response is provided through annual appropriations to a variety of agencies, including the Centers for Disease Control and Prevention (CDC), the National Institutes of Health (NIH), and the Centers for Medicare and Medicaid Services (CMS). This funding also provides vital support for state and local stakeholder partners, who coordinate and administer the response on the ground.

**Pandemic Influenza.** Some of the annual funding for seasonal influenza—and other annual funding aimed at better preparing our country against biological threats—addresses pandemic preparedness needs. Historically, however, most of the funding that the government has made available for pandemic influenza preparedness activity has been through emergency supplemental appropriations. These appropriations, primarily to agencies such as the Biomedical Advanced Research and Development Authority (BARDA), have since expired, leading to the loss of personnel and capability.

**The programs and other activities implemented with both annual appropriations for seasonal influenza and emergency appropriations for pandemic influenza can cross-pollinate preparedness for any influenza outbreak.**

**Sustained, annual funding for both seasonal influenza and pandemic preparedness is needed to improve our country’s influenza ecosystem and save lives.**

### PLANNING

Seasonal efforts rely on strong surveillance and health systems infrastructure

National strategy for pandemic flu draws on seasonal efforts

### BIOLOGY

Member of the Orthomyxovirus family of viruses; respiratory pathogen

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### EPIDEMIOLOGY

Person-to-person spread via aerosol or surface contact

Initial spillover from animal; person-to-person spread via aerosol or surface contact

### SURVEILLANCE & LABORATORY

Dedicated influenza surveillance and monitoring platforms

Leverages seasonal influenza surveillance platforms

Laboratory assays for seasonal strains; rapid point-of-care tests

Laboratory assays can be quickly developed for pandemic strains

### SCIENCE & R&D

Key elements include well-engineered detection architecture, big data access and analytics, viral characterization capability, MCM development science

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### HEALTH CARE

Experienced health care components provide diagnosis and treatment

Health care components draw on seasonal experience to support pandemic cases; some elements will require additional planning - PPE, reimbursement, etc.

### MCM

Strong system in place to manufacture seasonal vaccine

High-speed, high-volume diagnostics, therapeutics, and vaccine will be needed to meet demand

Distribution channels may be the same

### COMMUNICATION

Seasonal influenza risk messaging is mature through annual CDC and state/local efforts

Seasonal communication platforms will be available for pandemics; specific messages may need to be modified

### FUNDING

Federal appropriations provided annually for seasonal influenza preparedness and programs

Federal appropriations typically provided as emergency spending