

PANDEMIC INFLUENZA

The combination of rapid human-to-human transmission, high mortality rate, constant mutation, and zoonotic (animal-to-human) nature of the virus make influenza an especially dangerous and unique threat when compared to other emerging diseases. In essence, it is not “emerging,” but constant. The constant nature of the pandemic influenza threat necessitates sustained, adequate investment in our preparedness and response capabilities. In doing so, pandemic influenza preparedness will not take away from other priorities. Even if other diseases emerge, the pandemic influenza threat will remain.

Why the Pandemic Influenza Threat is Different



Widely recognized as the most likely and most severe pandemic threat



Most people have no prior immunity



Track record of severe outbreaks



Unlike seasonal flu, can't predict what strain will emerge when



Highly transmissible from person-to-person



Like medical countermeasures, vaccines and therapeutics have no commercial marketplace



Constantly circulating and constantly evolving viruses



Continual animal reservoir has health and economic risks for both humans and livestock

20th and 21st Century Influenza Pandemics

1918 H1N1

25% of U.S. population infected

675,000 U.S. deaths

At least **50 million** deaths globally

Mainly impacted young, healthy people

1957 H2N2

116,000 U.S. deaths

1.1 million deaths globally

1968 H3N2

100,000 U.S. deaths

1 million deaths globally

2009 H1N1

60.8 million cases in the U.S.

19,500 U.S. deaths

Estimated **151,000–575,000** deaths globally

80% of deaths in people younger than age 65

FEDERAL GOVERNMENT PANDEMIC INFLUENZA STRATEGY

VACCINES + THERAPEUTICS + DIAGNOSTICS

Funded through the Biomedical Advanced Research and Development Authority (BARDA)

Activities Supported by Federal Funding



Preparedness to rapidly respond

- Surge readiness
- Evaluation of response capabilities
- Warm-basing of infrastructure



Sustainment and replenishment of stockpiles

- Purchase of bulk antigen and adjuvant material for vaccines
- Purchase of antivirals
- Testing and replenishing stockpiled materials
- Purchase of materials to cover first responders



Next generation research and development

- Innovative technologies including universal flu vaccines

Accomplishments of the federal pandemic influenza investment



- Retrofitting and construction of influenza manufacturing facilities to expand capacity to produce 600 million doses of influenza vaccine within six months of a declaration of an influenza pandemic
- Support for the development of 17 products for influenza, including nine vaccines, one therapeutic antiviral drug, six diagnostics, and one respiratory protective device
- FDA approval of novel pandemic influenza vaccines, including the first cell-based, recombinant, and adjuvanted pandemic influenza vaccines, expanded indications for protection of additional populations, and diagnostics
- Establishment of the National Pre-Pandemic Influenza Vaccine Stockpile, which contains avian influenza H5N1 and H7N9 vaccines and novel adjuvants

How to sustain our progress



- As part of the Pandemic and All-Hazards Preparedness Act (PAHPA) reauthorization, Congress should institute a separate funding line for pandemic influenza.
- Pandemic influenza activities at BARDA should be funded at a level consistent with that outlined in the FY 2016–2020 PHEMCE Multiyear Budget, at least \$630 million annually.
- BARDA plans to invest in research for improved vaccine technologies and universal flu vaccine candidates, as well as rapid diagnostics. In light of increasing antimicrobial resistance, BARDA also sees a need for new flu therapeutics.