



South Carolina Pandemic Influenza Preparedness Report November 1, 2018

This report is submitted by the Department of Health and Environmental Control in compliance with General Appropriations Act of 2017-18, Part 1B, Section 34.32.

Seasonal Influenza

Influenza is a contagious respiratory illness caused by influenza viruses. The United States experiences increased levels of influenza illness during the fall and winter, which is referred to as seasonal influenza. Seasonal influenza causes hospitalizations and deaths each year in South Carolina, with numbers depending on the severity of the season.

In 2017-18, seasonal influenza in South Carolina was severe with widespread activity lasting for 11 consecutive weeks. There were a total 3,595 positive lab-confirmed tests and 132,247 positive rapid antigen detection tests reported during this time period. The highest period of influenza activity was noted between January 27, 2018, and February 10, 2018. Individuals 65 years of age and older were most afflicted, accounting for 57% of all influenza-associated hospitalizations and 72% of all influenza-associated deaths. A total of 4,551 hospitalizations and 292 deaths were reported. Of the reported 292 deaths, three occurred in individuals less than 18 years of age.

The best way to prevent seasonal influenza is with annual vaccination. Each year, the seasonal influenza vaccine is updated to match the viruses that are expected to circulate.

Pandemic Influenza

Pandemic influenza occurs when a new influenza A virus emerges that is substantially different from the seasonal flu viruses that have been circulating. People do not have immunity against the new virus and the seasonal influenza vaccine does not protect against it. A pandemic, or global outbreak, occurs when the virus can spread easily from person to person. There is no way to predict when this will occur, thus maintaining influenza surveillance and preparedness is key to being able to respond.

Pandemic influenza is a recurring threat. Four (4) influenza pandemics occurred over the past 100 years, in 1918, 1957, 1968, and 2009. The most recent pandemic (2009) was caused by the H1N1pdm09 influenza virus and primarily affected children and young to middle-aged adults. It led to the death of 0.001—0.007% of the world's population during the first 12 months the virus circulated. The impact was less severe than previous pandemics in which mortality ranged from 0.03% of the world's population during the 1968 H3N2 pandemic to 1—3% percent of the world's population during the 1918 H1N1 pandemic.

The U.S. Department of Health and Human Services (HHS) publishes guidance for the nation's pandemic influenza preparedness. It released the Pandemic Influenza Plan 2017 – Update IV in December 2017. It outlined significant advancements in the nation's preparedness efforts and identified goals, objectives, and key actions for the next decade to continue to maintain and advance preparedness efforts.

Some of the advancements in national preparedness include:

- Advances in the ability to detect and track influenza viruses.
- New diagnostic test that can identify an influenza subtype in 20 minutes.
- Expanded partnerships among HHS, U.S. Customs and Border Protection, and the Coast Guard at more than 300 United States ports of entry to better conduct disease investigations among passengers and crews of aircraft and cruise ships.
- New types of vaccines that can be produced more quickly.
- Expanded number of manufacturers that can supply vaccine to the United States.
- More robust access to vaccination — additional types of health professionals now permitted to vaccinate and vaccinations now offered in pharmacy settings.
- National stockpile of antiviral drugs, including pediatric formulations.
- Improved understanding of the use of respirators and other personal protective equipment.
- Increased knowledge and research on the feasibility, public acceptability, and effects of non-pharmaceutical interventions, including school and child care closures.
- Flu on Call™, a new national network of telephone triage lines staffed by information specialists and medical professionals. Flu on Call™ reduces both the need for face-to-face provider encounters and surge on medical facilities during a severe pandemic event.

South Carolina's Pandemic Influenza Preparedness

Planning: DHEC maintains the Pandemic Influenza Plan and the Medical Countermeasures Plan to guide South Carolina's response to a pandemic influenza event, which include:

- Providing current public health information regarding the pandemic.
- Encouraging and assisting providers to participate with influenza surveillance.
- Confirmatory testing of laboratory specimens for public health surveillance purposes.
- Convening stakeholders to facilitate a coordinated response to issues that arise related to health care surge needs.
- Receiving, staging, storing, allocating, and distributing federal public health resources.
- Identifying, planning, and managing public Point of Dispensing vaccine and/or antiviral sites.
- Assisting in distribution of pandemic influenza vaccine to at-risk populations and priority groups.
- Facilitating communication with response partners.

Medical Countermeasures Operational Readiness Review: Every two years, DHEC in coordination with the CDC conducts an Operational Readiness Review to demonstrate its capability to receive, stage, store, distribute, and dispense (or administer) material during a public health emergency. At the completion of these reviews, action plans are developed focusing on activities designed to address prioritized medical countermeasures planning and operations.

State Antiviral Stockpile: DHEC maintains a small cache of antivirals to support early public health response in the event of a pandemic. The following chart outlines the type of medication and number of courses in the cache:

	Oseltamivir 75mg (Tamiflu)	Zanamivir 5mg (Relenza)
Number of Courses	500	150

Training and Exercise: All trainings and exercises are designed with the goal of ensuring capability for mass vaccination and assisting community partners with coordinating support services and making decisions about non-pharmaceutical interventions. The following matrix outlines planned exercise activities relating to pandemic influenza preparedness over the next five (5) years beginning July 1, 2018:

Planned Pandemic Influenza Activities July 1, 2018 – June 30, 2023	
State	Update state Pandemic Influenza Plan. Table Top Exercise within two (2) years of plan being completed. Mass vaccination distribution Full Scale Exercise within five (5) years.
Public Health Regions	Vaccine clinic set up checklist completed. Table Top Exercises within the first two (2) years. Mass vaccination Full Scale Exercise within five (5) years. Vaccination through-put drill.

Influenza Surveillance System

South Carolina maintains a year-round influenza surveillance system. Clinical providers and laboratories are required to report to DHEC all positive influenza laboratory test results within three (3) business days, influenza-associated hospitalizations on a weekly basis, and influenza-associated deaths within 24 hours. Influenza outbreaks and suspected novel strains of influenza are immediately reportable by phone. In the event of a pandemic, surveillance components will be modified or added (i.e., increase frequency of reporting, monitor school absenteeism, etc.) in consultation with the CDC.

An evaluation of South Carolina's influenza surveillance system indicated that removing the requirement for reporting positive rapid antigen detection tests would not compromise virologic surveillance. Therefore, beginning in 2019, providers will no longer be required to report positive rapid antigen detection tests to DHEC.

South Carolina participates in the CDC's U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), a voluntary surveillance system in which clinical providers report the aggregate number of visits attributed to influenza-like illness (ILI) weekly. During the 2017-18 influenza season, eighteen (18) South Carolina providers participated in ILINet. For the 2018-19 influenza season, a total of sixteen (16) hospitals executed a data sharing agreement allowing DHEC to use their emergency department data for ILINet. This season, South Carolina has a total of thirty-two (32) enrolled ILINet providers. DHEC maintains the SC Disease Alerting, Reporting & Tracking System (SC-DARTS), a syndromic surveillance system that utilizes hospital emergency department chief-complaint data to detect potential clusters of ILI. South Carolina continues to participate in the CDC Epidemic Prediction Initiative, which provides state, regional, and national level influenza forecasts. Forecasts for the 2018-19 season began October 29, 2018.

Annually, DHEC's Public Health Laboratory (PHL) distributes an influenza informational letter and test kits to clinical providers across the state. DHEC provided an educational webinar hosted by the South Carolina Hospital Association (SCHA) in October 2018 to raise awareness about the importance of flu surveillance.

The PHL confirms influenza cases using the CDC's Real-Time influenza testing method. When suspected respiratory disease outbreaks are identified, the PHL conducts special testing to rapidly identify the cause. Testing results are electronically submitted daily to the CDC through the Association of Public Health Laboratories' Public Health Laboratory Interoperability Project.

DHEC submits influenza original specimens to a CDC National influenza Reference Center Laboratory in accordance with the national Influenza Virologic Surveillance Right Size Roadmap. This system prescribes how many influenza-positive specimens need to be identified to detect emerging seasonal influenza antigenic variants (mutations in the virus) or novel influenza virus infection based on a state's population size. For the 2018-19 influenza season, DHEC is implementing automated extraction equipment for high through-put testing for influenza.

Because novel human influenza viruses often emerge through mixing (reassortment) of human and animal influenza viruses, monitoring workers who are responding to outbreaks of influenza in animals is critical. DHEC maintains a working relationship with Clemson University Livestock Poultry Health, which performs routine disease surveillance on animals.

Data collected from human surveillance activities are compiled, analyzed and disseminated in a report to the public. The Flu Watch is posted weekly on the DHEC website and can be accessed at <https://www.scdhec.gov/health/flu/flu-watch-data-reports-maps>. Public health alerts are issued to clinical providers through the South Carolina Health Alert Network at the start of the influenza season and in emergent situations. Media releases are issued for the first influenza death of the season and at other times as deemed appropriate.



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Date