

Influenza Update 2019-2020 Season

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OUTLINE

- **2018-19 Flu Season Surveillance Summary**
- **2019-20 Influenza Vaccine Updates**
- **Flu reporting...**
- **Interim Guidance for Flu Outbreaks in Long-term Care Facilities**



Definition of Influenza-like Illness (ILI)

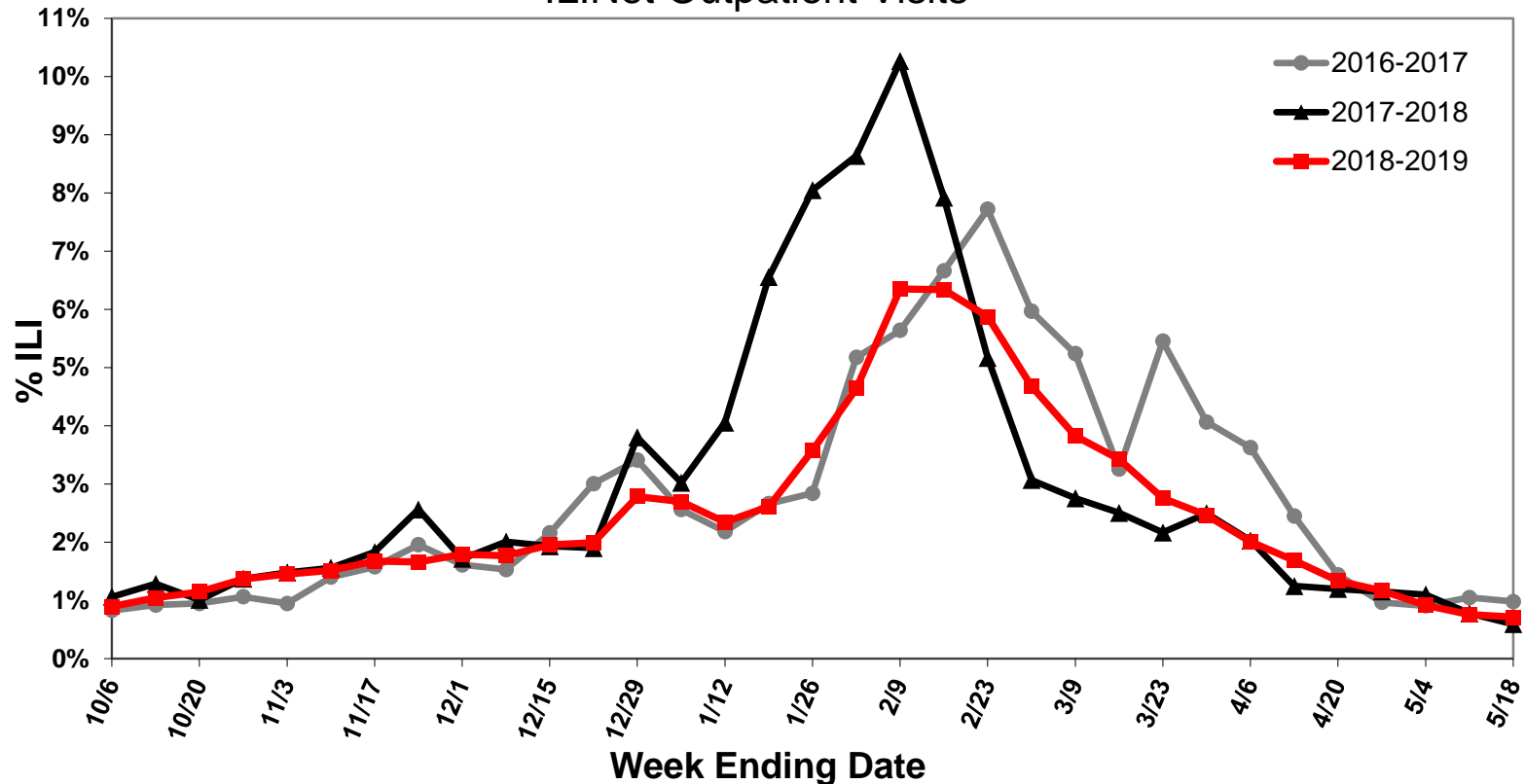
- For surveillance, Influenza-like Illness is defined as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or sore throat without a KNOWN cause other than influenza.
- Influenza-like illness network (ILINet) is the outpatient surveillance tool for tracking provider level data
 - Percent ILI is calculated by dividing total ILI patients by total patients seen for any reason times 100
- Baselines are calculated for ILINet and for the 7 flu surveillance regions, using a 3-year average of %ILI outside of flu season.



2018-19 Flu Season Summary

- NC, went above baseline activity at the end of December
- Flu A(H3) was the predominant strain

INFLUENZA SURVEILLANCE, NC 2016-2019 ILINet Outpatient Visits



Note: Week ending displayed is for 2018–19 influenza season. Flu seasons for previous years may have different week ending dates, but these only



2018-2019 Flu Season Final Summary

National Picture

- Predominant strain Flu A(H1N1) along with A(H3)
- Over the past 5 seasons, the peak of ILI has ranged from 3.6% - 7.5%
- For the 2018-19 season ILI activity was at or above baseline for **21** weeks

North Carolina Picture

- Predominant strain Flu A(H3)
- Over the past 5 seasons, peak of ILI has ranged from 4.2% - 10.3%
- For the 2018-19 season ILI activity was at or above baseline for **24** weeks



CDC estimates that, from **October 1, 2018**, through **May 4, 2019**, there have been:

37.4 million – 42.9 million
flu **illnesses**



17.3 million – 20.1 million
flu **medical visits**



531,000 – 647,000
flu **hospitalizations**



36,400 – 61,200
flu **deaths**



2018-2019 U.S. Flu Season: Preliminary Burden Estimates



2018-2019 NC Flu-associated Deaths

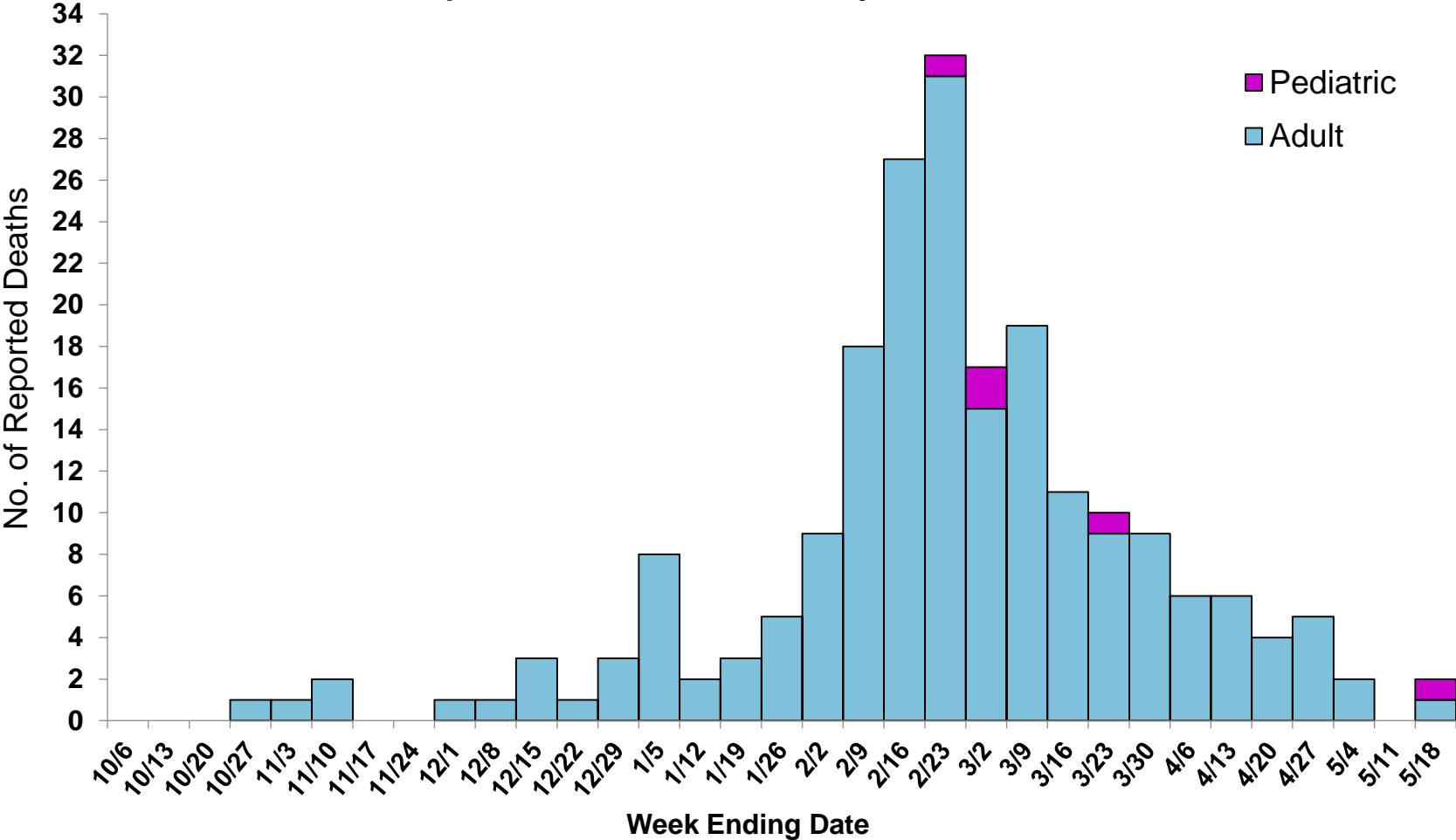
- 208 total deaths reported
- 120(58%) Females; 88 (42%) Males
- 5 pediatric deaths
- 149 (72%) were influenza type A

- Vaccine status was known for 138 cases
 - 83 (40%) were vaccinated
 - 125 (60%) were unvaccinated or unknown



Flu-associated death by week, 2018-19

Laboratory Confirmed Influenza-Associated Deaths Reported in North Carolina, by Week of Death*



*An influenza-associated death is defined for surveillance purposes as a death resulting from a clinically compatible illness that was confirmed to be influenza by an appropriate laboratory or rapid diagnostic test. The 2018-19 influenza season began on September 30, 2018

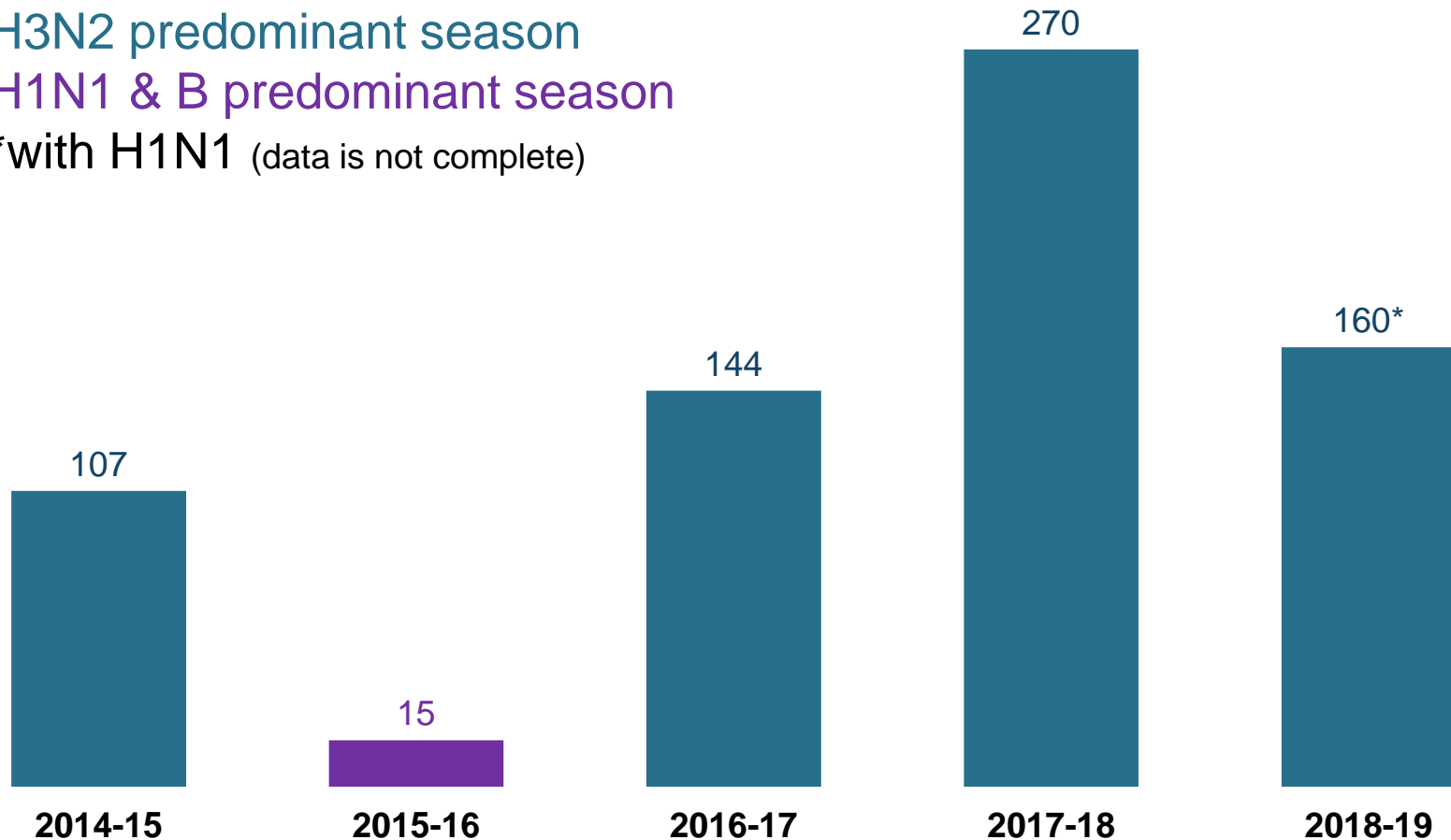


Predominant flu strain affects the number of outbreaks reported

H3N2 predominant season

H1N1 & B predominant season

*with H1N1 (data is not complete)



2019-2020 Flu Season: Vaccine Components

Trivalent (three-component) vaccines contain:

- A/Brisbane/02/2018 (H1N1)pdm09-like virus (updated)
- A/Kansas/14/2017 (H3N2)-like virus (updated)
- B/Colorado/06/2017-like (Victoria lineage) virus

Quadrivalent (four-component) vaccines, also contains:

- B/Phuket/3073/2013-like (Yamagata lineage) virus.

(2018-19 included- A/Michigan/45/2015 (H1N1)pdm09-like virus and A/Singapore/INFIMH-16-0019/2016 A(H3N2)-like virus)

https://www.cdc.gov/mmwr/volumes/68/rr/rr6803a1.htm?s_cid=rr6803a1_w#primarychangesandupdatesintherecommendations

Influenza Vaccine: New in 2019-2020 Season

- Two regulatory actions updated are-
 1. FDA approved an expanded age indication for Afluria Quadrivalent (IIV4). Previously licensed for persons aged ≥ 5 years, is now licensed for persons aged ≥ 6 months. The dose volume is 0.25 mL per dose for children aged 6-35 months and 0.5 mL per dose for all persons aged ≥ 36 months (≥ 3 years).
 2. FDA approved a change in dose volume for Fluzone Quadrivalent (IIV4). Previously, the dose volume for children aged 6-35 months was 0.25 mL. Children may now receive either 0.25 mL or 0.5 mL per dose. Children aged ≥ 36 months (≥ 3 years) and adults should receive 0.5 mL per dose.

<https://www.cdc.gov/mmwr/volumes/68/rr/rr6803a1.htm>.

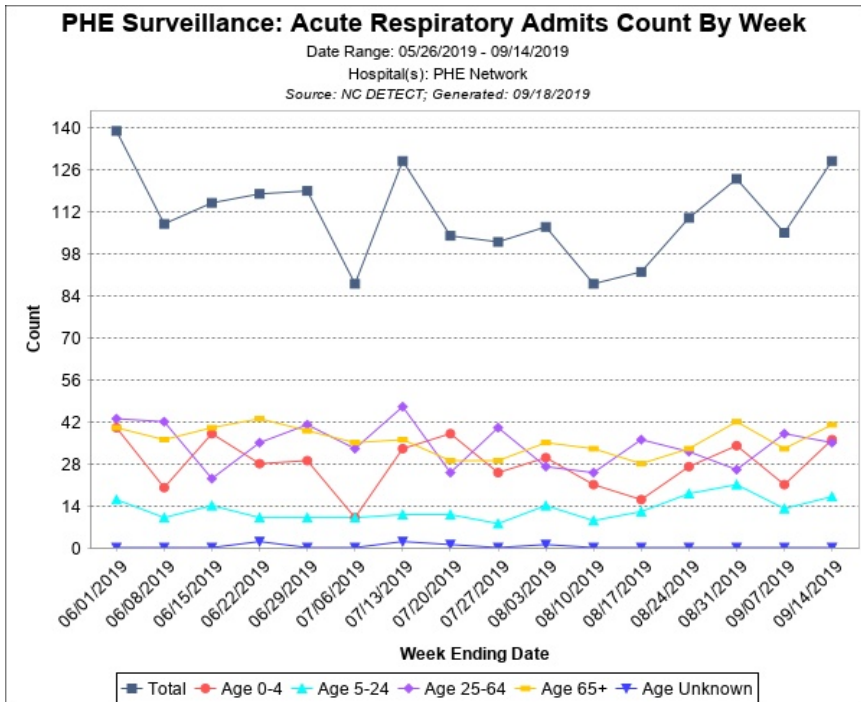


Current flu activity

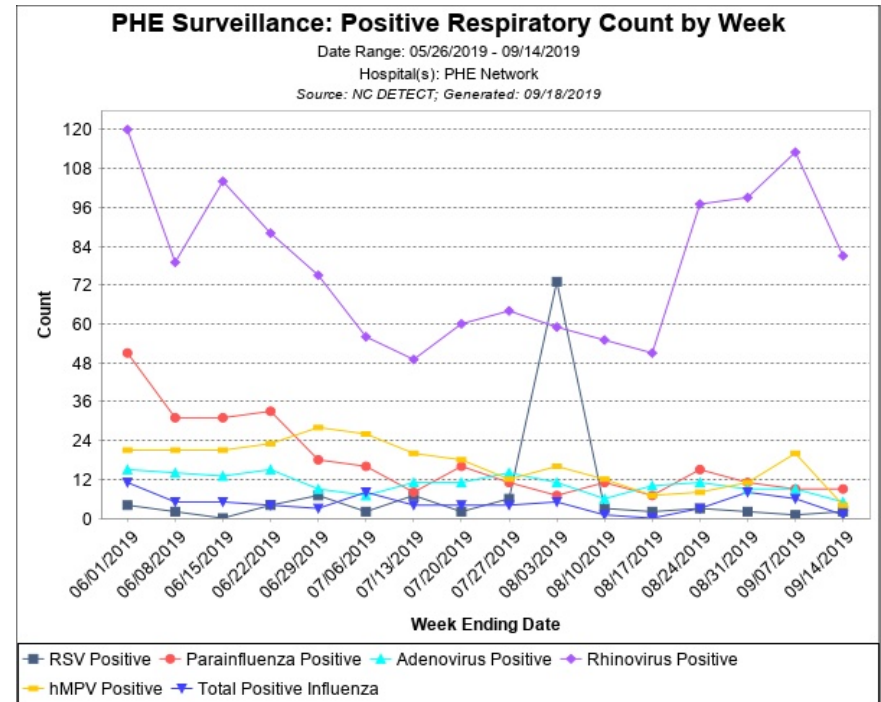
- Globally, WHO laboratories reported 60% Flu A activity, and of those 68% were Flu A(H3N2)
- In the last few weeks we have heard of an uptick in flu activity in sporadic pockets of the state along with respiratory activity
- We have seen very few positives of Flu A and Flu B from testing results at the state lab
- Rhinovirus activity has increased from mid-August



Current Respiratory Activity, NC



- Age 5-24 years, slightly elevated in August






- Rhinovirus activity is slightly elevated in August



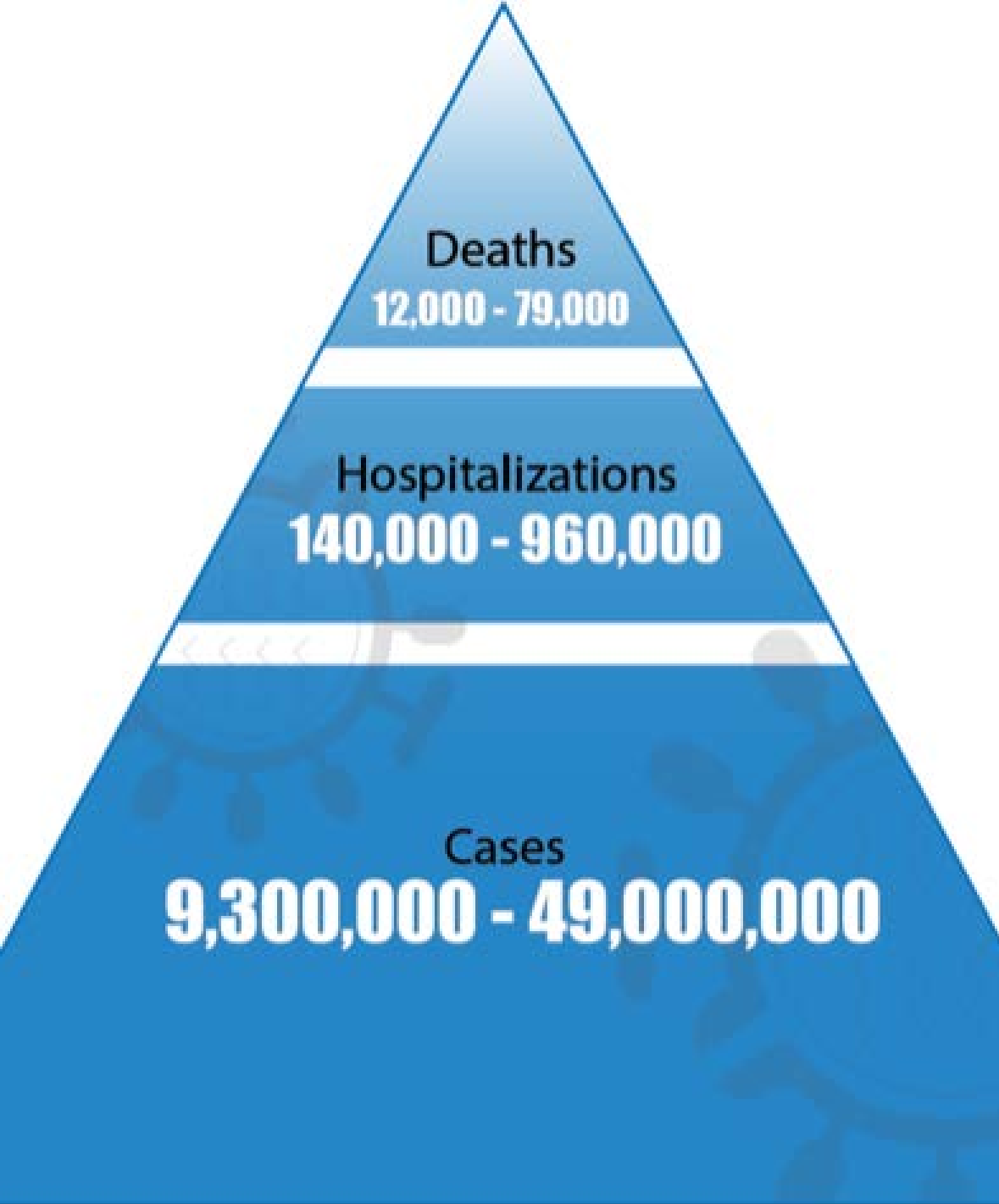
Is Flu Reportable?

FLU POSITIVES ARE **NOT** REPORTABLE IN NC!

What is Reportable?

-  ■ **Flu deaths are reportable**
-  ■ Flu outbreaks are reportable
-  ■ Novel flu cases are reportable





Annual burden of flu in the United States, 2010 – 2018

<https://www.cdc.gov/flu/about/disease/burden.htm>





Flu deaths are reportable in NC

Clinical description:

An influenza-associated death (pediatric and adult) is defined for surveillance purposes as a death resulting from a clinically compatible illness that was confirmed to be influenza (either seasonal or pandemic) by an appropriate laboratory or rapid diagnostic test.

There should be no period of complete recovery between the illness and death.





Flu deaths are reportable in NC

A death should **NOT** be reported if:

1. There is no laboratory confirmation of influenza virus infection.
2. The influenza illness is followed by full recovery to baseline health status prior to death.
3. After review and consultation there is an alternative agreed upon cause of death.





NC EDSS Reporting

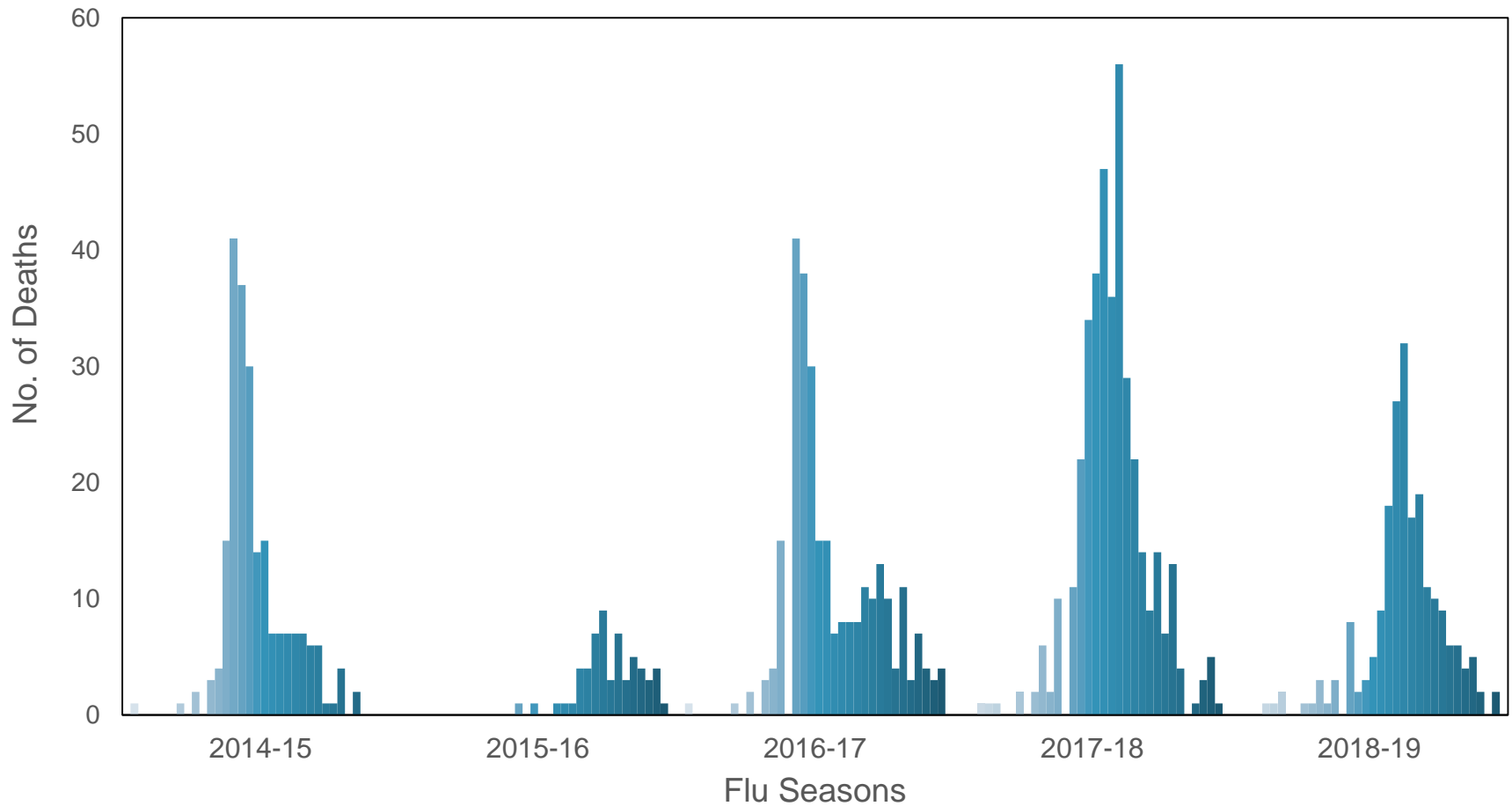
When reporting flu associated deaths in NCEDSS please note the following is entered:

- ✓ Name of case
- ✓ Date of Birth
- ✓ **Date of Death**
- ✓ **Labs-** rapid, PCR, or culture
- ✓ Vaccine status
- ✓ Any underlying conditions
- ✓ Reporting source
- ✓ Treatment





Flu-associated Deaths Reported Over the Last Five Seasons






Reporting in NC EDSS



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-  ■ **Flu outbreaks are reportable**
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Flu outbreaks are reportable in NC

- Can occur in long term care facilities, skilled nursing, acute care, schools, daycare, etc.
- Ask for a line list with- onset date, symptoms, number of ill patients and staff, and any testing results

INFLUENZA OUTBREAK WORKSHEET-INITIAL NOTIFICATION					
INFLUENZA OUTBREAK: If there is one laboratory-confirmed influenza positive case along with other cases of respiratory infection in a unit of a long-term care facility, an influenza outbreak might be occurring.					
DISEASE: <u>Influenza</u>		CALL TAKEN BY:			
CALL DATE:		CALL TIME:			
CALLER INFO					
NAME:		PHONE:			
TITLE:		COUNTY:			
FACILITY INFO					
FACILITY NAME:					
FACILITY TYPE:					
FIRST RESIDENT SYMPTOM ONSET DATE:					
LAST RESIDENT SYMPTOM ONSET DATE:					
# of ill residents: _____		Total # of residents: _____			
# of ill staff: _____		Total # of staff: _____			
CLINICAL INFO					
<u>Symptoms:</u>		Fever	Cough	Sore throat	Body aches
<u>Other:</u>					
% of residents vaccinated: _____					
No. of cases hospitalized: _____					
No. of deaths associated this outbreak: _____					
TREATMENT NOTES					
TESTING					
CASE	DATE	TYPE: <input type="checkbox"/> Rapid <input type="checkbox"/> PCR <input type="checkbox"/> Other <input type="checkbox"/> Unknown			RESULTS
1		TYPE: <input type="checkbox"/> Rapid <input type="checkbox"/> PCR <input type="checkbox"/> Other <input type="checkbox"/> Unknown			
2		TYPE: <input type="checkbox"/> Rapid <input type="checkbox"/> PCR <input type="checkbox"/> Other <input type="checkbox"/> Unknown			
3		TYPE: <input type="checkbox"/> Rapid <input type="checkbox"/> PCR <input type="checkbox"/> Other <input type="checkbox"/> Unknown			
NOTES					



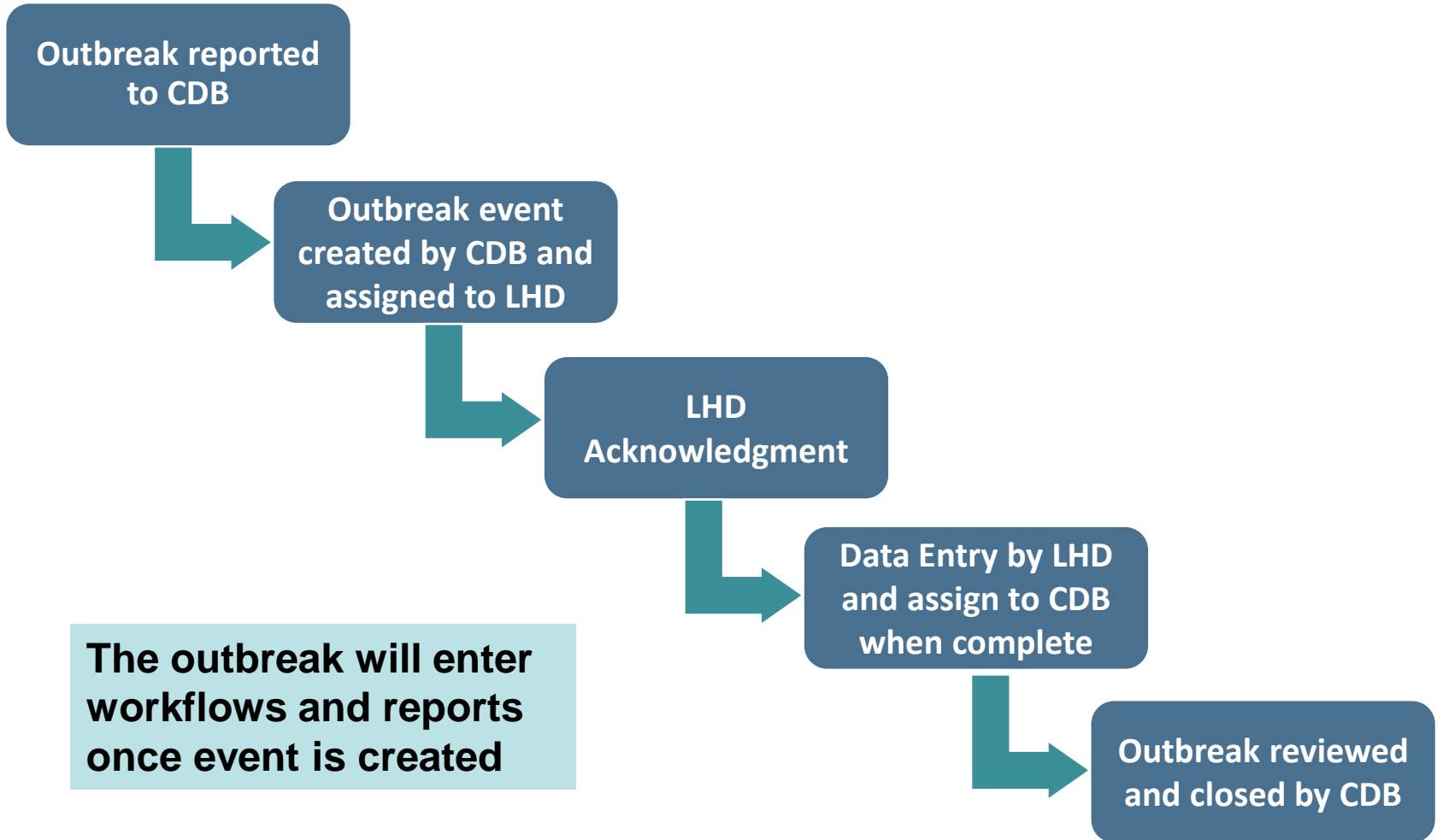
Flu Outbreaks in “School” Settings

- School can be represented as elementary, high school, college/university, or childcare centers
- LHDs cannot close/shut down schools!
- Ask the school nurse or data person if absenteeism is above baseline for that time of year
 - Can use a 3 year average
 - Should compare same time of year
- Note any unusual presentations
- Cleaning guidance-
<https://www.cdc.gov/flu/school/cleaning.htm>





NC EDSS Outbreak Reporting Summary





NC EDSS Influenza Outbreaks

What minimum data is needed to close influenza outbreaks?




- Administrative:
 - Primary Owning jurisdiction, final outbreak information (primary illness, date outbreak declared over). Investigation trail should be assigned to state
- Reporting
 - Outbreak reporter information (usually the facility where the outbreak occurred), LHD notifications, CDB notifications
- Response
 - Date investigation started, Lead investigator, outbreak response information, outbreak investigation information (especially control measures)
- Results
 - All outbreak summary info
 - Counts: at least total # ill, hospitalized, and died. Try to find out how many residents in facility and how many vaccinated before outbreak
 - Setting
 - Lab methods- at least one case should be lab confirmed and entered in the outbreak



Is Flu Reportable?

FLU POSITIVES ARE **NOT** REPORTABLE IN NC!

What is Reportable?

-  ■ Flu deaths are reportable
-  ■ Flu outbreaks are reportable
-  ■ **Novel flu cases are reportable**





What is Novel Flu?

- There are many different influenza A viruses. Some are found in humans and others in animals such as birds and swine.
- State lab of public health (SLPH) can test for the novel strains upon request and approval from CDB.





Novel Flu: Highly-Pathogenic Avian Influenza (HPAI)

- Highly pathogenic avian influenza (HPAI) infections have been reported in U.S. domestic poultry (backyard and commercial flocks), and wild birds
- These viruses are thought to have the potential to infect people and cause severe illness. To date no human avian influenza infections have been documented in the U.S.
- An exposed person is defined as a person with contact in the past 10 days to infected **sick or dead birds**, or infected flocks.
- Exposed persons should monitor themselves for new illness for 10 days after the last known exposure. The presence of fever and respiratory symptoms (e.g., cough, sore throat, shortness of breath, difficulty breathing) should be assessed daily

<https://www.cdc.gov/flu/avianflu/guidance-exposed-persons.htm>





Investigation

- Identify community members exposed to HPAI

Monitoring and management of exposed persons

- Community members
- Responders from their county (if any) after the event

Communication to-

- Public
- Providers

HPAI: Local Health Department Roles





CD NURSE TOOLKIT for HPAI

- Symptom monitoring log
- Monitoring instructions for exposed people
- Provider memo on HPAI
- Line list shell
- HPAI contact questionnaire

http://epi.publichealth.nc.gov/cd/lhds/manuals/cd/other_diseases.html





Novel Flu: H3N2/H1N2 Variant

- Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people.
- Influenza **A H3N2v** viruses were first detected in people in July 2011
- In 2018, nationally there have been 17 cases reported; 1 A(H1N1)v, 2 A(H3N2)v and 14 A(H1N2)v
- These variant viruses have mostly been associated with exposure to pigs at agricultural fairs
- Majority do not result in person-person spread, good to investigate and limit further exposure





Interim Guidance for Influenza Outbreak Management in Long- term Care Facilities

Summarized from-

<http://www.cdc.gov/flu/professionals/infectioncontrol/ltc-facility-guidance.htm>

Interim Guidance for Influenza Outbreak Management in LTCF

Preventing transmission of influenza viruses and other infectious agents within health care settings, including in long-term care facilities, requires a multi-faceted approach that includes the following:

1. Vaccination
2. Testing
3. Infection Control
4. Antiviral Treatment
5. Antiviral Chemoprophylaxis



LTCF Guidance: Vaccination

- Influenza vaccination should be provided routinely to all residents and health care workers of long-term care facilities.
- Higher vaccination levels among personnel have been associated with a lower risk of health care facility-associated influenza cases.



Vaccination FAQs

- **Q:** Facility states seeing flu in residents that were previously vaccinated. Should we re-vaccinate?
- **A:** No, there is no 'booster' or re-vaccinate option for those that got the seasonal vaccine within the current season. People over 65 years can choose to get the high-dose vaccine.

- **Q:** For staff that refuse getting a flu vaccine, do they have to wear masks or be removed from work?
- **A:** Mask policy is up to the facility. Cannot exclude individuals from work for not being vaccinated.



LTCF Guidance: Testing

If there is one laboratory-confirmed influenza positive case along with other cases of respiratory infection in a unit of a long-term care facility, an influenza outbreak **may** be occurring.

In order of priority, the following influenza tests are recommended: RT-PCR > immunofluorescence > rapid influenza diagnostic tests



LTCF Guidance: Testing

- Once a single lab-confirmed case has been identified and an outbreak is established, conduct surveillance until at least 1 week after the last confirmed case

Test for flu if-

- ✓ Ill persons in previously unaffected units
- ✓ Persons who develop acute respiratory illness more than 72 hours after starting antiviral chemoprophylaxis
- ✓ Long-term care residents that are medically fragile that manifest atypical signs & symptoms



LTCF Guidance: Infection Control

- Implement daily active surveillance for respiratory illness among ill residents, health care personnel and visitors.
- Implement **Standard** and **Droplet** Precautions for all residents with suspected or confirmed influenza
 - Standard Precautions – http://www.cdc.gov/hicpac/2007IP/2007ip_part3.html#a
 - Droplet Precautions – http://www.cdc.gov/hicpac/2007IP/2007ip_part4.html#5



Infection Control – FAQs

- **Q:** How long should we implement droplet precautions for residents with influenza?
- **A:** Implement for 7 days after illness onset or until 24 hours after the resolution of fever and respiratory symptoms, whichever is longer.



LTCF Guidance: Antiviral Treatment

Administer influenza antiviral treatment and chemoprophylaxis to residents and health care personnel according to current recommendations.

- Treatment should not wait for laboratory confirmation of influenza.
- Best started within first 2 days of symptom onset
- Four antiviral drugs are approved, duration and dosing varies please check



Antiviral Medications Recommended for Treatment and Chemoprophylaxis of Influenza

<https://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm#Table1>

Antiviral Agent	Activity Against	Use	Recommended For	Not Recommended for Use in	Adverse Events
Oral Oseltamivir	Influenza A and B	Treatment	Any age ¹	N/A	Adverse events: nausea, vomiting, headache. Post marketing reports of serious skin reactions and sporadic, transient neuropsychiatric events ²
		Chemo-prophylaxis	3 months and older ¹	N/A	
Inhaled Zanamivir	Influenza A and B	Treatment	7 yrs and older ³	people with underlying respiratory disease (e.g., asthma, COPD) ³	Adverse events: risk of bronchospasm, especially in the setting of underlying airways disease; sinusitis, and dizziness.. Post marketing reports of serious skin reactions and sporadic, transient neuropsychiatric events ²
		Chemo-prophylaxis	5 yrs and older ³	people with underlying respiratory disease (e.g., asthma, COPD) ³	
Intravenous Peramivir	Influenza A and B ⁴	Treatment	2 yrs and older ⁴	N/A	Adverse events: diarrhea. Post marketing reports of serious skin reactions and sporadic, transient neuropsychiatric events ²
		Chemo-prophylaxis ⁵	Not recommended	N/A	
Oral Baloxavir	Influenza A and B ⁶	Treatment	12 yrs and older ⁶	N/A	Adverse events: none more common than placebo i



LTCF Guidance: Antiviral Chemoprophylaxis

- All exposed residents on units or wards with influenza cases in the long-term care facility (currently impacted wards) should receive antiviral chemoprophylaxis as soon as an influenza outbreak is determined.
- When at least 2 patients are ill within 72 hours of each other, and one is lab-confirmed, facility should initiate chemoprophylaxis to all non-ill residents living on same unit. Consideration given to residents on unaffected units
- CDC recommends antiviral chemoprophylaxis for a minimum of 2 weeks, and continuing for at least 7 days after the last known case was identified.
 - i.e. From the date of the first symptom onset chemoprophylaxis should be given for 2 weeks, if a new case is identified (lab-confirmed) then continue for 7 days after this case



Chemoprophylaxis FAQs

- Q: Should we consider prophylaxis for entire facility when only one unit/wing is having the outbreak?
- A: If residents are cohorted and staff does not go from ill patients to well patients, then just one part of the facility can be given the prophylaxis dosing
- Q: Antiviral chemoprophylaxis can be considered or offered to unvaccinated personnel who provide care to persons at high risk of complications?
- A: It may be considered for staff if the outbreak is caused by a strain that is not well matched by the vaccine.



LTCF Guidance: Additional Measures to Consider

- Have symptomatic residents stay in their own rooms as much as possible, including restricting them from common activities, and have their meals served in their rooms when possible.
- Limit the number of large group activities in the facility
- Avoid new admissions or transfers to wards with symptomatic residents.
- Limit visitation and exclude ill persons from visiting the facility via posted notices.



LTCF Guidance: Additional Measures to Consider

- Monitor personnel absenteeism due to respiratory symptoms and exclude those with influenza-like symptoms from work until at least 24 hours after they no longer have a fever.
- Restrict personnel movement from areas of the facility having illness to areas not affected by the outbreak.
- Administer the current season's influenza vaccine to unvaccinated residents and health care personnel as per current vaccination recommendations.

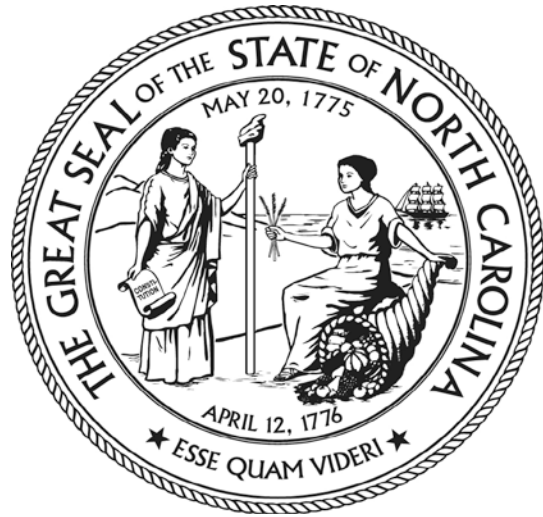


Additional Flu FAQs

- **Q:** Can we send specimens to the state lab?
- **A:** Yes, as part of an outbreak you can send specimens.

- **Q:** What if a death occurs during an outbreak?
- **A:** Notify the Epi on call, and enter the event in NCEDSS. Try to obtain a specimen for testing at the state lab.





NC DEPARTMENT OF **HEALTH AND HUMAN SERVICES**

Questions? Comments?

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