Communicable Disease Prevention and Control Unit
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Cincinnati Influenza Activity Report: Week 22-3 (1/17/22 to 1/23/22)

Background

The US influenza surveillance season runs from the 40th week of the year (using CDC's MMWR calendar) through the 20th week of the next year. For the 2021-2022 season, week 40 (21-40) began on 10/03/21 and reporting for week 20 will end on 05/22/22 (22-20). All data in this report and past reports is preliminary and subject to change.

Influenza, by itself, is not a reportable disease, meaning that it is not one of the diseases that Ohio law mandates be reported to public health authorities. This means that public health authorities do not have a single simple data source to measure the incidence (occurrence) and impact of influenza. For this reason, influenza surveillance is conducted by looking at different factors and data sources. In Ohio, pediatric deaths due to influenza and hospitalizations of persons of any age due to influenza are reportable.

Pediatric Deaths (2021-2022 season to date)

- Cincinnati: 0
- Ohio*: 0
- United States*: 5

**As of week 22-3,*

Hospital Admissions During the 2021-2022 Influenza Season

- From 10/03/2021 through 1/23/22, 19 Cincinnatians have been hospitalized for influenza (Table 1).
    - This total is greater than last year's influenza season. By this time last year, 0 Cincinnati residents had been hospitalized for influenza.
    - Statewide, there have been 487 residents that have been hospitalized from MMWR week 40 through MMWR week 3 (1/23/22); influenza-associated hospitalizations for Ohio are above the seasonal threshold.

Table 1: Hospitalizations Due to Influenza by Month in Cincinnati to Date

Month	*Number of Hospitalized Influenza Cases*
October	0
November	4
December	13
January	2

- Figure 1 below shows the number of cases of influenza associated hospitalization among Cincinnati residents reported to the Cincinnati Health department by week of admission. Which as of this report is **nineteen**.
- Regarding hospitalized patients to date in Cincinnati, **nine** patients have tested positive for Influenza A, the remaining 10 hospitalized patients' influenza type is unknown.

Report issued: 1/24/22

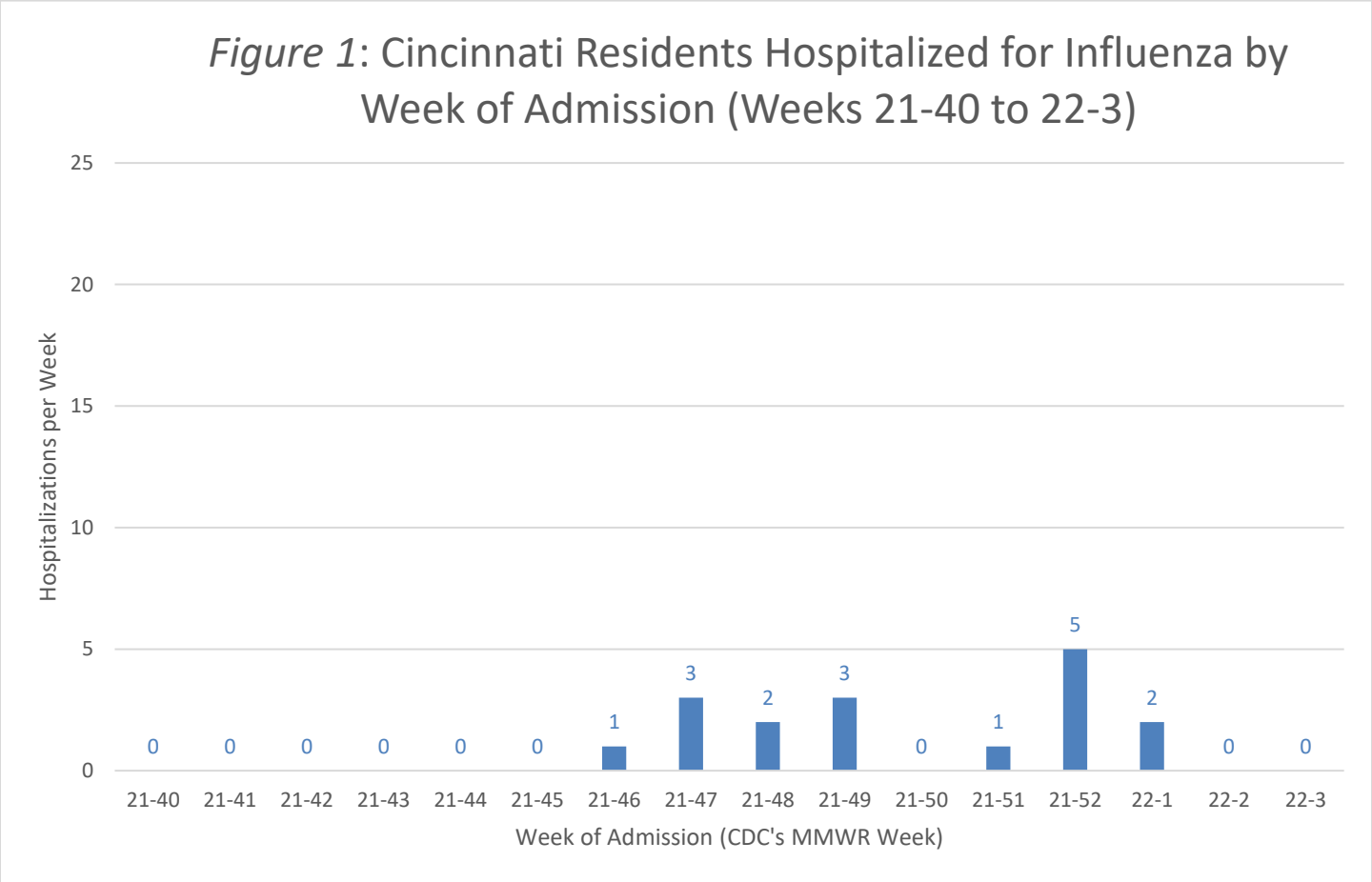


Figure 1: Cincinnati Residents Hospitalized for Influenza by Week of Admission (Weeks 21-40 to 22-3)
Hospitalizations per Week
25
20
15
10
5
0
0 0 0 0 0 0 1 3 2 3 0 1 5 2 0 0
21-40 21-41 21-42 21-43 21-44 21-45 21-46 21-47 21-48 21-49 21-50 21-51 21-52 22-1 22-2 22-3
Week of Admission (CDC's MMWR Week)

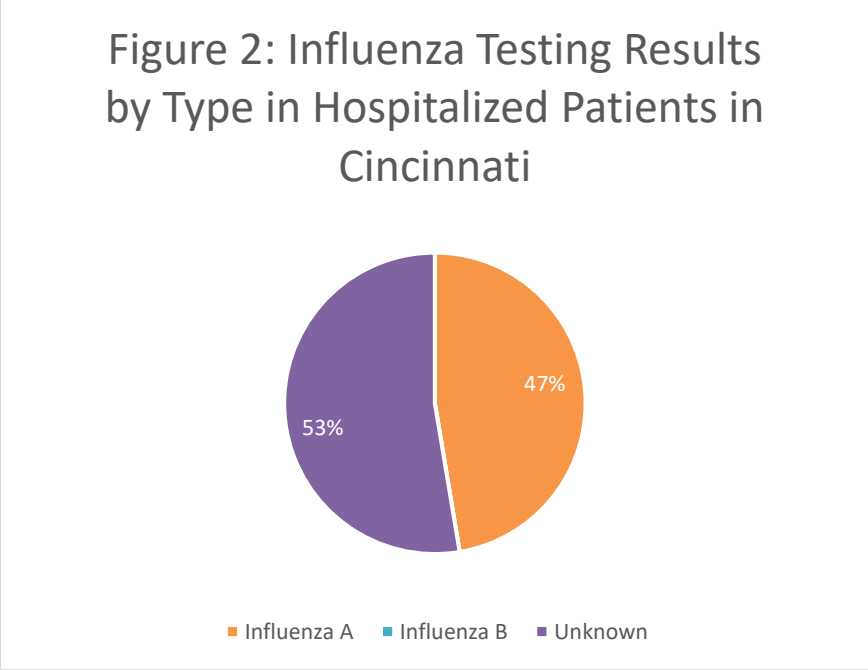


Figure 2: Influenza Testing Results by Type in Hospitalized Patients in Cincinnati
47%
53%
Influenza A
Influenza B
Unknown

Demographics of Hospital Admissions During the 2021-2022 Influenza Season

Figure 3: Influenza-Related Hospitalizations by Sex, 2021-2022 Influenza Season

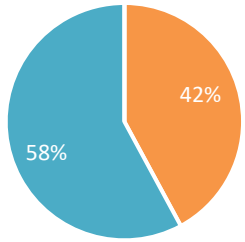


Figure 4: Influenza-Related Hospitalizations by Race, 2020-2021 Influenza Season

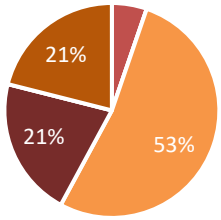
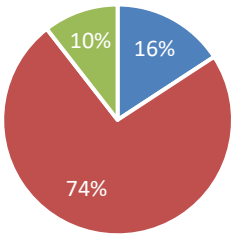
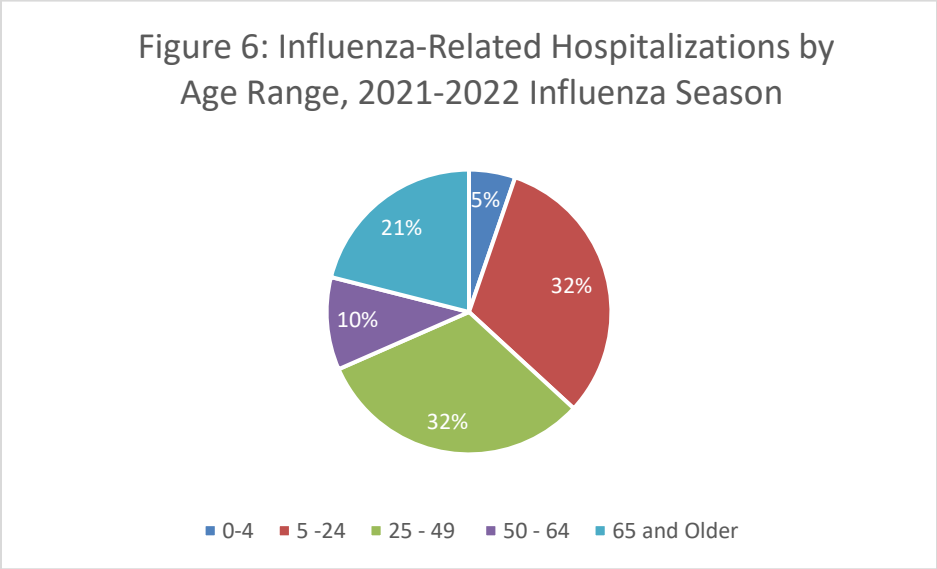


Figure 5: Influenza-Related Hospitalizations by Ethnicity, 2021-2022 Influenza Season

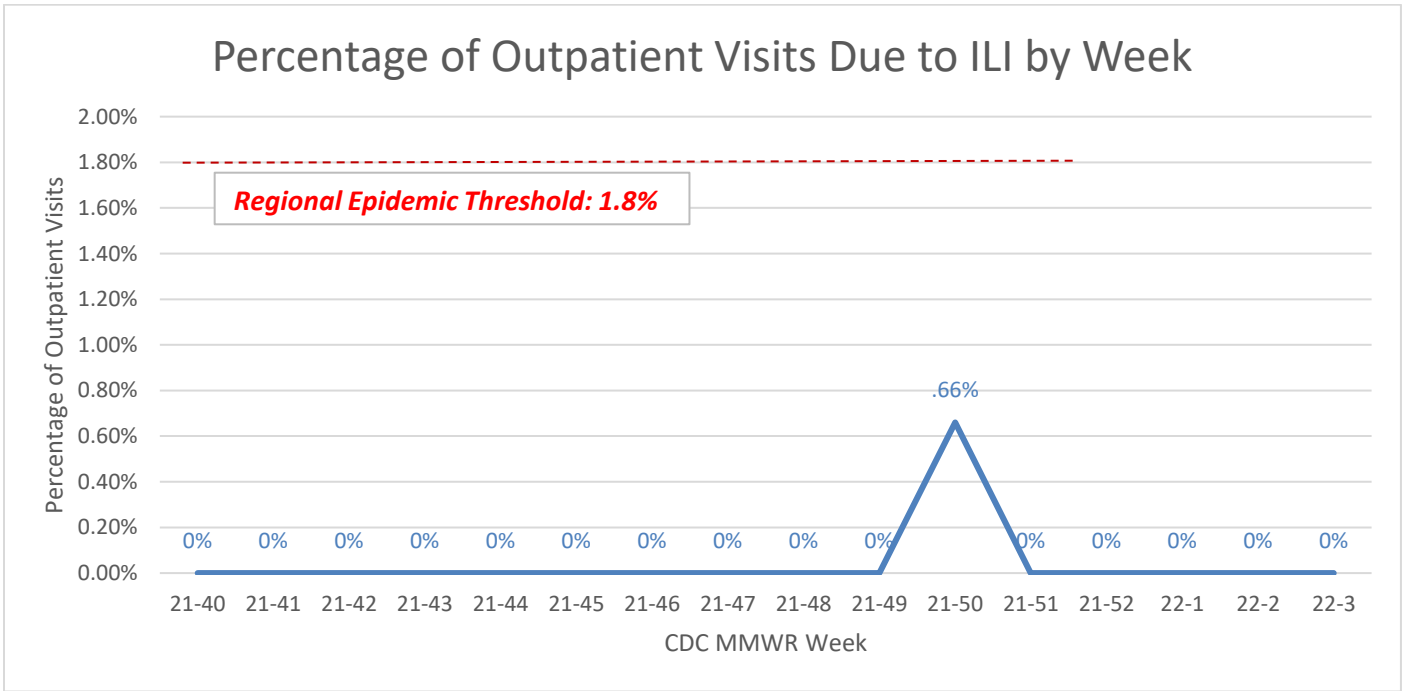




Outpatient Visits: Sentinel Influenza Program

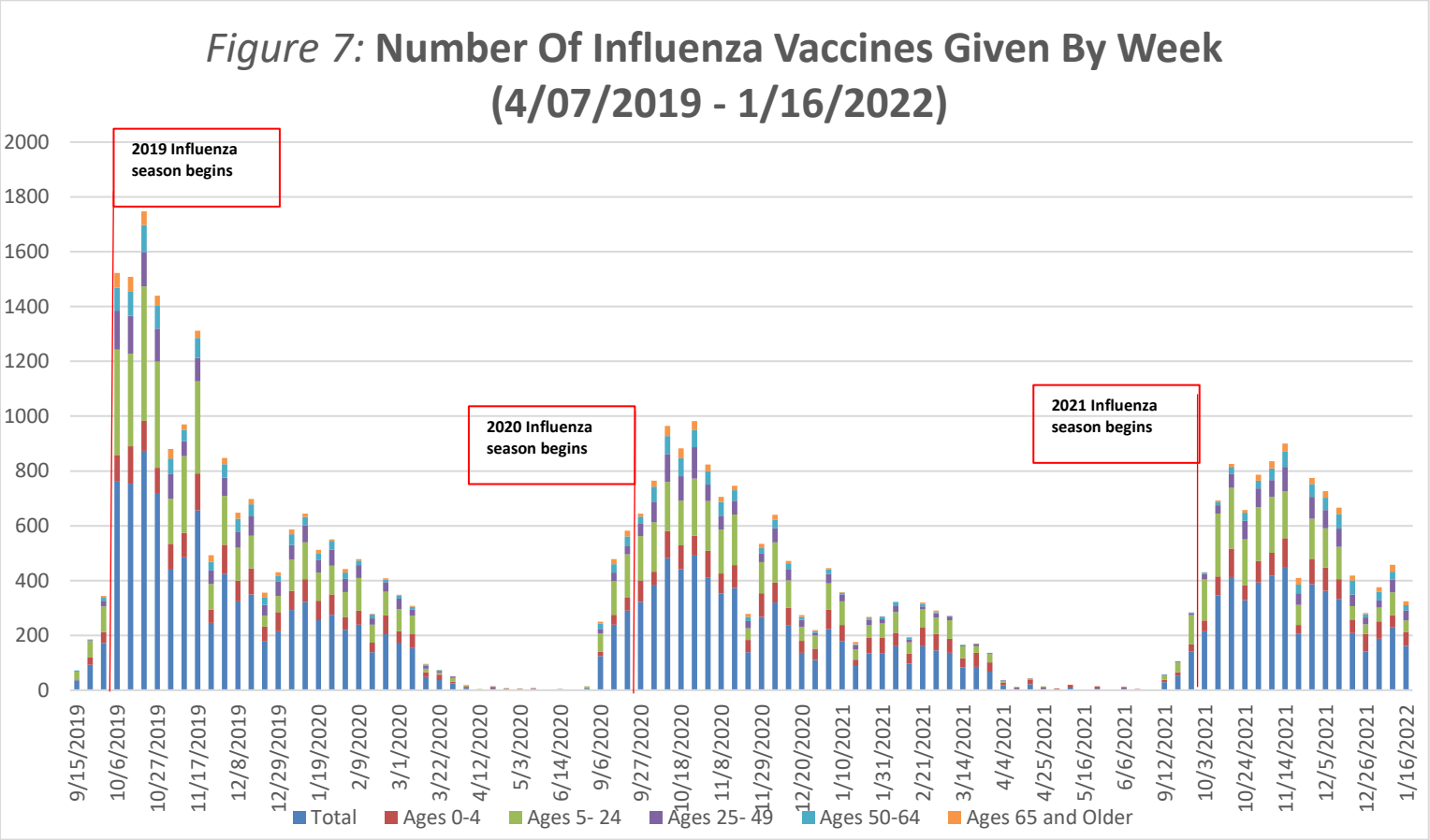
To get a broader picture of the impact of influenza on the community, the Centers for Disease Control and Prevention (CDC) partners with clinics and medical practices in a voluntary program called ILINet, through which the number of individuals with certain symptoms similar to influenza ("Influenza-Like-Illness, or ILI)[1] are reported weekly, along with the total number of patients seen at the clinic or practice. This voluntary ("sentinel") reporting allows the calculation of the percentage of outpatient visits attributable to ILI. Within Cincinnati, three sites participate in this program, with the three coordinated through the Cincinnati Health Department (CHD). The three sites in Cincinnati are two full-scale primary care health centers, and one school-based health center at a high school.

Weekly Sentinel surveillance has begun at the three partner sites. These sentinel surveillance partners will send in at least **one** ILI specimen a week to the state of Ohio for testing. During MMWR week 50, 308 ILI samples had been sampled and one positive Influenza case was identified.



Influenza Immunizations

The graph below (figure 7), shows the number of influenza vaccinations given by age group per week to patients through CHD's Cincinnati Community Primary Care (CCPC) Health centers. A red line has indicated the beginning of each Influenza season. As of (1/16/22) a total of 4,922 influenza vaccines have been given since the beginning of the 2021 influenza season (MMWR week 40). This total is lower than the previous influenza seasons as indicated by the graph below.



Influenza Vaccine Types for the 2021-2022 Season

All these formulas are quadrivalent which means one does of the vaccine is created to defend the body from four different strains of the influenza virus. For example, there are 2 types of Influenza A and 2 types of Influenza B. There are also available non-egg-based vaccines for this season. Currently in Ohio there is circulation of mostly Influenza A cases.

The Ohio Department of Health Laboratory has tested 361 specimens for influenza during the 2021-2022 influenza season: of these, 1 tested positive for influenza A(H1N1pdm09), 316 for influenza A(H3N2), 5 for influenza B, and 1 for swine variant influenza A(H3N2v) (through 1/22/2022).

Vaccine Components, 2021-2022 Season

The influenza vaccine components are chosen each season based on which viruses are suspected to circulate during the upcoming influenza season. The Centers for Disease Control and Prevention (CDC) and other World Health Organization (WHO) Collaborating Centers work together to test and characterize influenza specimens throughout each flu season in order to determine which viruses are most suitable for vaccine strain selection. The influenza strain selections for the Northern Hemisphere are finalized in late winter of the preceding season and vaccine production occurs over the spring and summer. For more information regarding vaccine strain selection, please visit the "Selecting Viruses for the Seasonal Influenza Vaccine" CDC webpage at: https://www.cdc.gov/flu/prevent/vaccine-selection.htm

Vaccine Components, 2021-2022 Season

Vaccine Type	A/B	Virus (2021-2022)	Quadrivalent*
Cell- and Recombinant-Based Vaccines*	A	A/Cambodia/e0826360/2020 (H3N2)-like virus (updated)	X
		A/Wisconsin/588/2019 (H1N1)pdm09-like virus (updated)	X
	B	B/Washington/02/2019 (B/Victoria lineage)-like virus	X
		Phuket/3073/2013-like (B/Yamagata lineage)	X
Egg-Based Vaccines	A	A/Cambodia/e0826360/2020 (H3N2)-like virus (updated)	X
		A/Victoria/2570/2019 (H1N1)pdm09-like virus (updated)	X
	B	B/Washington/02/2019 (B/Victoria lineage)-like virus	X
		Phuket/3073/2013-like (B/Yamagata lineage)	X

*No trivalent preparations are available for cell and recombinant-based vaccines or for egg-based vaccine for the 2021-22 season.
Refer to weekly PDF reports for historical vaccine components.

Influenza Treatment

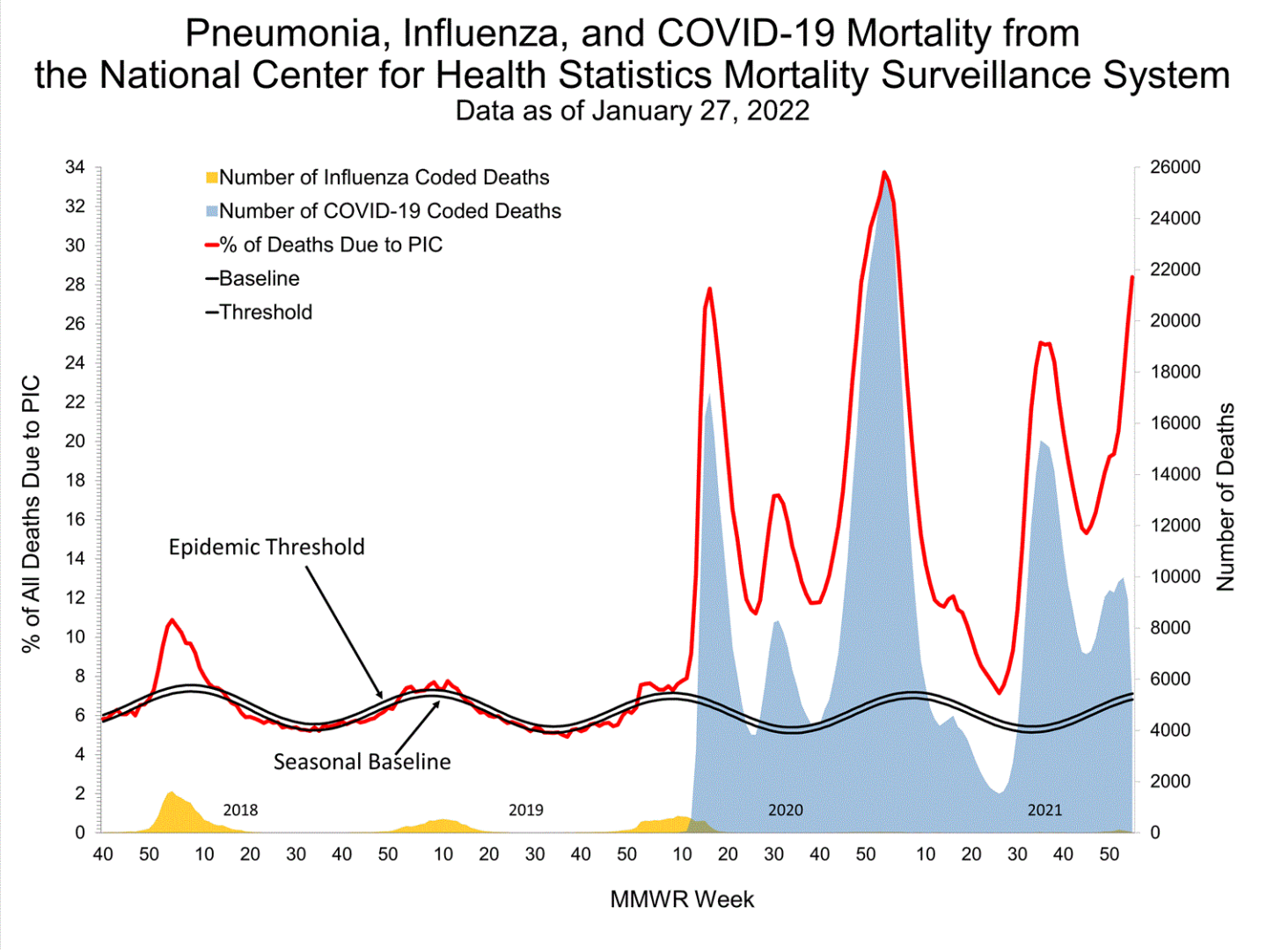
The CDC recommends antiviral medications to treat both influenza A and B, these can be important treatment in addition to the influenza vaccine. The CDC also recommends that antiviral treatments be used as soon as possible for patients with suspected or confirmed cases when they are hospitalized, outpatients with risk for complications or outpatients with progressive disease. Antivirals can also be given by clinicians on a case basis to shorten influenza symptoms. Antivirals are the most effective when given **within two days after the beginning of illness**. Due to the importance of early treatment, decisions about starting an antiviral treatment **should not wait for laboratory confirmation of influenza**.

Currently the two most common and widely perscribed oral antiviral medications approved by the FDA, are ***Oseltamivir* (Tamiflu)**, and ***Baloxavir Marboxil* (Xofluza)**. *Oseltamivir* (Tamiflu) is approved by the FDA for early treatment of uncomplicated influenza (non-hospitalized cases) in people two weeks and older. *Baloxavir Marboxil* (Xofluza) is FDA approved for treatment of uncomplicated influenza in those 12 years and older, it is not recommended for those who are pregnant, breastfeeding. immunocompromised, hospitalized patients or those outpatients with a progressive influenza illness.

The above treatment is the most common and widespread, the CDC also recommends the oral treatment *Zanamivir* (Relenza) for uncomplicated cases of influenza in people 7 years and older, and to prevent influenza in those 5 years and older. It is not recommended for those who have underlying respiratory conditions such as asthma. *Peramivir* (Rapivab) is used for intravenous administration and is approved for treatment of uncomplicated Influenza for those 2 years and older.

Influenza, Pneumonia, and COVID-19 Mortality

Based on NCHS mortality surveillance data as of January 27th, 2022, 28.4% of the deaths that occurred during the week ending January 22nd (week 3), were due to pneumonia, influenza, and/or COVID-19 (PIC). This percentage is above the epidemic threshold of 7.1% for this week. Among with the 5,940 PIC deaths reported for this week, 5,160 had COVID-19 listed as an underlying or contributing cause of death on the death certificate, and 27 listed influenzas, indicating that current PIC mortality is due primarily to COVID-19 and not influenza. The data presented are preliminary and may change as more data are received and processed. This figure was provided by and can be found at https://www.cdc.gov/flu/weekly/index.htm#Clinical



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Summary
To date the influenza activity for the State of Ohio is above the overall hospitalization seasonal threshold which is below 25 hospitalized cases per week. In total, ODH has reported 487 hospitalized cases of influenza so far this season, and 29 hospitalizations for the current MMWR week 3. The Ohio Department of Health (ODH) has reported low percentages of ILI in outpatient settings from sentinel ILINet providers, in addition the percentage of emergency room visits exhibiting fever/ILI are decreasing but are still above the seasonal baseline for Ohio. As of 1/23/22 no pediatric deaths have been reported in Ohio, however, there has been 5 pediatric deaths reported by the CDC this Influenza season. These cases are in every Ohio region, 43 hospitalized cases have been reported in Hamilton County this season, 19 of which are Cincinnati City cases. According to weekly CDC influenza reporting, the percent of outpatient Illness is 2.8%, which is a decrease from last week, however still above the United States baseline.

Given the influenza activity in Ohio and the Southwest region holding the second most hospitalized cases, at 94. It is likely that Cincinnati influenza circulation will continue, and hospitalized cases of Influenza will be more common than the 2020-2021 influenza season. This could be connected to college campus influenza circulation, large sports related gatherings, and decreased COVID-19 protocols such as social distancing, mask wearing could also contribute to increased influenza activity. There have been reported cases of COVID-19 and Influenza co-infection, as of 1/23/22 one of these cases have been hospitalized. Out of the 19 cases, 4 were vaccinated for influenza, 2 were not and the remaining hospitalization vaccination status is unknown.

References and Links

- US Influenza Activity: https://www.cdc.gov/flu/weekly/index.htm#Clinical
- Ohio Flu Activity Reports: https://odh.ohio.gov/wps/portal/gov/odh/know-our-programs/seasonal-influenza/influenza-dashboard/influenza-dashboard
- Past Cincinnati Influenza Reports: https://www.cincinnati-oh.gov/health/community-health-data/seasonal-influenza-activity-reports/
- CDC Antiviral Treatments: https://www.cdc.gov/flu/professionals/antivirals/links.htm