Chicago Influenza and Respiratory Virus Surveillance Report

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Chicago Department of Public Health

Online Influenza Dashboard

Influenza Surveillance in Chicago

The Chicago Department of Public Health utilizes various surveillance indicators to monitor influenza activity in Chicago. This includes surveillance for influenza-associated intensive care unit (ICU) hospitalizations, monitoring circulating influenza viruses, as well outpatient and emergency department visits that are due to influenza-like illness (ILI). Influenza surveillance data are typically aggregated by week. This report is updated on Fridays for the previous Saturday through Sunday. On all graphs, the week ending date is displayed. Ending dates are accurate for the current season but are approximations for all other years. All data presented here are preliminary and may change as more reports are received. Reported percentages for previous seasons represent final, end of season data and may differ from previously published reports. All data presented on this page, except where otherwise noted, are available through the Chicago Data Portal[1].

Note for the 2021-2022 season: The COVID-19 pandemic has influenced influenza activity and surveillance in several ways. Surveillance indicators that monitor outpatient and emergency department visits for influenza-like illness will capture visits for other respiratory illnesses, like COVID-19, that have similar symptoms. Additionally, health care seeking behavior has changed during the COVID-19 pandemic which may limit our ability to monitor influenza activity. As a result, our typical indicators may be less reliable in measuring influenza activity and should be interrupted with caution and in context with other respiratory pathogens circulating at the time. COVID-19 mitigation measures, like masking and social distancing may also change the timing and intensity of influenza activity this year. Information about the current COVID-19 situation in Chicago can be found on the COVID-19 Dashboard[2].

Expanded respiratory virus surveillance: In order to provide additional context regarding influenza activity, CDPH, along with participating hospital laboratories, has expanded laboratory surveillance to include other respiratory viruses. The data represented here are a subset of all the respiratory virus testing performed in Chicago and may include both Chicago and non-Chicago residents. The facilities reporting data are the largest medical centers in Chicago and represent nearly half of all acute care hospitals in the city. Additional respiratory virus surveillance data is presented at the end of this report including emergency department visits for RSV among children less than five years of age.

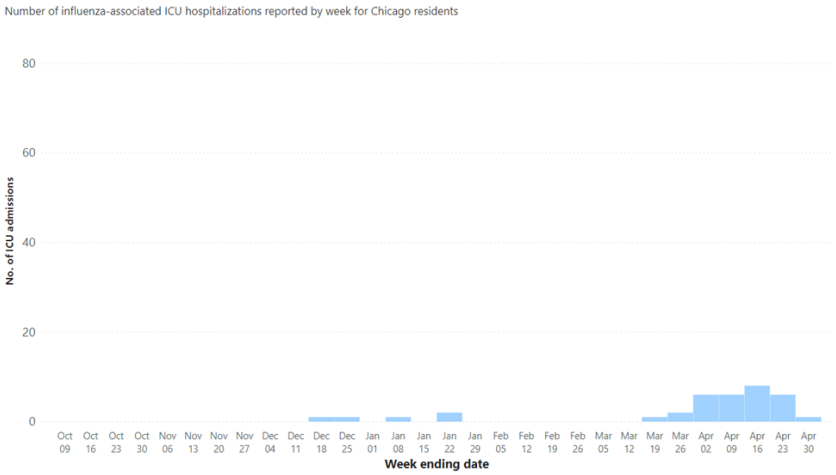
Weekly Surveillance Summary

- Currently, the risk of influenza infection remains low, however the percent of specimens testing positive for influenza and the number of reported influenza-associated ICU hospitalizations have increased in recent weeks.
- One influenza-associated ICU hospitalization was reported for the previous week. Since October 3, 2021, 35 influenza-associated ICU hospitalizations have been reported.
- 278 of 4,570 (6.1%) reported specimens tested for influenza were positive. Since October 3, 2021, 2,599 of 111,989 (2.3%) reported specimens tested for influenza have been positive.
- The proportion of emergency department visits and outpatient visits for influenza-like illness (ILI) are below local thresholds, but have increased in recent weeks.
- Clinicians should consider influenza testing in addition to SARS-CoV-2 testing and review guidelines[3] for prescribing anti-viral medications as prophylaxis or empiric treatment.
- To protect against influenza infection all Chicagoans six months and older are encouraged to get vaccinated and should ask their healthcare provider or pharmacist about vaccine availability. Influenza and COVID-19 vaccines may be administered on the same day with no waiting between vaccinations required.
- For those without a healthcare provider or whose healthcare providers do not have the influenza vaccine, a list of City of Chicago Walk-In Immunization Clinics[4] is available on the city website and by calling 311.
- Chicago has experienced unusual seasonality and transmission patterns of RSV throughout the COVID-19 pandemic. Chicago is currently outside of the usual RSV season and local RSV transmission has remained low over recent weeks.
- On April 28, 2022, the CDC reported[5] that a human specimen has tested positive for avian influenza A (H5) virus (H5 bird flu) as reported by the Colorado Department of Health and Environment and confirmed by CDC. This person had direct exposure with infected poultry. Highly pathogenic avian influenza (HPAI) A(H5N1) viruses have been detected in U.S. wild birds, commercial poultry, and backyard flocks beginning in January 2022. CDC considers the current risk to the general public's health in the U.S. to be low. For more information visit the CDC Avian Influenza Current Situation Summary.[6]

Influenza Intensive Care Unit (ICU) Hospitalizations

In Illinois, influenza associated Intensive Care Unit (ICU) hospitalizations are reportable as soon as possible, but within 24 hours. Influenza associated ICU hospitalizations are defined as individuals hospitalized in an ICU with a positive laboratory test for influenza A or B, including specimens identified as influenza A/H3N2, A/H1N1pdm09, and specimens not subtyped (e.g., influenza positive cases by PCR or any rapid test such as EIA).

This chart shows the number of reported influenza-associated ICU hospitalizations by week of when the patient tested positive for influenza. It is not a census of those currently hospitalized in the ICU for influenza.



This table summarizes selected characteristics of the number of reported influenza-associated ICU hospitalizations for the current week and the cumulative number since the beginning of the season.

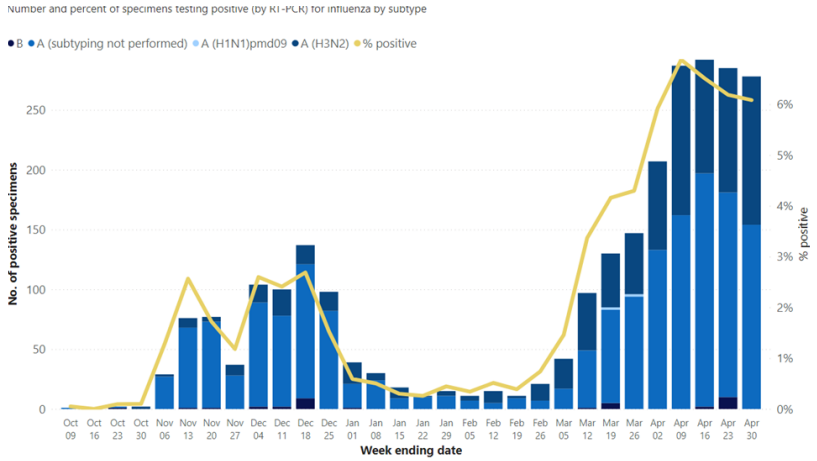
Characteristics of Influenza-Associated ICU Hospitalizations

Group	Current Week Count	Current Week %	Cumulative Count	Cumulative %
Citywide				
Citywide	1	100.0%	35	100.0%
Age				
0-4	0	0.0%	5	14.3%
5-17	0	0.0%	3	8.6%
18-24	0	0.0%	1	2.9%
25-49	0	0.0%	9	25.7%
50-64	1	100.0%	10	28.6%
65+	0	0.0%	7	20.0%
Unknown	0	0.0%	0	0.0%
Gender				
Female	1	100.0%	18	51.4%
Male	0	0.0%	17	48.6%
Race-Ethnicity				
Latinx	0	0.0%	4	11.4%
Black Non-Latinx	1	100.0%	26	74.3%
White Non-Latinx	0	0.0%	3	8.6%
Asian Non-Latinx	0	0.0%	0	0.0%
Other Non-Latinx	0	0.0%	1	2.9%
Unknown-Race	0	0.0%	1	2.9%

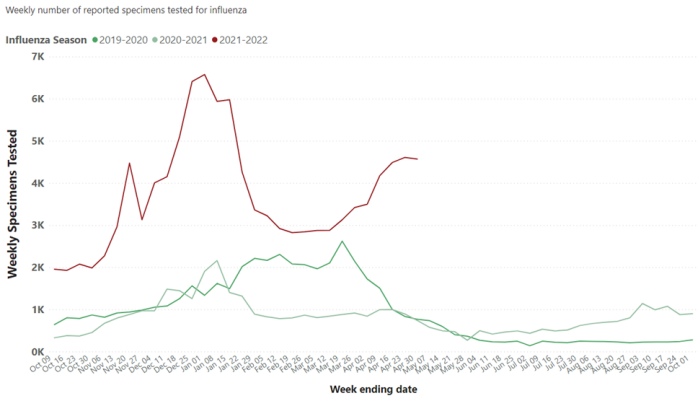
Influenza Laboratory Surveillance

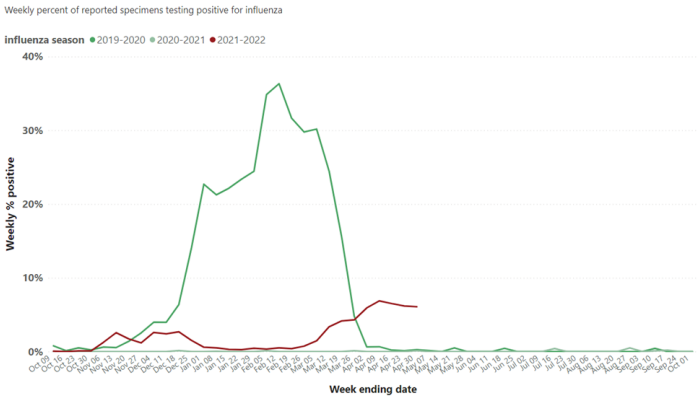
Data on influenza virus test results are reported by several Chicago hospital laboratories performing influenza RT-PCR. Laboratories submit aggregate data for all influenza tests performed; therefore, data may contain results for individuals that reside outside of Chicago. It is meant as an indicator of circulating influenza viruses in the area. Data represents positive laboratory results regardless of hospitalization status. Data does not represent all cases of influenza since many individuals with influenza do not seek medical care or get tested for influenza.

This chart shows the percent of specimens tested for influenza that were positive (line graph) and the number of positive influenza tests by influenza virus subtype (bar graph).

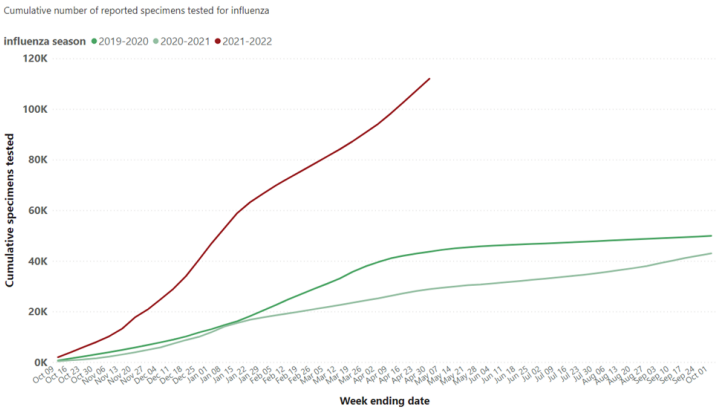


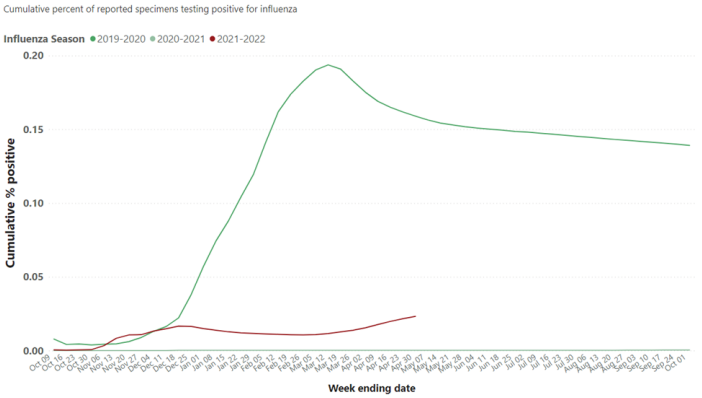
The following charts show the **weekly** number of specimens tested for influenza and the weekly percent that were positive.





The following charts show the **cumulative** number of specimens tested for influenza and the cumulative percent that were positive.

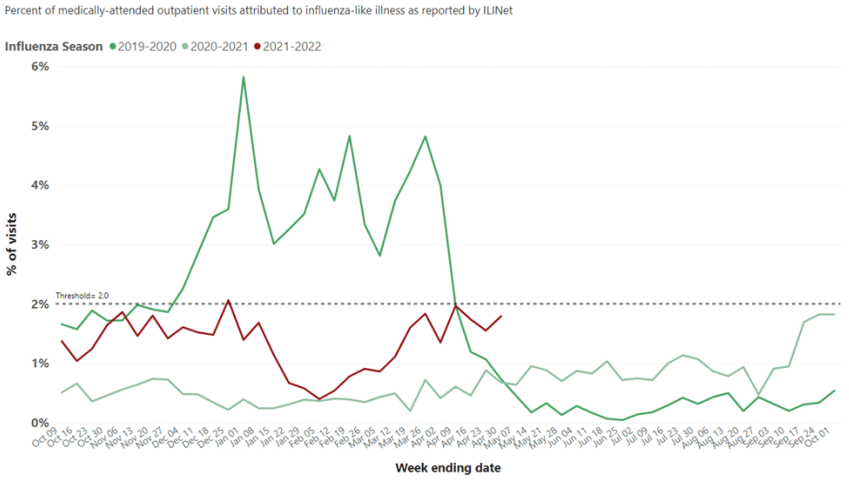




Influenza Outpatient Illness Surveillance

Several outpatient clinics throughout Chicago participate in CDC's Influenza-like Illness Surveillance Network (ILINet[7]) by reporting on a weekly basis the total number of outpatient clinic visits, and of those visits, the number with influenza-like illness (ILI). ILI is defined as fever plus cough or sore throat.

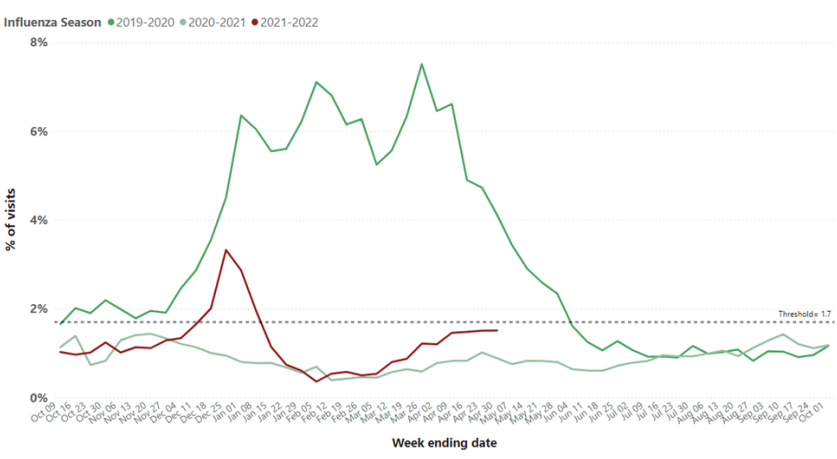
This chart shows the percent of medically-attended outpatient visits attributed to influenza-like illness as reported by ILINet facilities in Chicago by week. By default, the chart shows the current season and previous two seasons.



Influenza Emergency Department Illness Surveillance

ESSENCE[8] is an electronic syndromic surveillance system that utilizes the chief complaints of patients visiting emergency departments to monitor for influenza-like illness. All acute-care hospitals in Illinois report emergency department data to this system. Currently, ESSENCE captures nearly every emergency department visit in the city on a daily basis.

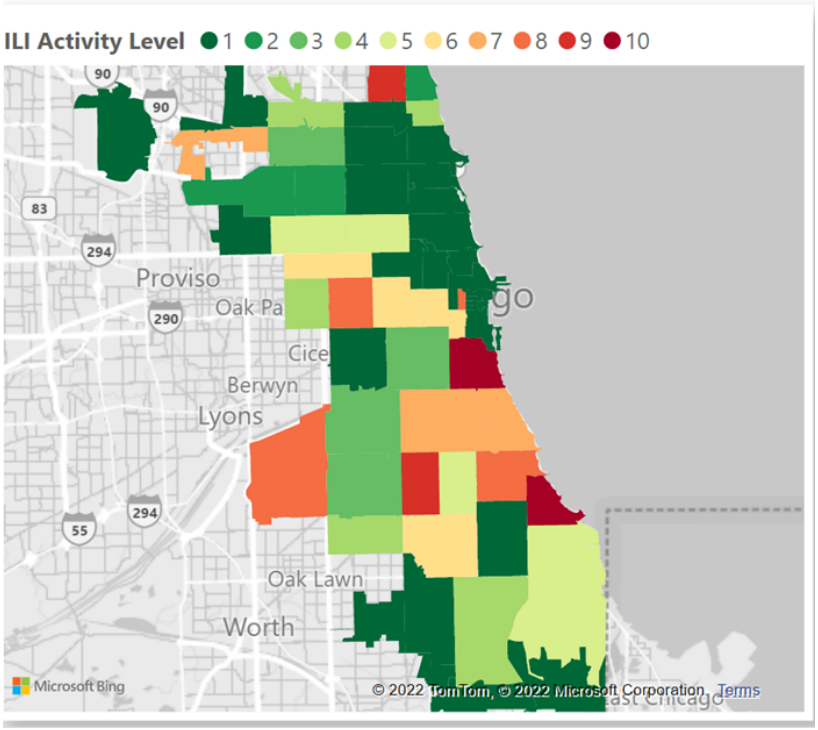
This chart shows the percent of emergency department visits attributed to influenza-like illness for Chicago zip codes based on chief complaint data submitted to ESSENCE by week. By default, the chart shows the current season and previous two seasons.



Influenza-like Illness Activity Map

ILI Activity Level is determined by comparing the ILI percentage for each zip code for the current week to the mean ILI percentage during the non-influenza weeks for the previous season (usually the summer months of May through September). Level 1 corresponds to an ILI percentage below the mean, level 2 to an ILI percentage less than one standard deviation (SD) above the mean, level 3 to an ILI percentage more than one, but less than two standard deviations above mean, and so on, with level 10 corresponding to an ILI percentage more than eight standard deviations above the mean. Variations in ILI activity levels should not be interpreted as an influenza cluster or outbreak as other illnesses can cause similar symptoms (including COVID-19).

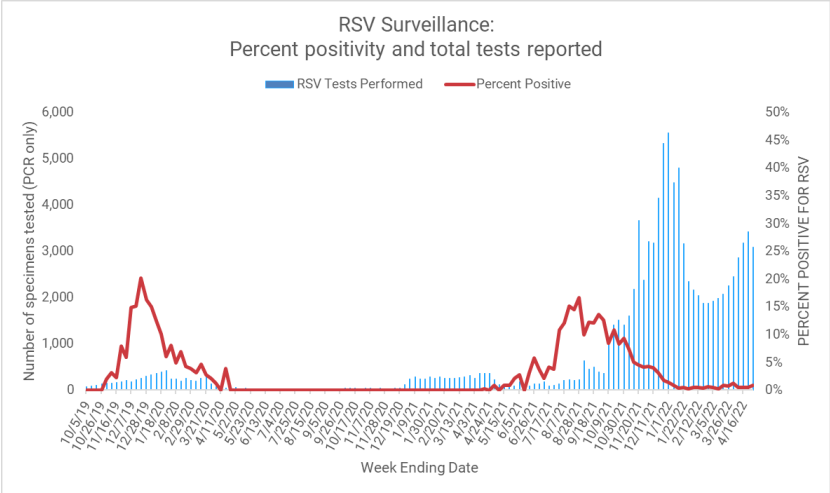
This map shows the influenza-like Illness (ILI) activity levels by patient zip code determined by the chief complaint data submitted to ESSENCE for the current season.



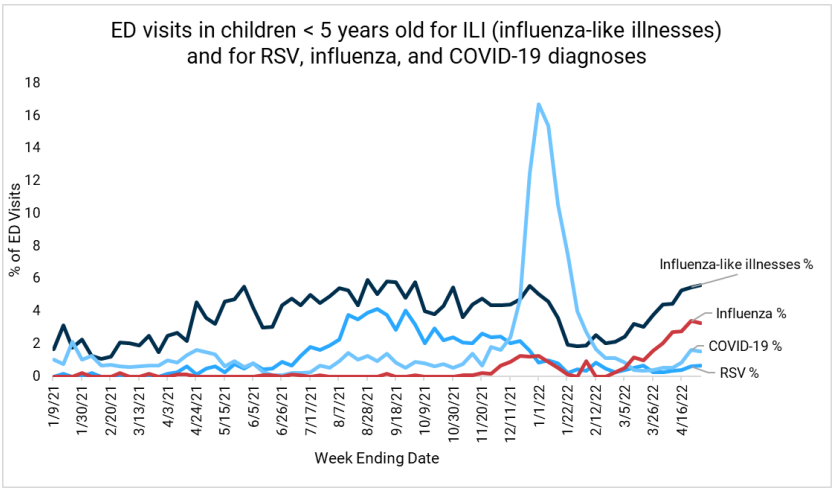
Respiratory syncytial virus (RSV) among children < 5 years of age

While RSV can affect people of all ages, it is more common, and more frequently causes severe illness, in younger children (<5 years old). Transmission patterns of RSV during the COVID-19 pandemic have been atypical. Below is local data on laboratory testing and emergency department visits for children <5 years old.

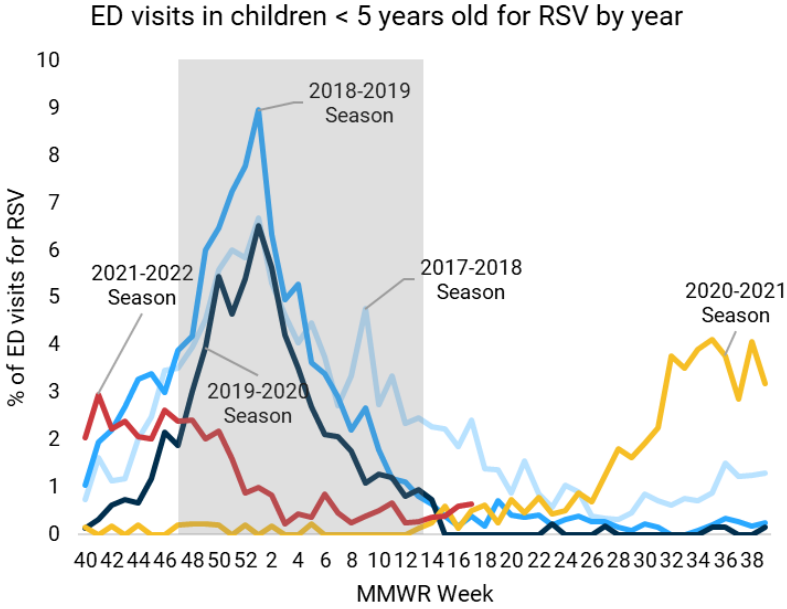
This figure shows current and historical percent positivity (PCR only), along with testing volume for context. These data are aggregated from a set of Chicago hospitals and labs, some of whom report directly to CDPH and others whom report to NREVSS (The National Respiratory and Enteric Virus Surveillance). Note: not all contributing hospitals reported for every week.



This figure shows the percent of emergency department visits for influenza-like illnesses (syndromic surveillance), as well as for diagnoses of RSV, influenza, and COVID-19 illnesses among children <5 years old. The clinical presentation of RSV, flu, and COVID-19 overlap, therefore understanding likelihood of infection for an individual patient should take into consideration circulating levels of each respiratory virus.



This figure shows the percent of ED visits for RSV among children <5 years old in the current and previous four seasons. The shaded area marks the typical RSV season. These data are from ESSENCE (The Electronic Surveillance System for the Early Notification of Community-Based Epidemics).

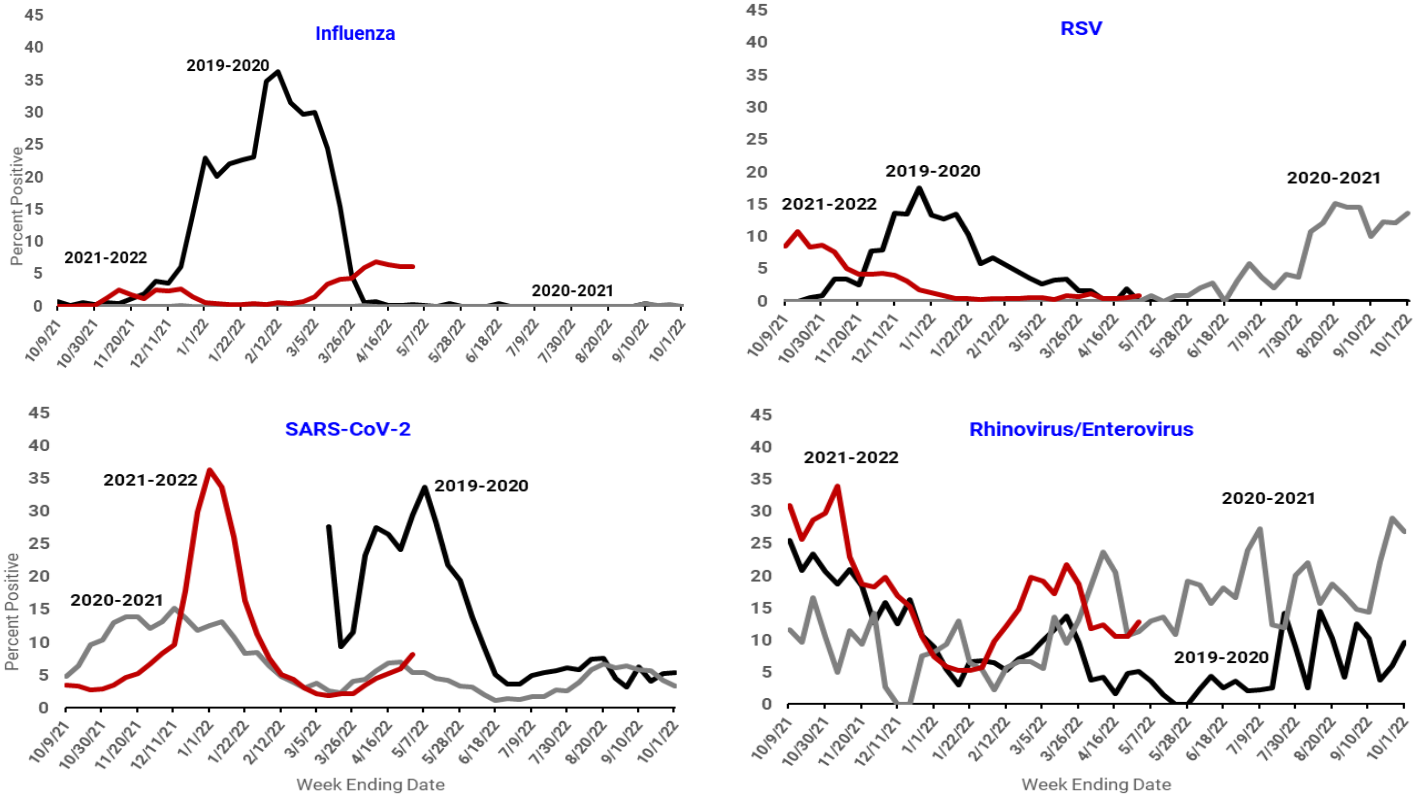


Recommendations for Synagis (palivizumab): The American Academy of Pediatrics (AAP) 2021 Red Book (32nd edition) defines the onset of RSV season as the first week of two consecutive weeks that RSV PCR test positivity is 3% or greater. Chicago experienced atypical early seasonal-level transmission of RSV. Immunoprophylaxis with palivizumab (trade name Synagis) is recommended for children at high risk of serious disease and hospitalization. Eligibility criteria are outlined in the Red Book. The Illinois Department of Healthcare and Family Services provided approval for early dosing, and on November 1, the typical coverage period for palivizumab began.

Expanded Respiratory Virus Laboratory Surveillance
The table below includes respiratory virus PCR data from several hospital laboratories in Chicago as well as one commercial laboratory serving Chicago facilities. The data represented in the table are a subset of all the respiratory virus testing performed in Chicago and may include both Chicago and non-Chicago residents. The facilities reporting data are the largest medical centers in Chicago and represents nearly half of all acute care hospitals in the city. The charts below represent the same data as in the table for the current season, but includes data from the previous two seasons.

	Week Ending April 30, 2022		Since October 3, 2021	
Respiratory Pathogen PCR	**# Tested**	**% Positive**	**# Tested**	**% Positive**
Influenza*	4,570	6.1%	111,989	2.3%
RSV*	3,087	<1%	82,695	2.2%
SARS-CoV-2*	4,834	8.2%	207,468	12.2%
Parainfluenza	1,430	1.1%	36,054	1.3%
Rhinovirus/Enterovirus	857	12.8%	22,632	16.4%
Adenovirus	857	4.3%	22,632	2.9%
Human Metapneumovirus	857	7.7%	22,662	3.3%
Seasonal Coronaviruses	1,430	5.4%	35,867	2.1%

* represents both dualplex and multiplex PCR data. All other data represents only multiplex panels that include the specified pathogens (e.g. BioFire) .



National and State Influenza Surveillance

The Centers for Disease Control and Prevention's FluView report[9] provides national updates and trends related to the intensity of influenza activity across the United States, as well as detailed information on antiviral resistance, severity of illness, and other topics. Updates specific to Illinois[10] and Suburban Cook County[11] are also available online. Current and archived issues of the Chicago Flu Update can be found on the CDPH website section Current Flu Situation in Chicago.[12]

Referenced Websites

1. https://data.cityofchicago.org/browse?q=flu&sortBy=relevance&tags=flu
2. https://www.chicago.gov/city/en/sites/covid-19/home/covid-dashboard.html
3. https://www.chicagohan.org/alert-detail?p_p_id=hanalertdetailsweb&p_p_lifecycle=2&p_p_state=normal&p_p_mode=view&p_p_resource_id=download&p_p_cacheability=cacheLevelPage&_hanalertdetailsweb_attachmentId=45691699&_hanalertdetailsweb_alertId=46669192
4. https://www.chicago.gov/city/en/depts/cdph/supp_info/health-protection/immunizations_walk-inclinics.html
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