2021–2022 Recommendations for Influenza Prevention and Treatment in Children: An Update for Pediatric Practitioners

Clinician Outreach and Communication Activity (COCA) Call

Thursday, October 7, 2021

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Objectives

At the conclusion of today's session, the participant will be able to accomplish the following—

1. Review data from the 2020–2021 U.S. influenza season to inform preparations for the 2021–2022 U.S. influenza season.
2. Highlight key recommendations in the AAP influenza policy statement, "Recommendations for Prevention and Control of Influenza in Children, 2021–2022" and in the CDC Advisory Committee on Immunization Practices' document, "Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices—United States, 2021–22 Influenza Season."
3. Discuss the importance of vaccinating, testing, and treating influenza during the COVID-19 pandemic.
4. Review recommendations about using influenza antiviral in children.

To Ask a Question

- Using the Zoom Webinar System
  - Click on the “Q&A” button
  - Type your question in the “Q&A” box
  - Submit your question

- If you are a patient, please refer your question to your healthcare provider.

- If you are a member of the media, please direct your questions to CDC Media Relations at 404-639-3286 or email media@cdc.gov.

Today's Presenters

- **David Shay, MD**
  Medical Officer
  National Center for Immunization and Respiratory Diseases
  Centers for Disease Control and Prevention

- **Flor Munoz, MD, MSc, FAAP**
  Associate Professor of Pediatrics, Infectious Diseases, and Molecular Virology and Microbiology
  Baylor College of Medicine

2021-2022 Recommendations for Influenza Prevention and Treatment in Children: An Update for Pediatric Providers

David K Shay, MD, MPH

Influenza Division, CDC

Clinician Outreach and Communication Activity (COCA) Call/Webinar

October 7, 2021

A Review of Last Season…

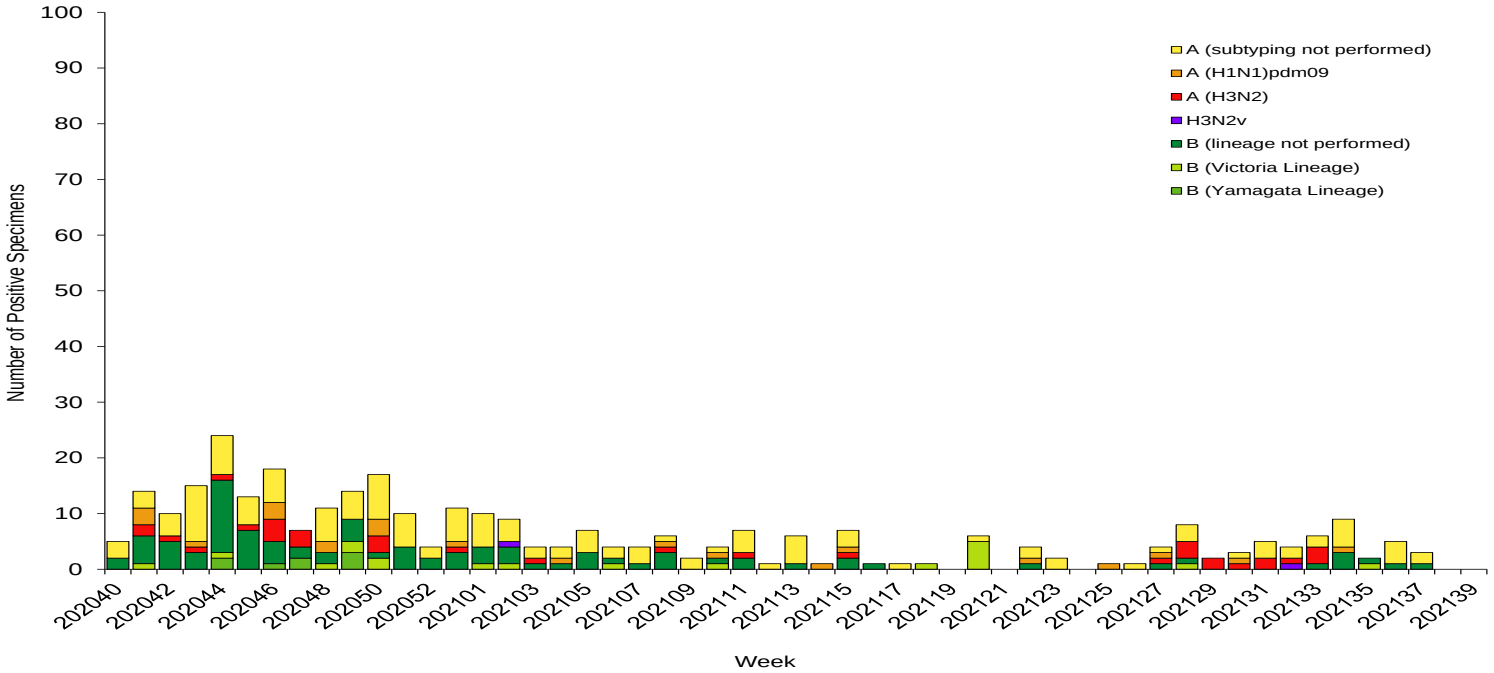
2020-2021 Influenza Season

- Flu activity was unusually low in the US and globally during 2020-21
- During Sept 2020-May 2021, only 0.2% of specimens submitted were positive for influenza
  - For the 3 seasons before the pandemic, the proportion of specimens testing positive for flu peaked between 26% and 30%
- Dramatically fewer illnesses, hospitalizations, and deaths related to flu
- Cumulative rate of lab-confirmed influenza-associated hospitalizations in 2020-2021 was the lowest recorded since data collection began in 2005
- CDC received 1 report of a pediatric flu death in 2020–2021
  - Previously ranged from 37 (during 2011-12) to 199 (during 2019-20).

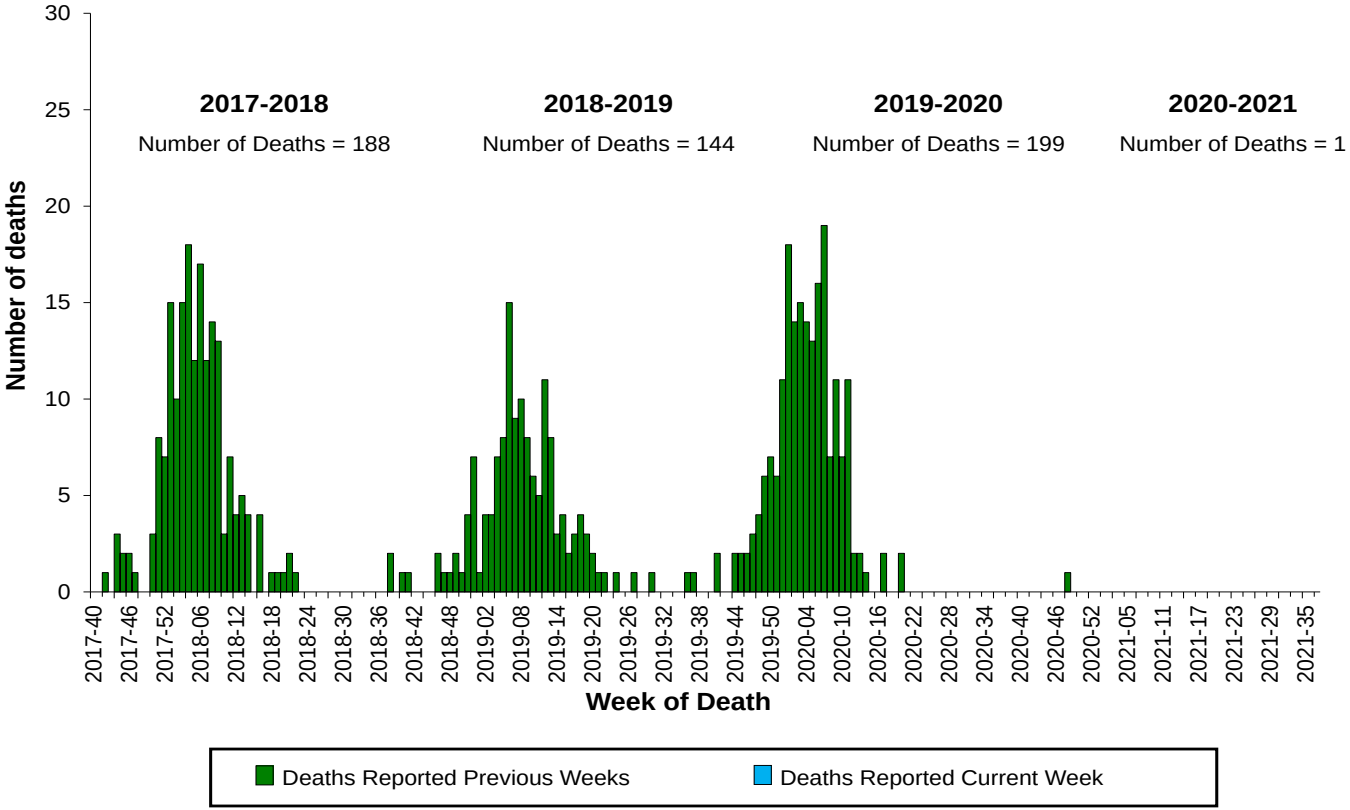
Why?

- COVID-19 mitigation measures
  - Physical distancing, staying home
  - Wearing face masks
  - Improved hand hygiene
  - School closures
  - Improved indoor ventilation
- A record number of flu vaccine doses – 193.8 million – were distributed in the US during 2020-2021

Influenza Positive Tests Reported by U.S. Public Health Laboratories, September 27, 2020 – September 18, 2021



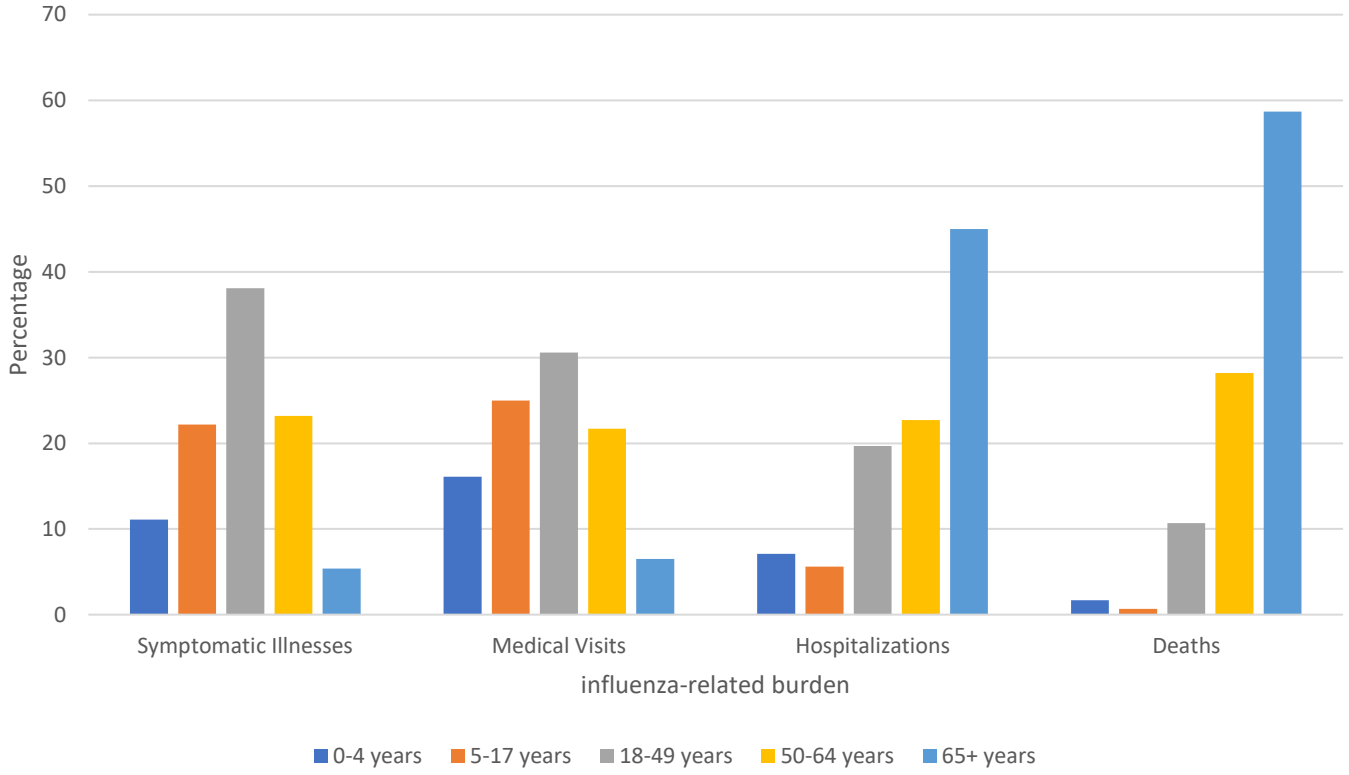
Number of Influenza-Associated Pediatric Deaths by Week of Death, 2017-2018 to 2020-2021



Preliminary Burden Estimates: 2019-2020 US Season

	Symptomatic Illnesses		Medical Visits		Hospitalizations		Deaths	
Age group	Estimate	95% UI†	Estimate	95% UI†	Estimate	95% UI†	Estimate	95% UI†
0-4 yrs	3,878,588	(2,979,865, 6,554,798)	2,598,654	(1,954,987, 4,376,793)	27,040	(20,774, 45,697)	347	(90, 571)
5-17 yrs	7,752,967	(5,836,198, 12,157,092)	4,031,543	(2,970,975, 6,408,299)	21,258	(16,002, 33,334)	139	(31, 406)
18-49 yrs	13,311,444	(9,807,734, 23,970,578)	4,925,234	(3,494,425, 8,948,555)	74,717	(55,051, 134,547)	2,184	(1,688, 4,770)
50-64 yrs	8,125,732	(6,132,930, 14,699,555)	3,494,065	(2,503,300, 6,327,545)	86,171	(65,038, 155,885)	5,727	(3,845, 10,222)
65+ yrs	1,881,249	(1,299,641, 4,394,897)	1,053,499	(701,664, 2,473,436)	171,023	(118,149, 399,536)	11,945	(10,229, 70,284)
All ages	34,949,979	(29,761,825, 49,176,022)	16,102,995	(13,673,370, 22,307,300)	380,209	(312,272, 631,906)	20,342	(18,061, 79,906)

Proportions of Outcomes, by Age Group: 2019-2020



Sources of Influenza Season Data from CDC

- Updated surveillance information is available each Friday
  - FluView, static report: https://www.cdc.gov/flu/weekly/
  - FluView Interactive, online application: https://www.cdc.gov/flu/weekly/fluviewinteractive.htm

- Vaccine effectiveness estimates
  - Morbidity and Mortality Week Report (MMWR) updates: https://www.cdc.gov/mmwr/index.html
  - Advisory Committee on Immunization Practices (ACIP) meetings: https://www.cdc.gov/vaccines/acip/meetings/index.html

CDC Antiviral Treatment Recommendations—1

- Antiviral treatment is recommended as early as possible for any patient with confirmed or suspected influenza who is:
  - Hospitalized
  - Has severe, complicated, or progressive illness
  - Is at high risk for influenza complications

https://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm

People at High Risk for Influenza Complications for Whom Antiviral Treatment is Recommended

- Children <2 years old (although all children <5 years old are considered at high risk for complications, highest risk is for children <2 years old)
- Adults aged 65 years and over
- Pregnant/postpartum women
- Children ≤18 years old receiving long-term aspirin therapy
- American Indians/Alaska Natives
- People with underlying medical conditions (e.g., pulmonary, cardiac, immunosuppression, neurologic and neurodevelopment conditions)
- Residents of nursing homes/chronic care facilities

https://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm

CDC Antiviral Treatment Recommendations—2

- Antiviral treatment is recommended as early as possible for any patient with confirmed or suspected influenza who is:
  - Hospitalized
  - Has severe, complicated, or progressive illness
  - Is at high risk for influenza complications
- Antiviral treatment can be considered for any previously healthy, symptomatic outpatient not at high risk with confirmed or suspected influenza on the basis of clinical judgment, if treatment can be initiated within 48 hours of illness onset
- Clinical benefit is greatest when antiviral treatment is administered early

https://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm

Influenza Antiviral Medications

- Four antiviral medications are recommended for use in the United States
  - Neuraminidase inhibitors:
    - oseltamivir (oral)
    - zanamivir (inhaled)
    - peramivir (intravenous)
  - Cap-dependent endonuclease inhibitor
    - baloxavir (oral)

https://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm

Influenza Antiviral Medications by Route and Age Indication

Drug	Route	Treatment	Chemoprophylaxis
Oseltamivir	Oral	Any age	≥ 3 months
Zanamivir	Inhaled	≥ 7 years	≥ 5 years
Peramivir	Intravenous	≥ 2 years	Not applicable
Baloxavir*	Oral	≥ 12 years	Not applicable

*Oral baloxavir marboxil is approved by the FDA for treatment of acute uncomplicated influenza within 2 days of illness onset in people 12 years and older. The safety and efficacy of baloxavir for the treatment of influenza have been established in pediatric patients 12 years and older weighing at least 40 kg.

https://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm

Baloxavir Marboxil

- Cap-dependent endonuclease inhibitor: new mechanism of action
- Blocks viral RNA transcription and blocks virus replication
- FDA approved in October 2018 for acute influenza in patients aged 12-64 years
- Oral, single dose
- Baloxavir was associated with:
  - Shorter time to alleviation of symptoms than placebo
  - More rapid declines in viral load and shorter duration of infectious virus detection than oseltamivir or placebo
- Greatest clinical benefit when initiated early after illness onset
- Emergence of viral escape mutants with reduced susceptibility observed in clinical trials

Hayden, et al. NEJM 2018

2021-2022 ACIP Influenza Vaccination Recommendations Update

Routine annual influenza vaccination is recommended for all persons aged ≥6 months who do not have contraindications. For each recipient, a licensed and age-appropriate vaccine should be used. ACIP makes no preferential recommendation for a specific vaccine when more than one licensed, recommended, and age-appropriate vaccine is available. During the 2021–22 influenza season, the following types of vaccines are expected to be available: inactivated influenza vaccines (IIV4s), recombinant influenza vaccine (RIV4), and live attenuated influenza vaccine (LAIV4).

Annual Vaccination

- Routine annual influenza vaccination is recommended for all persons ≥6 months of age who do not have contraindications
- Vaccination is recommended for all— if supply is limited, vaccinate those at highest risk for influenza complications
  - People aged ≥6 months who are at increased risk of complications and severe illness due to influenza
  - Contacts and caregivers of persons
    - <5 years of age
    - ≥50 years of age
    - with medical conditions that put them at higher risk for severe complications from influenza

Increased Risk for Complications and Severe Illness

- Children aged 6-59 months and adults aged ≥50 years
- Persons with chronic pulmonary (including asthma) or cardiovascular (excluding isolated hypertension), renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes mellitus)
- Immunosuppressed persons
- Women who are or will be pregnant during the influenza season
- Children and adolescents who are receiving aspirin- or salicylate-containing medications (who might be at risk for Reye syndrome after influenza virus infection)
- Residents of nursing homes and other long-term care facilities
- American Indians/Alaska Natives
- Persons who are extremely obese (BMI ≥40).

2021-22 ACIP Influenza Statement— 1

- All seasonal influenza vaccines available in the United States for the 2021–22 season are quadrivalent
- 2021–22 U.S. influenza vaccines updated the influenza A(H1N1)pdm09 and influenza A(H3N2) components
- Age indication for the cell culture–based inactivated influenza vaccine, Flucelvax Quadrivalent (ccIIV4) extended from ages ≥4 years to ages ≥2 years
- Administration of influenza vaccines with other vaccines includes considerations for coadministration of influenza vaccines and COVID-19 vaccines

2021-22 ACIP Influenza Statement—2

- Guidance concerning timing of influenza vaccination now states:
  - Vaccination soon after it becomes available can be considered for pregnant women in the third trimester
  - Children who need 2 doses -- aged 6 months through 8 years who haven't received influenza vaccine or haven't received a total of ≥2 doses -- should receive their first dose as soon as possible after it's available to allow the second dose (must be given ≥4 weeks later) to be received by the end of October

2021-22 ACIP Influenza Statement—3

- Contraindications and precautions to the use of ccIIV4 and RIV4 have been modified for those with a history of severe allergic reaction (e.g., anaphylaxis) to an influenza vaccine
  - History of a severe allergic reaction to a previous dose of any egg-based IIV, LAIV, or RIV is a precaution to use of ccIIV4 or RIV4
  - Use of ccIIV4 or RIV4 in such instances should occur in an inpatient or outpatient medical setting under supervision of a provider who can recognize and manage a severe allergic reaction
  - History of a severe allergic reaction to any ccIIV of any valency or any component of ccIIV4 is a contraindication to future use of ccIIV4
  - History of a severe allergic reaction to any RIV of any valency or any component of RIV4 is a contraindication to future use of RIV4.

2021-22 Influenza Vaccine Composition

- Quadrivalent vaccines
  - Influenza A/Victoria/2570/2019 (H1N1)pdm09-like virus (for egg-based vaccines) or an influenza A/Wisconsin/588/2019 (H1N1)pdm09-like virus (for cell culture–based and recombinant vaccines
  - Influenza A/Cambodia/e0826360/2020 (H3N2)-like virus
  - Influenza B/Washington/02/2019 (Victoria lineage)-like virus
  - Influenza B/Phuket/3073/2013 (Yamagata lineage)-like virus

Labeling Change for ccIIV4

- In March 2021, FDA approved use of Flucelvax Quadrivalent (cell culture–based quadrivalent inactivated influenza vaccine or ccIIV4) for children aged 2 through <4 years (previously approved for persons aged ≥4)
- Approval for those aged 4 through <18 years was based on immunogenicity data and required a post-marketing efficacy study
- Expanded approval based on a randomized observer-blinded clinical efficacy study conducted among children aged 2 through <18 years over three seasons
- Flucelvax Quadrivalent demonstrated efficacy against laboratory-confirmed influenza of 54.6% (95% confidence interval = 45.7%–62.1%) compared with a non-influenza control vaccine

Coadministration of Flu & COVID-19 Vaccines

- Simultaneous administration of live and inactivated vaccines yields seroconversion & adverse reaction rates similar to those found vaccines are given separately
- COVID-19 vaccines may be administered without regard to timing of other vaccines
  - Includes simultaneous administration of COVID-19 vaccine and other vaccines on the same day
  - Not known if the reactogenicity of COVID-19 vaccines changes with coadministration
  - When deciding whether to coadminister vaccines with a COVID-19 vaccine, consider whether the patient is behind or at risk of becoming behind on recommended vaccines, risk of vaccine-preventable disease, & reactogenicity profile of the vaccines
- Administer each vaccine in a different injection site
- Administer COVID-19 vaccine and vaccines likely to cause local reactions in different limbs

Additional CDC Resources

- CDC Influenza homepage: https://www.cdc.gov/flu/
- Influenza surveillance: https://www.cdc.gov/flu/weekly/fluactivitysurv.htm
- Influenza vaccination coverage: https://www.cdc.gov/flu/fluvaxview/index.htm
- For Professionals: https://www.cdc.gov/flu/professionals/index.htm
  - Vaccination homepage: https://www.cdc.gov/flu/professionals/vaccination/index.htm
  - 2019-20 ACIP Influenza Recommendations: https://www.cdc.gov/mmwr/volumes/68/rr/rr6803a1.htm
  - Antiviral homepage: https://www.cdc.gov/flu/professionals/antivirals/index.htm
- For Children (created by CDC and endorsed by the AAP): activity book
  - https://www.cdc.gov/phpr/readywrigley/documents/ready_wrigley_flu.pdf

Thank You

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

2021-2022 Influenza Recommendations for Children from the American Academy of Pediatrics

COCA Call, October 7, 2021

Flor M. Munoz, MD, MSc, FAAP

Baylor College of Medicine

American Academy of Pediatrics
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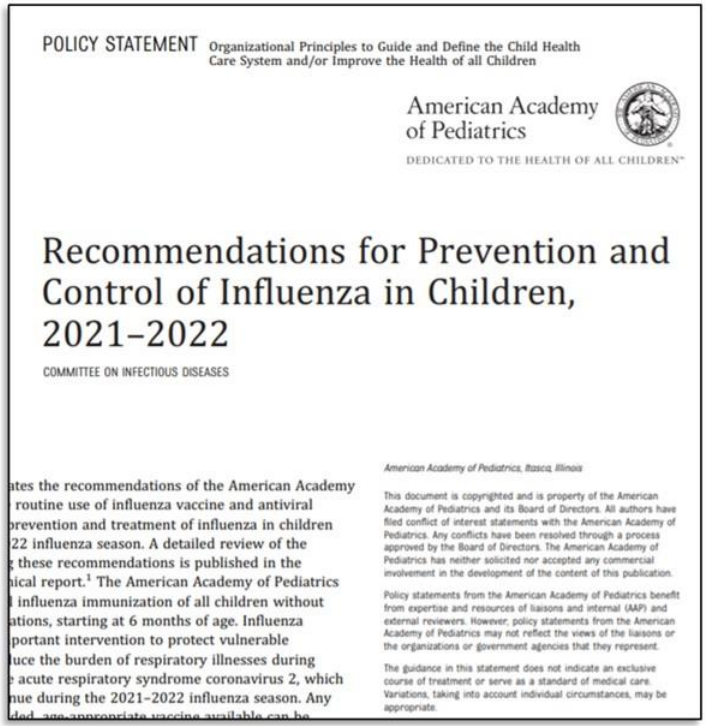
Learning Objectives

- Share the AAP recommendations for influenza immunization during the 2021-2022 season
- Discuss and learn about upcoming considerations for influenza and COVID-19 during the upcoming flu season, including planning for vaccine administration

2021-2022 AAP Recommendations



POLICY STATEMENT Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of all Children

American Academy of Pediatrics

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Recommendations for Prevention and Control of Influenza in Children, 2021–2022

COMMITTEE ON INFECTIOUS DISEASES

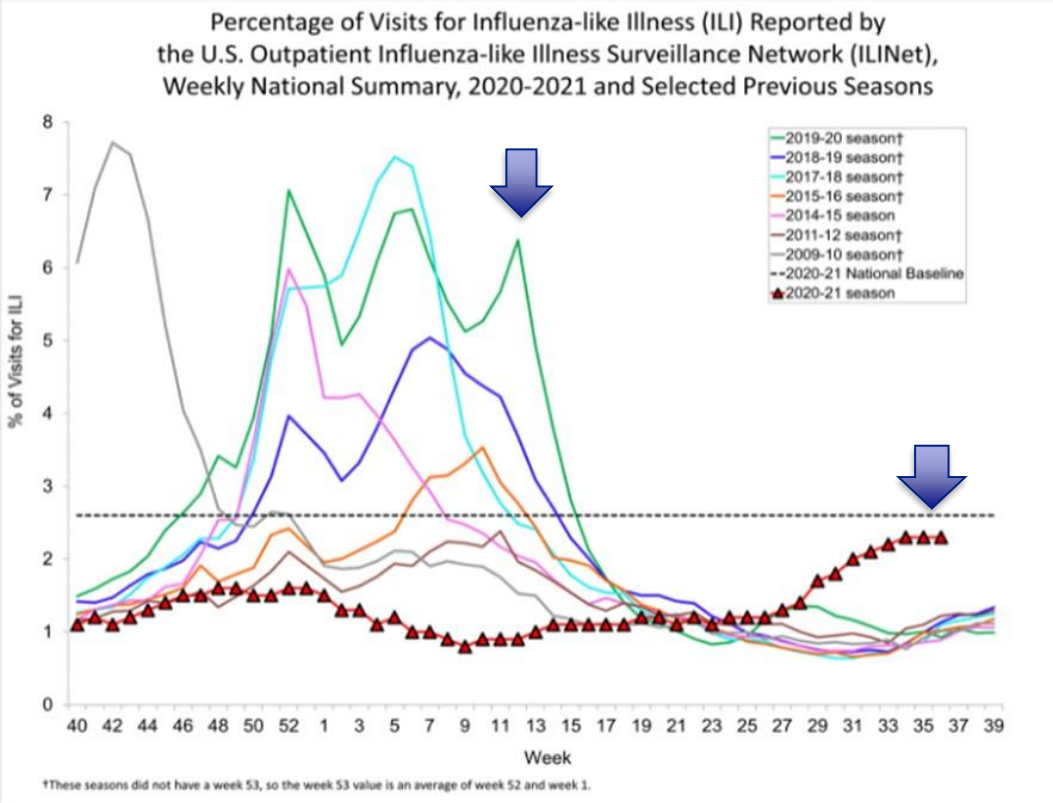
ates the recommendations of the American Academy
routine use of influenza vaccine and antiviral
prevention and treatment of influenza in children
22 influenza season. A detailed review of the
these recommendations is published in the
nical report.[1] The American Academy of Pediatrics
influenza immunization of all children without
ations, starting at 6 months of age. Influenza
portant intervention to protect vulnerable
duce the burden of respiratory illnesses during
acute respiratory syndrome coronavirus 2, which
nue during the 2021–2022 influenza season. Any
ded, age-appropriate vaccine available can be

American Academy of Pediatrics, Itasca, Illinois

Policy Statement and Technical Report

Publication:
October issue of Pediatrics
Pediatrics. 2021

2019-2021 Influenza Seasons



https://www.cdc.gov/flu/weekly/

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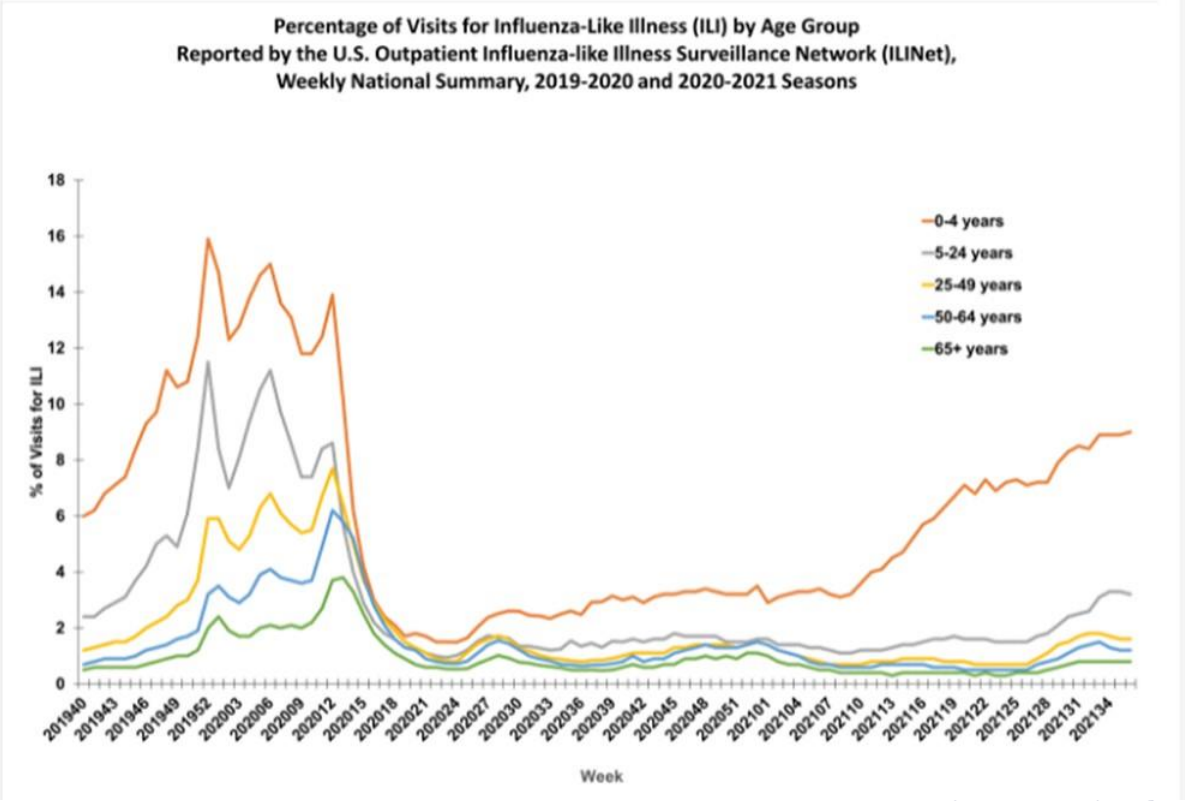
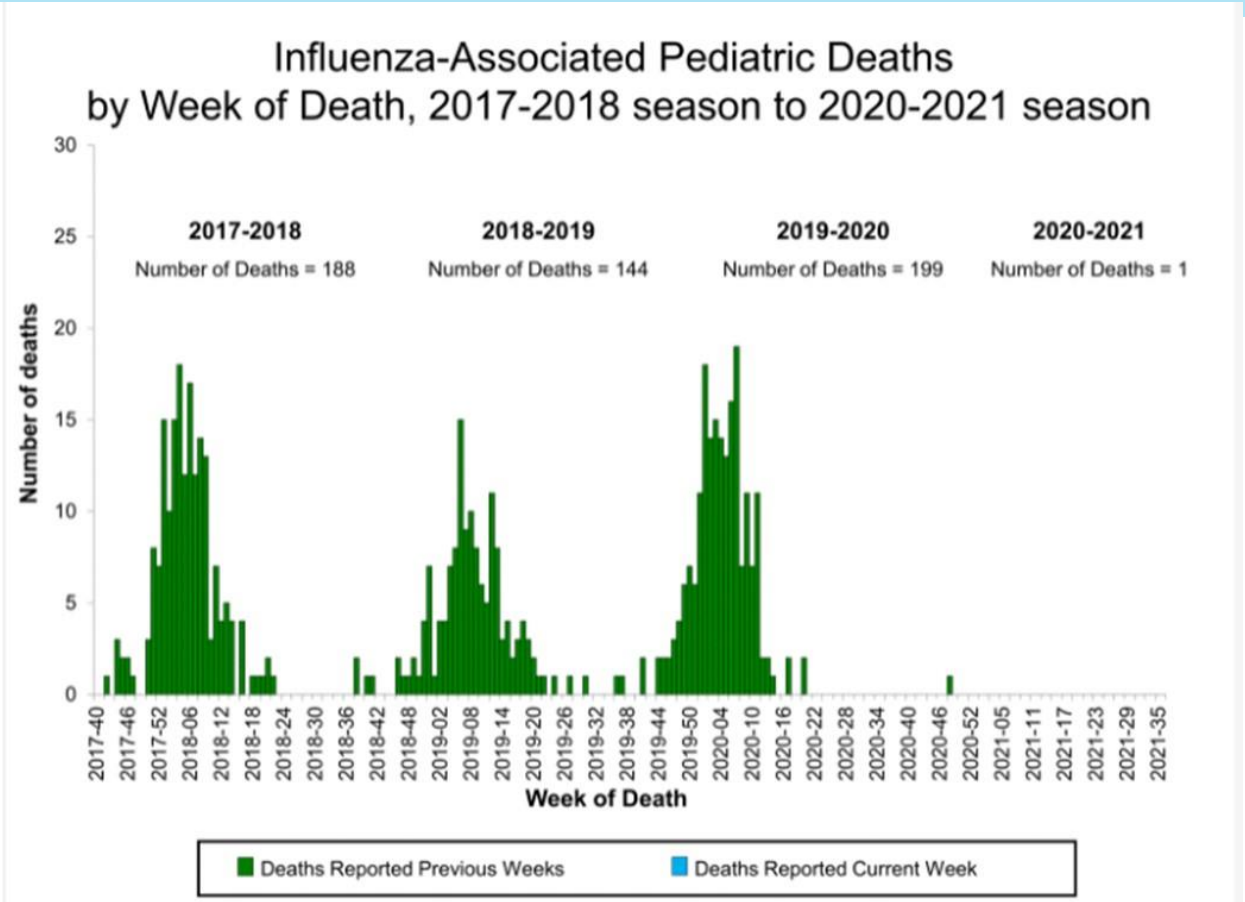
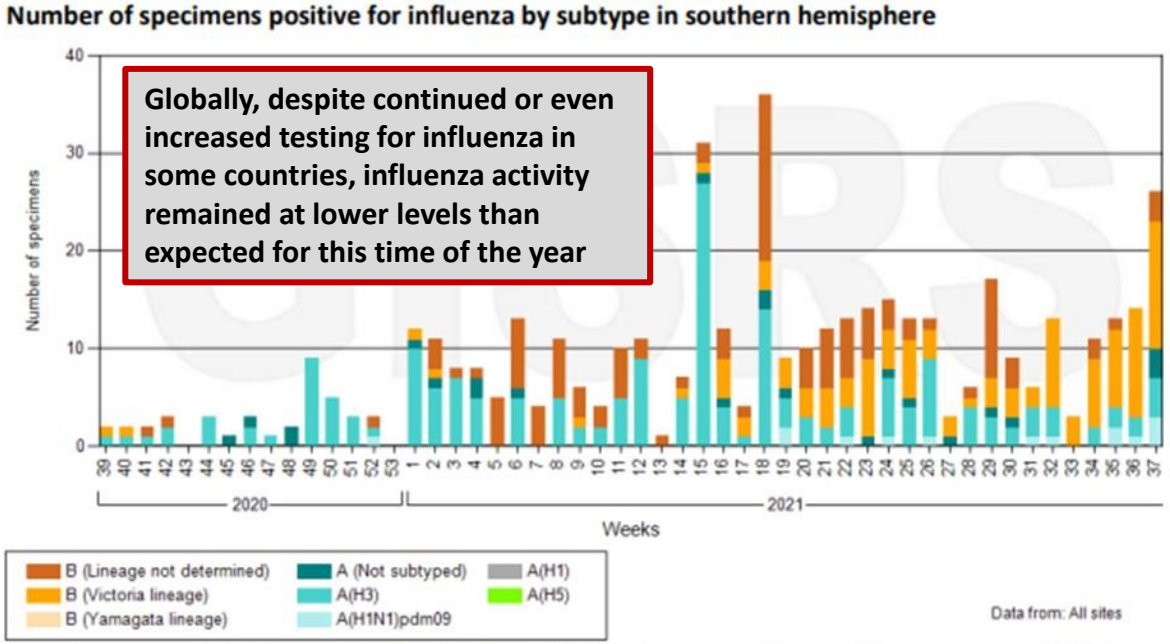
2019-2021 Influenza Seasons



https://www.cdc.gov/flu/weekly/

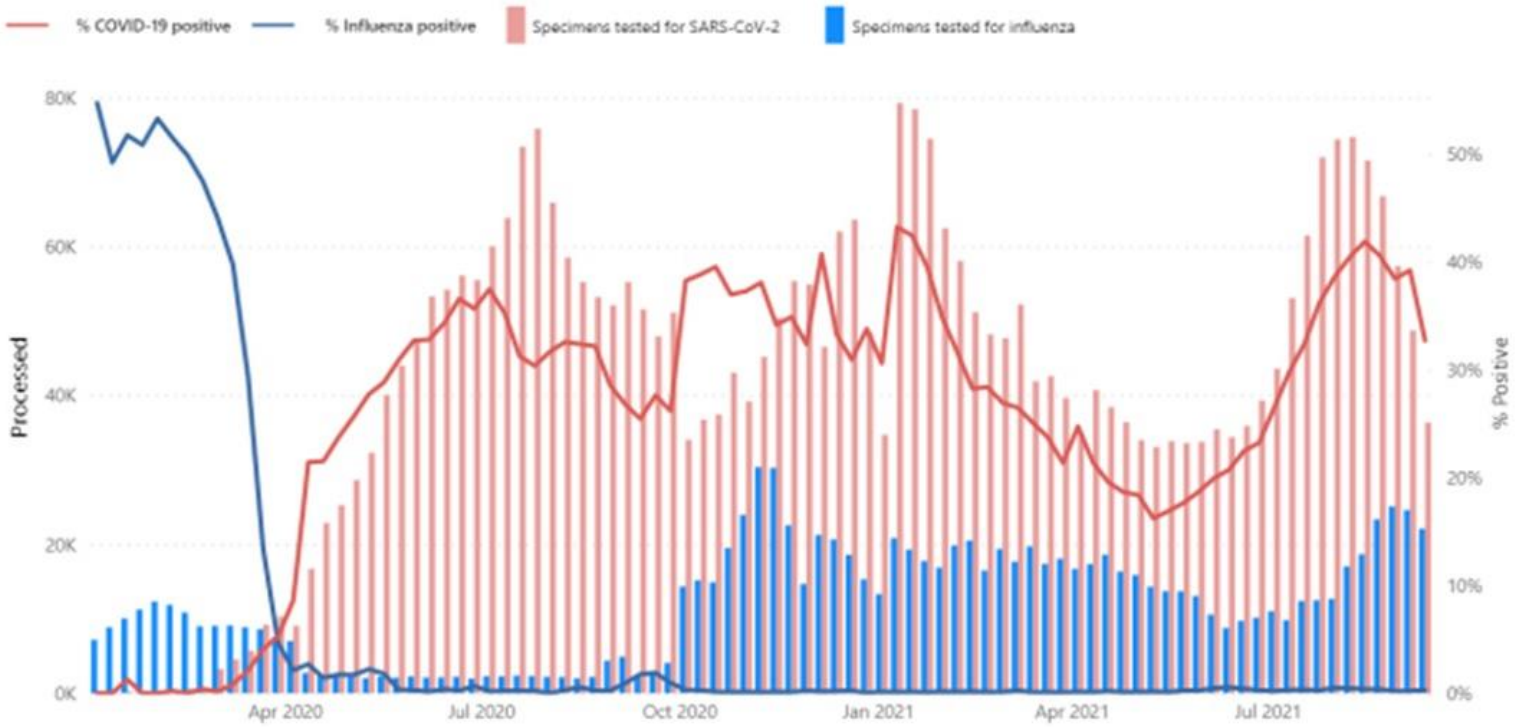

Influenza-Associated Pediatric Deaths
by Week of Death, 2017-2018 season to 2020-2021 season
2017-2018
Number of Deaths = 188
2018-2019
Number of Deaths = 144
2019-2020
Number of Deaths = 199
2020-2021
Number of Deaths = 1
Number of deaths
Week of Death
Deaths Reported Previous Weeks
Deaths Reported Current Week

Effect of SARS-CoV-2 on Flu Season: Southern Hemisphere



Data source: FluNet (www.who.int/toolkits/flunet). Global Influenza Surveillance and Response System (GISRS)
Data generated on 24/09/2021

Influenza and SARS-CoV-2 virus detections from sentinel surveillance reported to FluNet globally



Data source: FluNet (www.who.int/toolkits/flunet). Global Influenza Surveillance and Response System (GISRS)
Data generated on 24/09/2021

FLU AND COVID-19

- It is likely that flu viruses and the virus that causes COVID-19 will both be spreading this fall and winter.
- It is possible to have flu and COVID-19 at the same time.
- Because some of the symptoms of flu and COVID-19 are similar, it may be difficult to tell the difference between them based on symptoms alone and testing may be needed to help confirm a diagnosis.

CDC. Frequently Asked Influenza (Flu) Questions: 2020-2021 Season. Updated August 7, 2020. Accessed 8/10/2020.

DISTINGUISHING INFLUENZA FROM COVID-19

	INFLUENZA	COVID-19
Transmission routes	Droplets > surfaces >> airborne	Droplets > surfaces >> airborne
Incubation period	1-4 days (average 2 days)	2-14 days (average 5 days)
Contagiousness and infectious period	1 day before symptoms, most contagious 3-4 days into illness, lasts average of 7 days, longer in younger children	2 days before symptoms and for 10 days afterwards
Clinical presentation	Fever, cough, rhinorrhea, muscle aches, nasal congestion, headache, loss of appetite, shortness of breath, abdominal pain, diarrhea, vomiting	Fever, cough, rhinorrhea, muscle aches, nasal congestion, headache, loss of appetite, shortness of breath, abdominal pain, diarrhea, vomiting loss of taste and smell
Complications	Secondary bacterial pneumonia, respiratory failure myositis, myocarditis, neurologic complications, Reye syndrome, Exacerbation of underlying illness	Respiratory failure, coagulopathy, acute cardiac injury, acute kidney injury, multi-organ failure, neurologic complications, bacterial coinfection less common, MIS-C, (DKA, intussusception)

Source: Ref 5

Impact of Influenza in Children

✓ *10-40% of healthy children can be infected with influenza each year.*

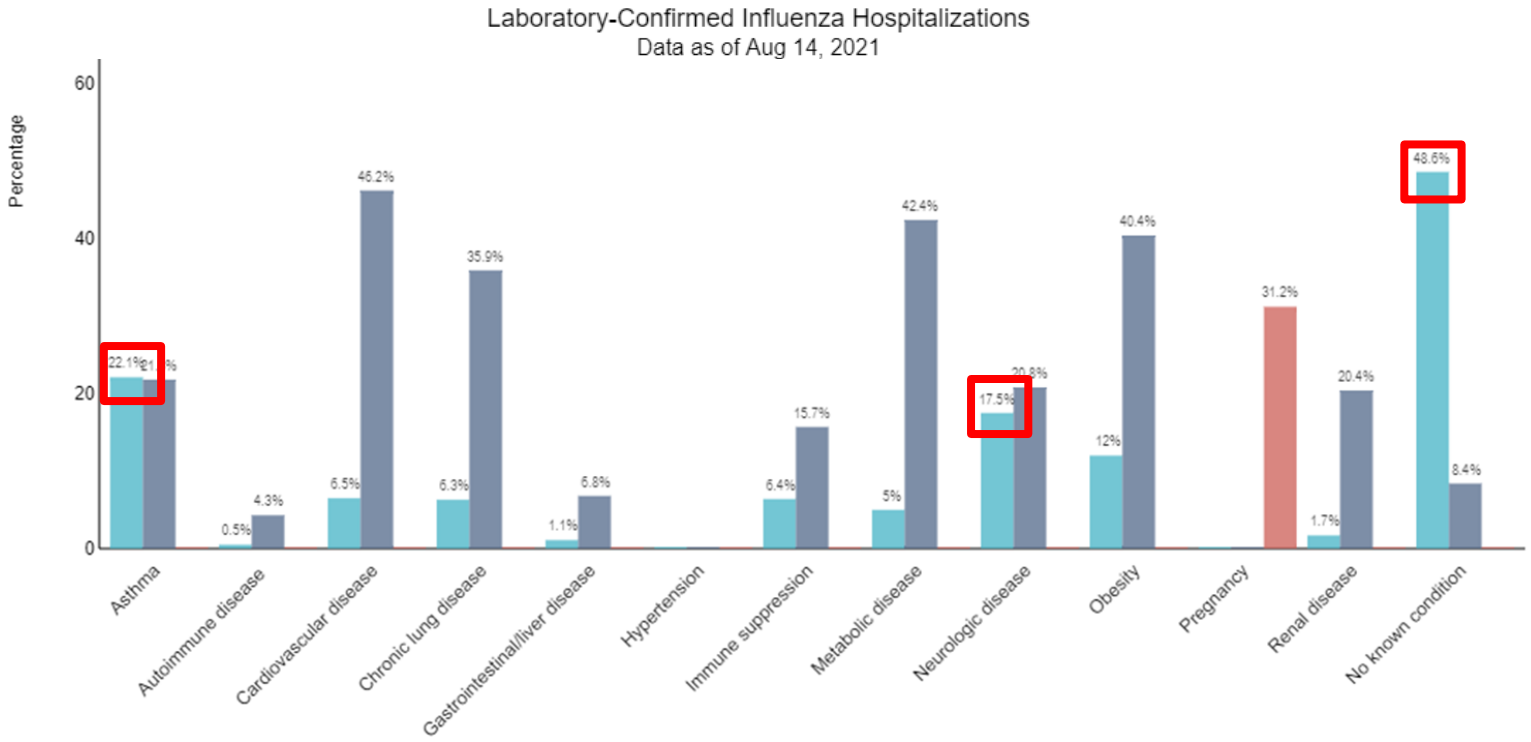
During the influenza season, children:

- Have the highest attack rates, particularly school-aged children
- Play a crucial role in influenza transmission
- Experience elevated morbidity and complications
- Are at increased risk of hospitalization (< 5 yr)
- Have a higher chance of seeking influenza-related medical care

Similar risk factors for COVID-19 and Influenza Complications

- **Primary or acquired immune deficiency**
  - Bone marrow or solid organ transplant recipient, GVHD, chemotherapy for a malignancy (active or within the previous 6 months), HIV with CD4 <30% for ≤12 months old; <25% for 12–35 months; <20% for 36–59 months; or <350 for all other ages; receiving immunosuppressive or immunomodulatory treatments (e.g., high-dose steroids [≥2 mg/kg/day of systemic prednisone or equivalent for ≥14 days]
- **Cardiac disease**
  - Particularly if hemodynamically significant (eg congenital heart disease, heart failure, etc.)
- **Chronic lung disease** (e.g., asthma, cystic fibrosis, bronchiectasis, chronic lung disease of prematurity, tracheostomy / ventilator dependency, restrictive lung disease, neuromuscular disease...)
- **Chronic kidney disease** (e.g., ESRD, dialysis, etc.)
- **Obesity** (BMI > 30 or age based)
- **Type 2 diabetes mellitus**
- **Sickle cell disease**
- **Children < 1 year of age**

Pediatric Influenza Hospitalizations



High Priority Groups for Vaccination

- **Children <5 and especially those < 2 years, regardless of underlying medical conditions.**
- Women who are pregnant or postpartum during influenza season
- People < 19 years old who are receiving long-term aspirin therapy or taking salicylate-containing medications.
- American Indian/Alaska Native people
- People who are morbidly obese

Those with underlying medical conditions

- Chronic pulmonary diseases, including asthma and cystic fibrosis
- Hemodynamically significant cardiac disease
- Chronic renal dysfunction or hepatic disorders
- Sickle cell anemia or other hemoglobinopathies
- Chronic metabolic disorders (including diabetes mellitus)
- Immunosuppression attributable to any cause
- Neurologic and neurodevelopmental conditions
- Compromised respiratory function or handling of secretions

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Source Ref 1-2

Flu and COVID-19: Testing

- Testing for both influenza and COVID-19 is appropriate during the respiratory virus season for **patients with symptoms**.
- Testing for COVID is also recommended for:
  - Close contact with a person with confirmed COVID-19 infection.
  - Screening for elective surgery, admission, etc. (based on local policies).
- **PCR testing** is recommended for diagnosis of both flu and COVID.
- Various PCR tests are available, including tests for influenza A and B and SARS-CoV-2.
- Be aware of your local epidemiology for both viruses.

https://services.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/covid-19-testing-guidance/

Annual AAP Influenza Vaccine Recommendations

- **AAP recommends annual influenza vaccination for all children 6 months of age and older and adults.**
- For the 2021-2022 season any licensed influenza vaccine appropriate by age and health status can be used for influenza vaccination in children.
- The AAP does not have a preference for any influenza vaccine product over another for children with no contraindications to influenza vaccination and for whom more than one licensed, aged appropriate product is available.

Updates For the 2021-2022 Influenza Season

- Composition of influenza vaccine
- All influenza vaccines are quadrivalent (2A/2B)
- New formulations available for children
- No change in dosing recommendations/egg allergy guidance
- The importance of influenza vaccination during the SARS-CoV-2 pandemic is emphasized
- Co-administration with COVID-19 vaccines is allowed
- No issues with influenza vaccine supply are anticipated

Vaccine Virus Strains for 2021-2022

New

Influenza A Vaccine Strains

Egg-based vaccines

- A/Victoria/2570/2019 (**H1N1**) pdm09-like virus
- A/Cambodia/e0826360/2020 (**H3N2**)-like virus

Cell/recombinant vaccines

- A/Wisconsin/588/2019 (**H1N1**) pdm09-like virus
- A/Cambodia/e0826360/2020 (**H3N2**)-like virus

Influenza B Vaccine Strains

*Same for all IIV4 vaccines

- B/Washington/02/2019-like virus (B/Victoria/2/87 lineage)

  (unchanged from 2020-2021)
- B/Phuket/3073/2013-like virus (B/Yamagata lineage)

  (unchanged from 2020-2021)

2021-2022 Influenza Vaccines

✓ **All 2021-2022 influenza vaccines are quadrivalent**

*All include two A and two B influenza viruses

CDC Abbreviations	
IIV4	Inactivated influenza vaccine
LAIV4	Live attenuated influenza vaccine
ccIIV4	Cell culture vaccine

Administration

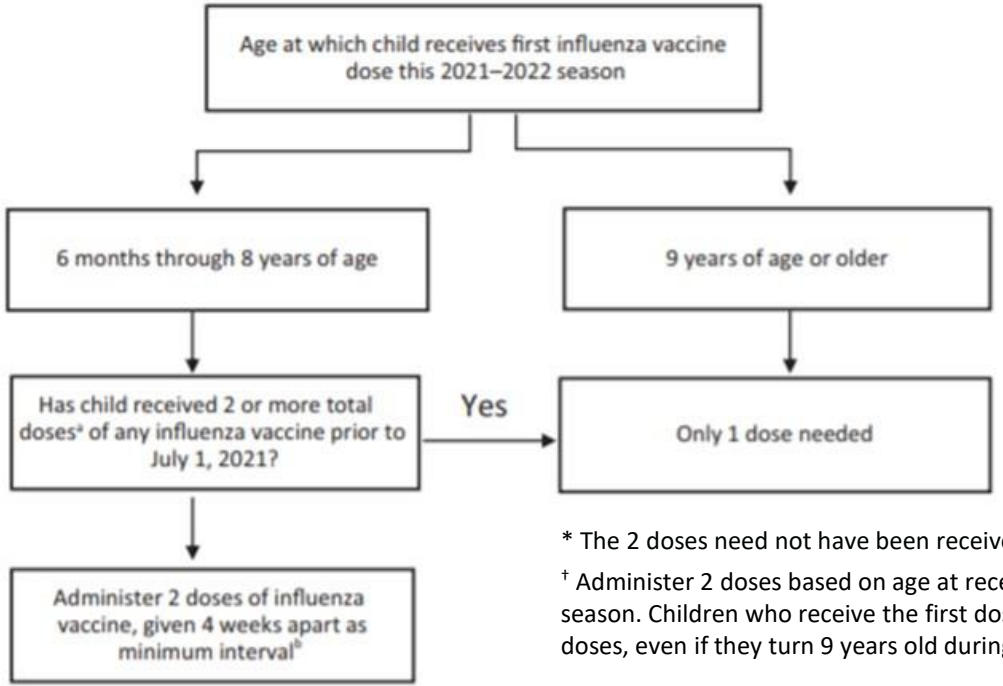
- Pediatric influenza vaccines do not contain adjuvants
- Single-dose, preservative-free, prefilled syringes
- Intramuscular: IIV4 (≥ 6 months), ccIIV4 (≥2 years)
- Intranasal: Live-attenuated influenza vaccine (LAIV4) (≥ 2 years)

PEDIATRIC VACCINES 2021-2022

AA/BB

Vaccine	Presentation	Indication	Antigen content
IIV4 Egg based			
Afluria (Seqirus)	0.25 ml PFS 0.5 ml PFS 5 ml MDV	6-35 mo ≥ 36 mo ≥ 6 mo	7.5 ug/0.25 ml 15 ug/0.5 ml
Fluarix (GSK)	0.5 ml PFS	≥ 6 mo	15 ug/0.5 ml
FluLaval (GSK)	0.5 ml PFS	≥ 6 mo	15 ug/0.5 ml
Fluzone (Sanofi Pasteur)	0.5 ml PFS 0.5 ml SDV 5 ml MDV	≥ 6 mo ≥ 6 mo ≥ 6 mo	15 ug/0.5 ml
ccIIV4 Cell culture based			
Flucelvax (Seqirus)	0.5 ml PFS 5 ml MDV	≥ 2 yr ≥ 2 yr	15 ug/0.5 ml
LAIV4 - Live attenuated influenza vaccine – Egg based			
FluMist (AztraZeneca)	0.2 ml PF Sprayer	≥ 2 yr	$10^{6.5\text{-}7.5}$ fluorescent focus units

Number of 2021–2022 Seasonal Influenza Vaccine Doses for Children



GOAL: COMPLETE IMMUNIZATION BY END OF OCTOBER

* The 2 doses need not have been received during the same season or consecutive seasons.

† Administer 2 doses based on age at receipt of the first dose of influenza vaccine during the season. Children who receive the first dose prior to their ninth birthday should receive 2 doses, even if they turn 9 years old during the same season.

Co-Administration of Influenza and COVID-19 Vaccines

✓ **Influenza vaccination is particularly important during the COVID-19 pandemic.**

- Influenza vaccine may be administered **simultaneously with or anytime before or after** administration of the currently available COVID-19 vaccines.
- Given that it is unknown whether reactogenicity of COVID-19 vaccines will be increased with coadministration of influenza vaccine, **the reactogenicity profile of the vaccines should be considered.**
- If multiple vaccines are administered at a single visit, administer each injection in a different injection site.
- Children with **acute, moderate, or severe COVID-19 should not receive influenza vaccine** until they have recovered; **children with mild illness may be vaccinated**.
- Consult with the most current ACIP/AAP guidance regarding co-administration of COVID-19 vaccines with influenza vaccines.

Source: Ref 11

Egg Allergy and Flu Vaccines

- Egg allergy **does not increase risk** of anaphylactic reaction to vaccination with inactivated influenza vaccines.*
- Children with egg allergies can receive any licensed, recommended vaccine that is age appropriate, with **no special precautions than those recommended for other routine vaccines**.
- Routine prevaccination questions regarding anaphylaxis after receipt of any vaccine are appropriate.
- Children with a history of allergic reaction to previous influenza vaccination:
  - Should be evaluated by allergist to determine if influenza vaccination could be administered
  - Vaccine administration should be supervised by a health care provider who is able to recognize and manage allergic conditions.

*Based on 28 studies evaluating 4,315 egg-allergic subjects (656 with severe allergies)

IIV Contraindications and Precautions

Who should not be vaccinated with IIV?

- Infants younger than 6 months.
- Children with moderate to severe acute illness.
- People with a history of known anaphylactic reaction to any previous influenza vaccine dose or to any of the vaccine components.
- Guillain-Barre Syndrome (GBS) within 6 weeks following a previous dose of influenza vaccine.

What are common side effects?

- Local injection site pain, redness and swelling
- Mild systemic symptoms

- Drowsiness
- Irritability
- Loss of appetite
- Fatigue

LAIV Contraindications and Precautions

Who should not be vaccinated with LAIV?

- People with a history of known anaphylactic reaction to any previous influenza vaccine dose or to any of the vaccine components.
- Children younger than 2 years – persons older than 49 years; age 2-4 with asthma or h/o wheezing
- Children with underlying medical conditions including immune suppression, asplenia, pregnancy, cochlear implant – CSF leak, aspirin or salicylate treatment, metabolic disease, diabetes, cardiac/pulmonary/renal/hemoglobinopathies
- Asthma and age > 5 yr
- Children with moderate to severe acute illness
- Nasal congestion/active URI
- Guillain-Barre Syndrome (GBS) within 6 weeks following a previous dose of influenza vaccine

What are common side effects?

- Rhinorrhea, congestion, sore throat
- Mild systemic symptoms
- Drowsiness
- Irritability
- Loss of appetite
- Fatigue

AAP SUPPORTS MANDATORY ANNUAL INFLUENZA VACCINATION FOR ALL HCP, INCLUDING IN OUTPATIENT SETTINGS.

Health Care Personnel Immunization

- This includes requiring annual influenza vaccination as a condition of employment, allowing exemptions only for medical contraindications.

- Some states or jurisdictions may require the option of religious or other non-medical exemptions to mandatory HCP influenza vaccination; in such cases, non-medical exemptions should be addressed on a case-by-case basis and there should be a clear institutional policy for management of employees who are exempted from immunization (e.g., mask requirements or reassignment of duties during influenza season).

AAP Recommendations for Treatment of Influenza in Children

- Does not require laboratory confirmation
- **Offer antiviral treatment *** to children:
  - Hospitalized for suspected or confirmed influenza illness
  - Hospitalized with severe, complicated, or progressive illness attributable to influenza
  - At high risk for complications of influenza with suspected or confirmed influenza of any severity
- **Consider treatment**
  - In any healthy child with suspected or confirmed influenza when treatment can be administered within 48 hrs of onset of symptoms
  - Healthy children with suspected or confirmed influenza who live with high risk persons at home

* Regardless of duration of symptoms

Antivirals for Influenza

Drug (Trade Name)	Virus	Route	Treatment [a,b]	Chemopro-phylaxis [d]	Adverse Effects
Oseltamivir (Tamiflu)	A and B	PO – 5 days	Birth or older[c]	≥ 3 mo	Nausea, vomiting
Zanamivir (Relenza)	A and B	Inhalation – 5 days	≥ 7 y	≥ 5 y	Bronchospasm
Peramivir (Rapivab)	A and B	IV – single dose	≥ 2 y	NA	Diarrhea; some reports of skin reactions. Neuropsychiatric events
Baloxavir (Zofluxa)	A and B	PO – single dose	≥ 12 yr and > 40 Kg	> 12 yr and > 40 Kg	Resistance

a. Treatment within 48 hr of onset of illness has greatest effect in reduction of symptoms and duration of illness
b. No antiviral is specifically approved for severe influenza, but observational studies support effect on reduction of complications, and most experts support use
c. FDA approved for children 2 wk of age and older but AAP supports use from birth in term and preterm infants
d. Chemoprophylaxis: High risk children who cannot get vaccinated or may not respond to vaccine; within 2 weeks after vaccination if circulation of influenza, contacts of HR patients, control of outbreaks

2021-2022 Influenza Vaccine Administration: Considerations during the Pandemic

- Vaccination in the medical home is ideal
- Routine care, COVID-19 vaccination, routine immunizations, and catch up vaccinations in addition to influenza vaccination!
- Maintain infection prevention measures: screening for symptoms, physical distancing, respiratory and hand hygiene.
- AAP recommends following the CDC Interim Guidance for Immunization Services During the COVID-19 Pandemic.
  - IIV: Surgical face mask + eye protection
  - LAIV: Surgical face mask + eye protection + gloves
- The AAP has the following video on PPE guidance during vaccinations.

CDC. Frequently Asked Influenza (Flu) Questions: 2020-2021 Season. Updated August 7, 2020. Accessed 8/10/2020.

Planning for Fall 2021 Influenza Vaccination

- Interest from patients in flu vaccination may be higher this season.
- Plan for communication with patients around:
  - Importance of influenza vaccination
  - Ability to vaccinate safely in the office setting
  - Messaging regarding possible co-circulation of SARS-CoV-2 and other respiratory viruses along with influenza
- Innovative vaccination strategies
  - Adapting to current infection prevention practices while ensuring timely vaccination (drive through vaccination, mobile units, vaccine appointments and outreach, etc)

Summary 1

- Co-circulation of influenza viruses and SARS-CoV-2 is expected this winter.
- Influenza and COVID-19 may be clinically similar and affect similar pediatric populations who are at risk for complications.
- Testing for influenza and SARS-CoV-2 is recommended in symptomatic patients and high-risk patients.
- Flu vaccination and treatment will help reduce the overall impact of respiratory illnesses on the population and thus lessen the resulting burden on the healthcare system during the COVID-19 pandemic.

SUMMARY 2

- **Immunization is the most effective public health strategy to prevent influenza and its complications, and it is particularly important during the COVID-19 pandemic.**
- All persons 6 months of age and older should receive influenza vaccine.
  - Vaccination is especially important for persons at high risk of influenza complications.
  - Egg allergy is not a contraindication for influenza vaccination.
- Whether a child 6 months through 8 years of age needs one or two doses of influenza vaccine this season depends on previous influenza vaccine history (see algorithm).
- Any licensed, age-appropriate influenza vaccine can be used, without preference.
- The recommended IIV dose for children ≥ 6 months to 35 months is is 0.5ml except when using Afluria.
- Influenza vaccine may be co-administered with COVID-19 vaccines.

RESOURCES

- AAP Influenza https://www.aap.org/en/patient-care/influenza/
- Preparing for the Flu Season https://www.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/help-for-pediatricians/preparing-for-flu-season/
- AAP Red Book Influenza https://redbook.solutions.aap.org/chapter.aspx?sectionid=247326861&bookid=2591
- AAP Immunizations https://www.aap.org/en/patient-care/immunizations/
- AAP Critical Updates on COVID https://www.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/
- Email: covid-19@aap.org

TOOLKITS

- CDC Fight Flu Toolkit

https://www.cdc.gov/flu/professionals/vaccination/prepare-practice-tools.htm?web=1&wdLOR=c26A0C649-03D8-45D0-A359-05F3FEFB0601

- AAP Immunizations Campaign Toolkit

https://www.aap.org/en/news-room/campaigns-and-toolkits/immunizations/

- AAP Flu Campaign Toolkit

https://www.aap.org/en/news-room/campaigns-and-toolkits/flu-campaign-toolkit/

To Ask a Question

- Using the Zoom Webinar System
  - Click on the “Q&A” button
  - Type your question in the “Q&A” box
  - Submit your question

- If you are a patient, please refer your question to your healthcare provider.

- If you are a member of the media, please direct your questions to CDC Media Relations at 404-639-3286 or email media@cdc.gov.

Continuing Education

- All continuing education for COCA Calls is issued online through the CDC Training & Continuing Education Online system at https://tceols.cdc.gov/.

- Those who participate in today's COCA Call and wish to receive continuing education please complete the online evaluation by **November 8, 2021,** with the course code **WC2922-100721**. The access code is **COCA100721.**

- Those who will participate in the on-demand activity and wish to receive continuing education should complete the online evaluation between **November 9, 2021,** and **November 9, 2023,** and use course code **WD2922-100721**. The access code is **COCA100721.**

- Continuing education certificates can be printed immediately upon completion of your online evaluation. A cumulative transcript of all CDC/ATSDR CEs obtained through the CDC Training & Continuing Education Online System will be maintained for each user.

Today's COCA Call Will Be Available to View On-Demand

- **When:** A few hours after the live call ends
- **What:** Video recording
- **Where:** On the COCA Call webpage
  https://emergency.cdc.gov/coca/calls/2021/callinfo_100721.asp

Additional COVID-19 Resources

- Subscribe to receive notifications about upcoming COCA calls and other COCA products and services at emergency.cdc.gov/coca/subscribe.asp.
- Share call announcements with colleagues.
- Sign up to receive weekly ***COVID-19 Science Updates*** by visiting cdc.gov/library/covid19/scienceupdates.html?Sort=Date%3A%3Adesc.

COCA Products & Services

COCA Call Announcements contain all information subscribers need to participate in COCA Calls. COCA Calls are held as needed.

Monthly newsletter that provides information on CDC training opportunities, conference and training resources, the COCA Partner Spotlight, and the Clinician Corner.

As-needed messages that provide specific, immediate action clinicians should take. Contains comprehensive CDC guidance so clinicians can easily follow recommended actions.

COCA Products & Services

Monthly newsletter providing updates on emergency preparedness and response topics, emerging public health threat literature, resources for health professionals, and additional information important during public health emergencies and disasters.

Informs clinicians of new CDC resources and guidance related to emergency preparedness and response. This email is sent as soon as possible after CDC publishes new content.

CDC's primary method of sharing information about urgent public health incidents with public information officers; federal, state, territorial, and local public health practitioners; clinicians; and public health laboratories.

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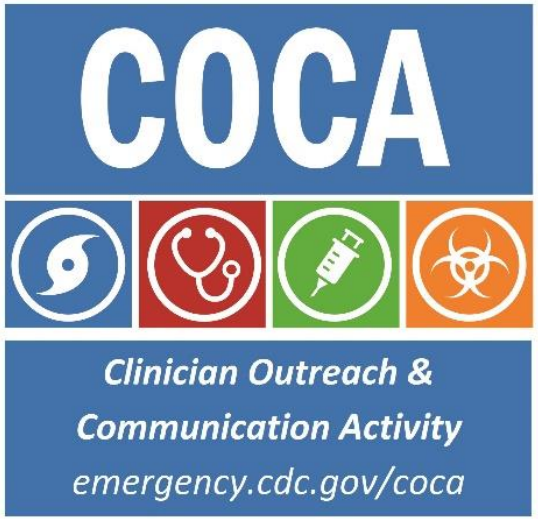

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