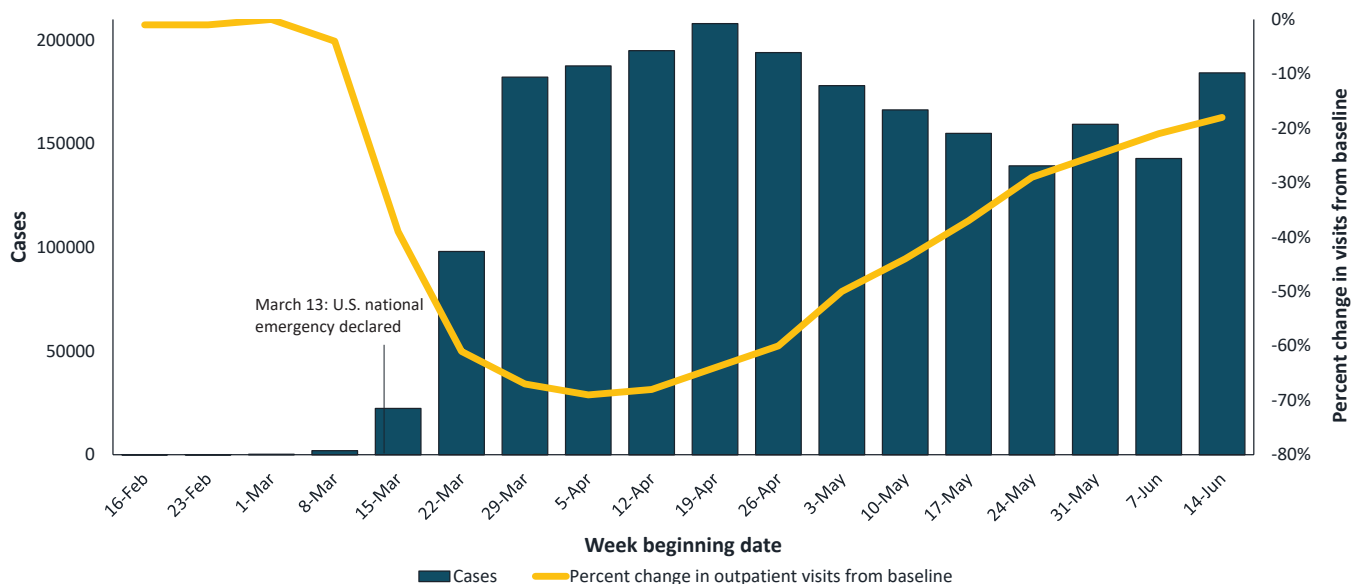


## Maintaining and strengthening routine childhood vaccination during the COVID-19 pandemic

Sarah Mbaeyi, MD MPH  
August 4, 2020

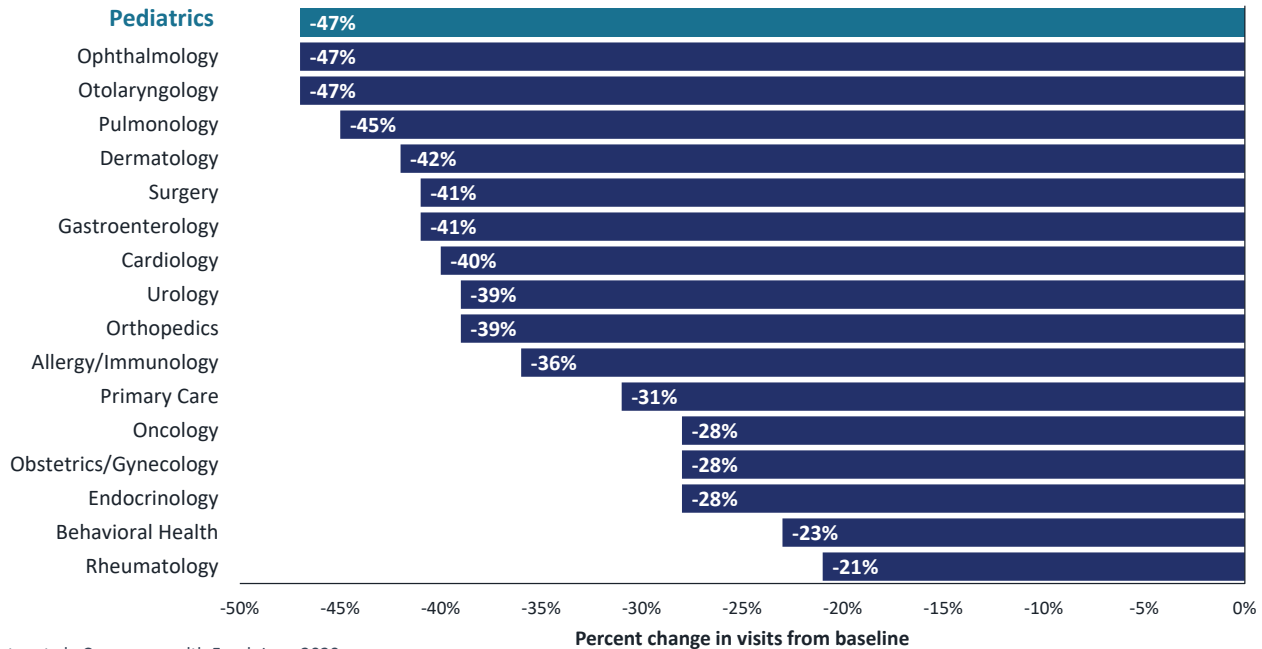
### Substantial disruptions to outpatient medical care during COVID-19 pandemic

As number of COVID-19 cases increased and stay-at-home orders implemented, nearly 70% reduction in outpatient in-person visits before starting to rebound



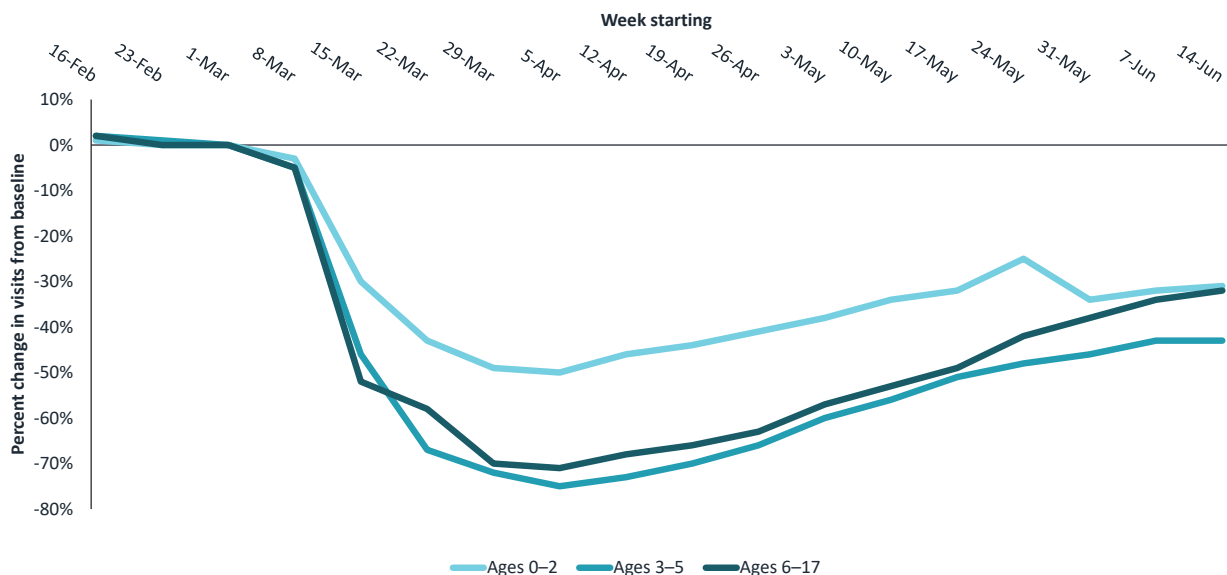
## Pediatrics among the hardest-hit specialties

47% cumulative decline in visits from March 15 to June 20, 2020



3

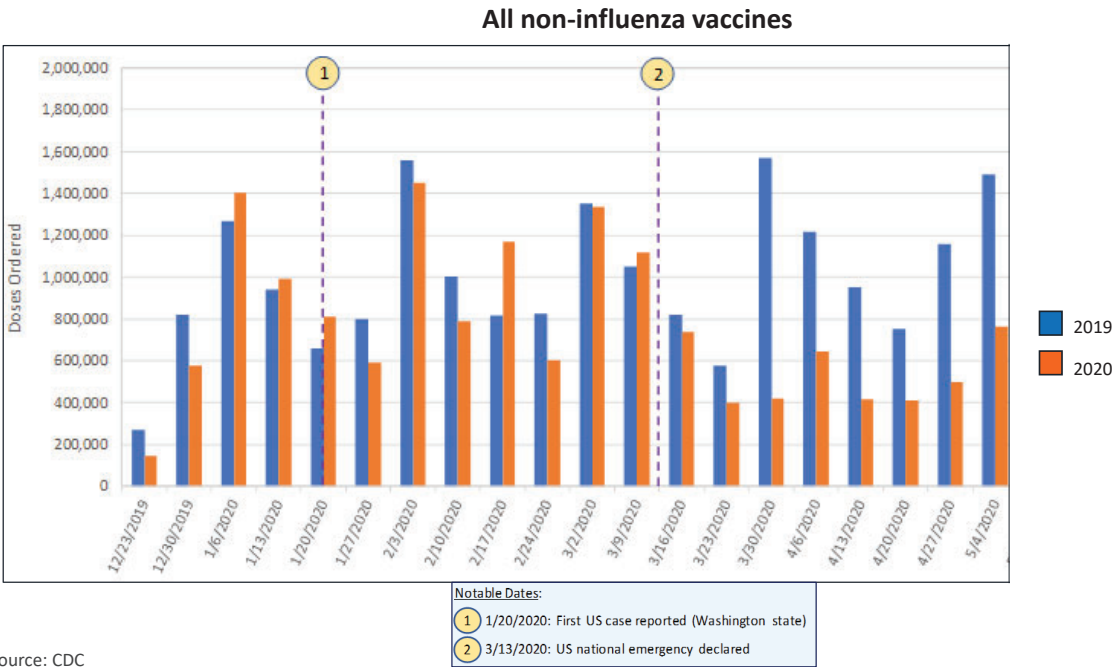
## Disruptions in outpatient medical care among all pediatric age groups during COVID-19 pandemic



4

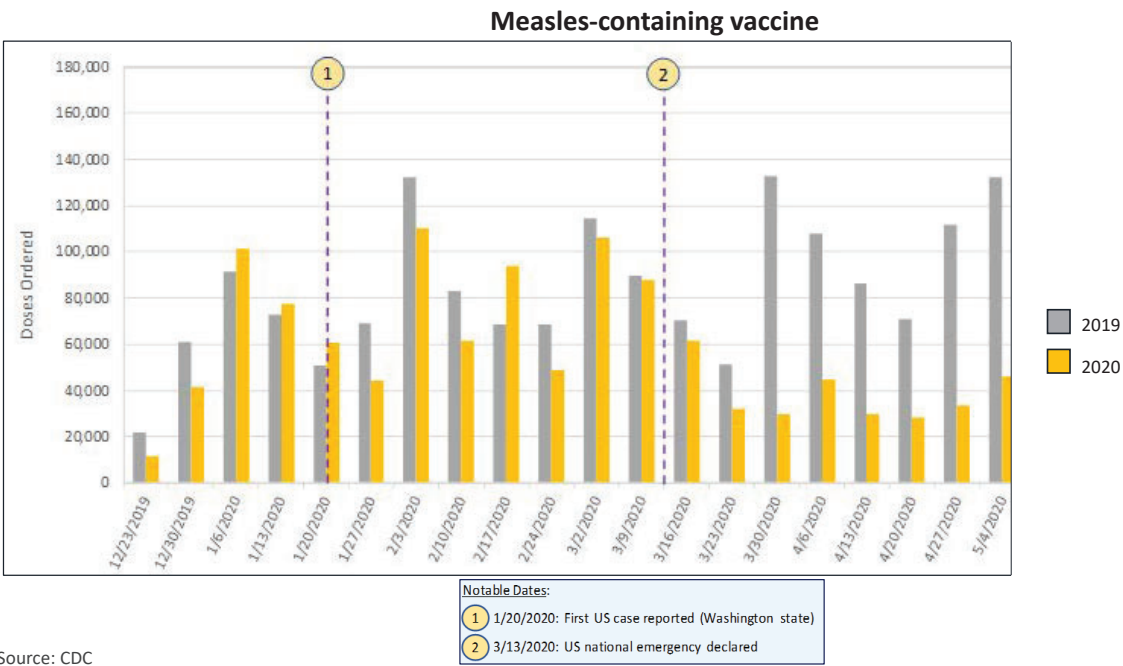
# COVID-19 pandemic and disruptions to routine childhood vaccination

Weekly decreases in Vaccines for Children program provider orders for pediatric vaccines – United States, December 23, 2019-May 10, 2020



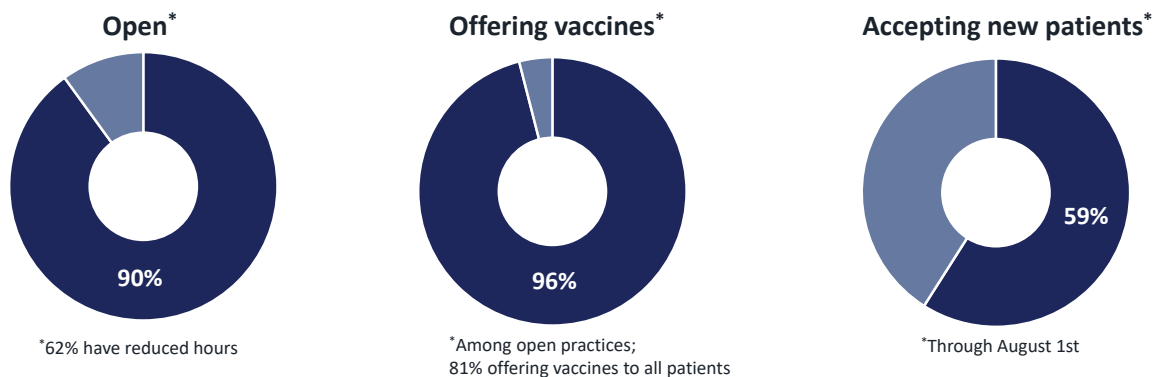
# COVID-19 pandemic and disruptions to routine childhood vaccination

Weekly decreases in Vaccines for Children program provider orders for pediatric vaccines – United States, December 23, 2019-May 10, 2020



## What is the capacity among pediatric providers to administer vaccines?

- Vaccines for Children (VFC) program: provides vaccines at no cost to eligible children; ~38,000 enrolled practices encompass ~86% of U.S. pediatricians
- Among 1,933 VFC-enrolled practices the majority are: currently open, offering vaccines, and able to accept new patients (as of May 20, 2020)



Source: Vogt TM, et al. MMWR Morb Mortal Wkly Rep 2020;69:859–863.

7

## Immunization infrastructure remains strong during COVID-19

### Conclusions from survey of VFC providers

- As of May, 2020, immunization infrastructure sufficient to meet patient needs and ensure catch-up vaccination, though some access issues remain
- Majority of providers will be able to administer vaccines during the critical back-to-school period
- To help ensure routine childhood vaccine services get back on track, efforts needed to support providers and parents

Source: Vogt TM, et al. MMWR Morb Mortal Wkly Rep 2020;69:859–863.

8

## CDC activities with immunization programs and partners to support routine childhood vaccination

- **Monitor** vaccination service delivery to inform targeted interventions
- **Support**
  - Providers through the development of guidance and support materials
  - Immunization awardees in identifying and responding to disruptions in vaccination
  - Catch-up vaccination through reminder/recall systems
  - Access to vaccines by identifying gaps in VFC provider network
  - Identification of policy interventions to support healthcare providers
- **Communicate**
  - Importance of vaccination to parents, providers, and partners
  - Information on VFC program to families
- **Plan** back-to-school vaccination activities during the summer and influenza vaccination in the fall

## CDC Interim Guidance for Immunization Services During the COVID-19 Pandemic

# Routine immunization services remain critical

- Routine vaccination prevents illnesses that lead to increased medical visits and hospitalizations, further straining the healthcare system
- Influenza vaccination will be critical to reduce the impact of respiratory illnesses and resulting burdens on the healthcare system

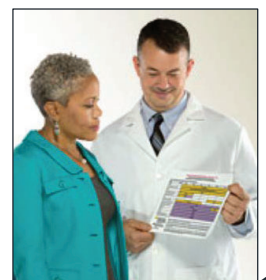


<https://www.cdc.gov/vaccines/pandemic-guidance/index.html>

11

## Routine vaccination across the lifespan

- **Children and adolescents:** Reschedule missed well-child visits and/or vaccinations
  - Start with newborns, infants and children up to aged 24 months, young children, and extending through adolescence
- **Pregnant women:** If vaccination has been delayed, administer vaccines during the next in-person appointment
- **Adults:** Administer all recommended vaccines
  - Especially important in older adults and those with underlying conditions



<https://www.cdc.gov/vaccines/pandemic-guidance/index.html>

12

## Decreasing immunization rates mean it is particularly important to:

- Assess the vaccination status of all patients to avoid missed opportunities and ensure timely vaccination catch-up.
- Administer all vaccines due or overdue according to the recommended [CDC immunization schedules](https://www.cdc.gov/vaccines/pandemic-guidance/index.html) during each visit.

**Child and Adolescent Immunization Schedule (birth through 18 years)**

**Table 1** Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2020

Recommendations may be based on the order that follows. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars.

Vaccine	Birth	1-2 mo	3-4 mo	5-6 mo	7-11 mo	12-15 mo	16-18 mo	19-23 mo	24-35 mo	3-6 yrs	7-10 yrs	11-12 yrs	13-15 yrs	16-18 yrs
Hepatitis B (HBV)	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose
Poliovirus (IPV)	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose
Diphtheria, tetanus, pertussis (DTaP)	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose
Measles, mumps, rubella (MMR)	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose
Varicella (VZV)	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose
Human papillomavirus (HPV)	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose	1 dose

**Adult Immunization Schedule (19 years and older)**

**Table 1** Recommended Adult Immunization Schedule by Age Group, United States, 2020

Vaccine	19-34 years	35-49 years	50-64 years	65 years
Influenza (inactivated [IIV] or influenza recombinant [RIV])	1 dose annually	1 dose annually	1 dose annually	1 dose annually
Tetanus, diphtheria, pertussis (Tdap or Td)	1 dose Tdap, then Td or Tdap booster every 10 years	1 dose Tdap, then Td or Tdap booster every 10 years	1 dose Tdap, then Td or Tdap booster every 10 years	1 dose Tdap, then Td or Tdap booster every 10 years
Measles, mumps, rubella (MMR)	1 or 2 doses depending on indication	1 or 2 doses depending on indication	1 or 2 doses depending on indication	1 or 2 doses depending on indication
Varicella (VZV)	2 doses (if born in 1980 or later)	2 doses (if born in 1980 or later)	2 doses (if born in 1980 or later)	2 doses (if born in 1980 or later)
Zoster recombinant (RZV) preferred	2 doses	2 doses	2 doses	2 doses
Zoster live (ZVL)	1 dose	1 dose	1 dose	1 dose
Human papillomavirus (HPV)	3 or 2 doses depending on age at initial vaccination or completion	27 through 45 years	27 through 45 years	27 through 45 years

<https://www.cdc.gov/vaccines/pandemic-guidance/index.html>

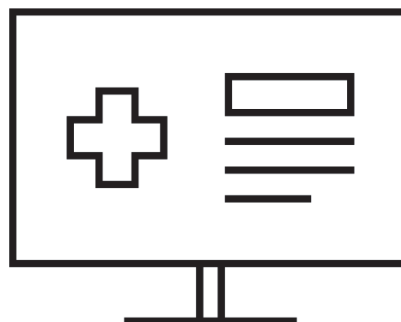
13

## Catch-up vaccination strategies

Reminder/recall systems



Forecasting through EMR or IIS



Standing orders



<https://www.cdc.gov/vaccines/pandemic-guidance/index.html>

14

## Vaccination administration during the COVID-19 pandemic

- Vaccination in the medical home ideal to ensure patients receive other preventive services that may have been deferred
- Regardless of vaccination location, [best practices for storage and handling of vaccines](#) and [vaccine administration](#) should be followed.
- Information on vaccines administered should be documented so that providers have accurate and timely information, and to ensure continuity of care in the setting of COVID-19 related disruptions

## Vaccination of persons with confirmed or suspected COVID-19

- Routine vaccination should be deferred in persons with confirmed or suspected COVID-19, regardless of symptoms





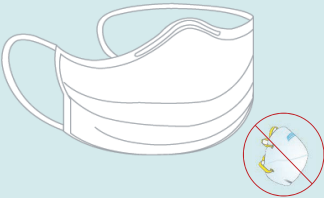
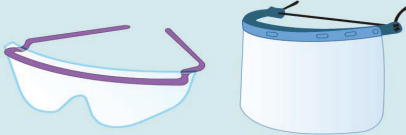
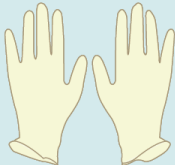
## Follow CDC guidance to prevent the spread of COVID-19 in healthcare settings

- Screen patients for COVID-19 symptoms before and during visit
- Ensure physical distancing (at least 6 feet apart, where possible)
- Limit and monitor facility points of entry and install barriers to limit physical contact with patients at triage
- Implement policies for cloth face masks for persons aged  $\geq 2$  years (if tolerated)
- Ensure adherence to respiratory hygiene, cough etiquette, and hand hygiene
- Enhanced surface decontamination

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html>

17

## Use appropriate personal protective equipment

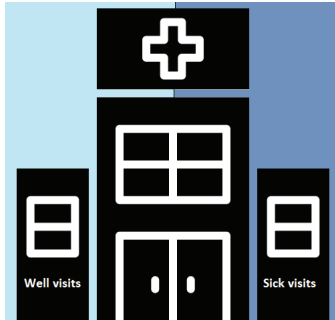
Face mask	Eye protection	Gloves
		
<ul style="list-style-type: none"><li>• <b>Recommended:</b> All healthcare providers (N95 masks not recommended)</li></ul>	<ul style="list-style-type: none"><li>• <b>Recommended:</b> Areas of moderate/substantial community transmission</li><li>• <b>Optional:</b> Areas of minimal/no community transmission</li></ul>	<ul style="list-style-type: none"><li>• <b>Recommended:</b> Intranasal or oral vaccines</li><li>• <b>Optional:</b> Intramuscular or subcutaneous vaccines</li></ul>

<https://www.cdc.gov/vaccines/pandemic-guidance/index.html>; Image credit: Pan American Health Organization

18

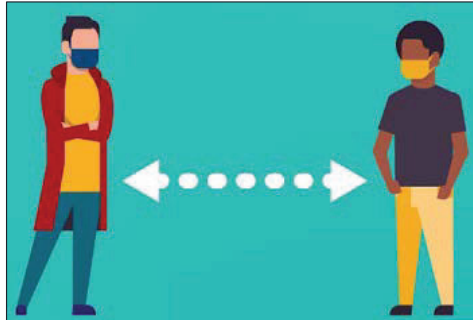
# Ensure physical distancing during vaccination visits

## Separate sick from well patients



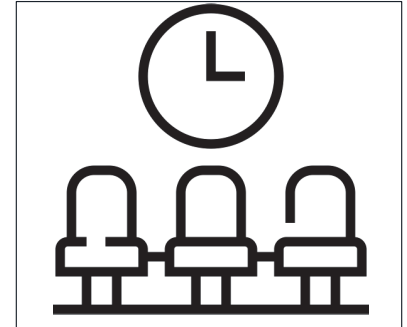
- Schedule well and sick visits at different times of the day
- Place sick visits in different areas of the facility or different locations

## Ensure physical distancing measures



- At least 6 feet during all aspects of visit: check-in, checkout, screening procedures, postvaccination monitoring
- Use strategies such as physical barriers, signs, ropes, floor markings

## Reduce crowding in waiting room



- Ask patients to wait outside (e.g., in their vehicles) until called in

<https://www.cdc.gov/vaccines/pandemic-guidance/index.html>

19

# Reassure parents through communication

- Encourage parents to return for well-child visits
- Discuss the safety protocols put in place to ensure patients can be safely vaccinated



<https://www.cdc.gov/vaccines/pandemic-guidance/index.html>

20

# Promote awareness of vaccines for Children (VFC) program among parents

- Prior to the pandemic, ~50% of U.S. children eligible to receive free vaccines through VFC
  - More may be eligible now due to recent loss insurance
- Parents of recently-eligible children may not be aware of VFC
- Partners and providers can help improve vaccine access by increasing awareness and enrollment in VFC program



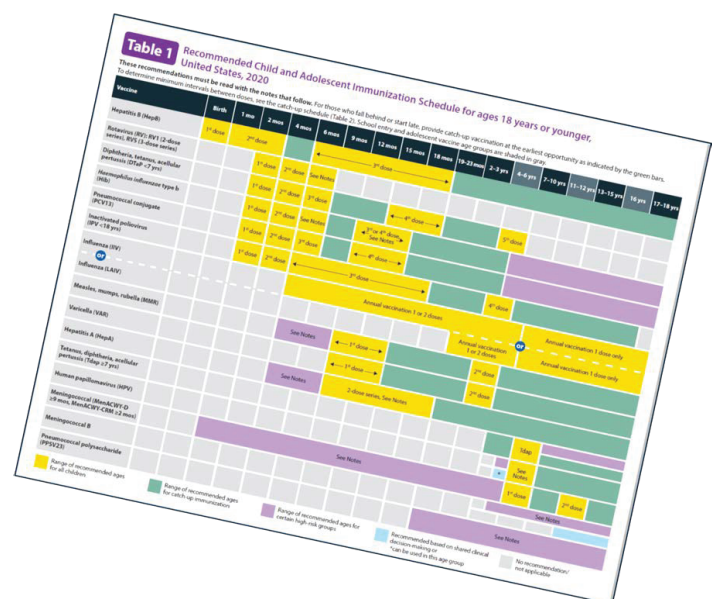
<https://www.cdc.gov/vaccines/programs/vfc/index.html>

21

## Preparing for back-to-school vaccination

School vaccination requirements provide a critical checkpoint for children's vaccination status

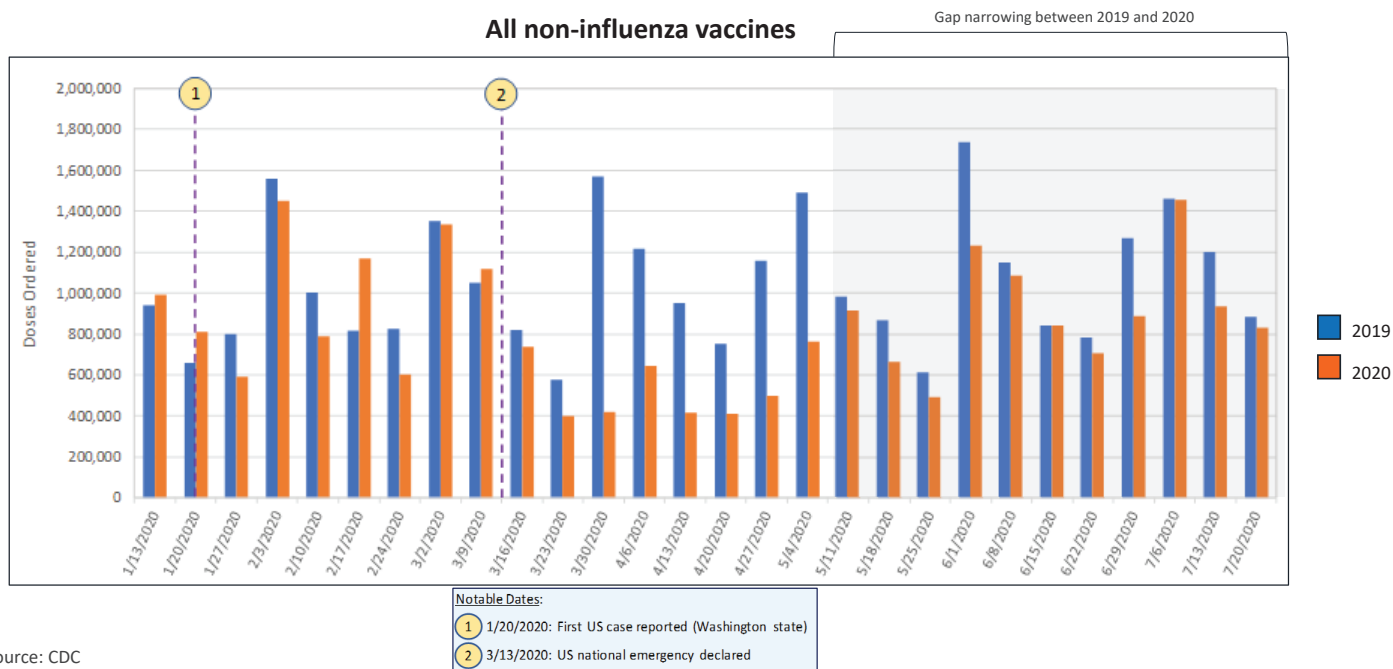
- Many school-age children at risk for undervaccination and non-compliance with school vaccine requirements
- Important to augment back-to-school vaccine clinics to ensure that children have an opportunity for vaccination



22

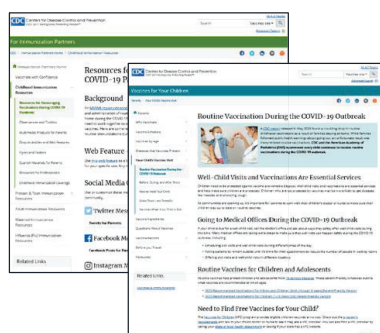
# Signs of recovery in routine childhood vaccination

Weekly Vaccines for Children program provider orders for pediatric vaccines – United States, December 23, 2019-July 27, 2020



23

## Resources for routine vaccination during the COVID-19 pandemic



CDC resources for parents and immunization partners



AAP's #CallYourPediatician campaign

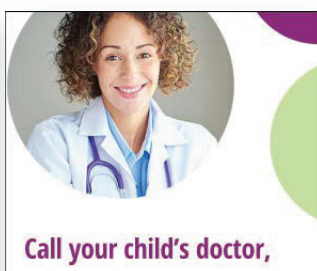


Immunization Action Coalition Repository of Resources

24

## Conclusions

- Substantial disruptions to routine childhood vaccination services has occurred during the COVID-19 pandemic, though signs of recovery have appeared
- Immunization programs, partners, and providers can help get childhood vaccination back on track by supporting catch-up vaccination efforts and communicating with parents about safe vaccination during the pandemic



25

# Thank you

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



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# **Vaccination Planning for the 2020-2021 Influenza Season**

Tara C. Jatlaoui, MD MPH  
Immunization Services Division

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## **2019-2020 Influenza Activity**



# Summary of 2019-2020 influenza season

- Two consecutive waves
  - 1<sup>st</sup> wave predominantly influenza B/Victoria viruses
  - 2<sup>nd</sup> wave driven by influenza A (H1N1)
- Pediatric deaths reported to CDC for the 2019-2020 season: **185\***

## Deaths

24,000-62,000

## Hospitalizations

410,000-740,000

## Medical visits

18,000,000-26,000,000

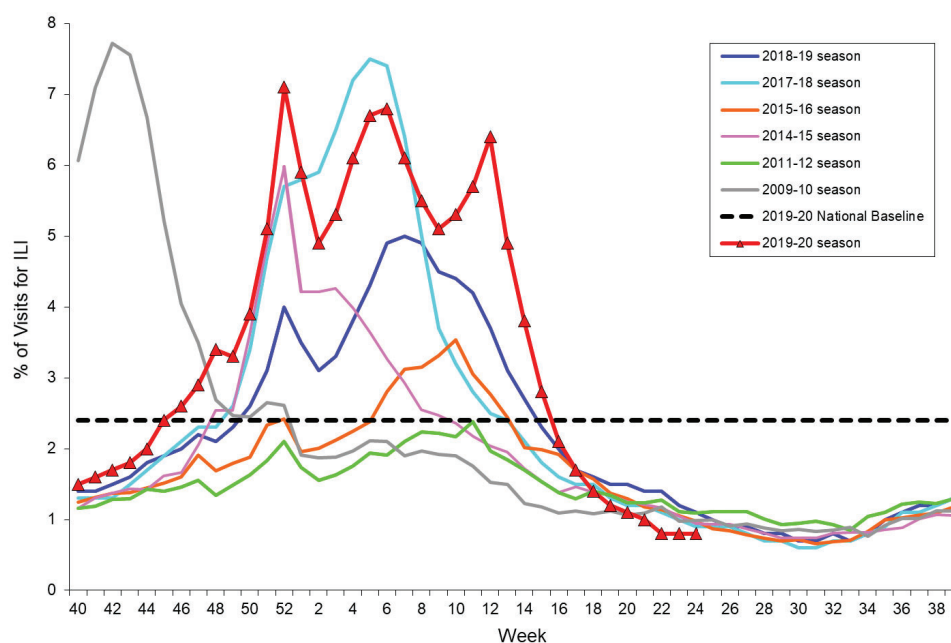
## Illnesses

39,000,000-56,000,000

\*As of June 13, 2020

<https://www.cdc.gov/flu/about/burden/preliminary-in-season-estimates.htm>

## Percentage of Visits for Influenza-like Illness (ILI) Reported by the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Weekly National Summary, 2019-2020 and Selected Previous Seasons



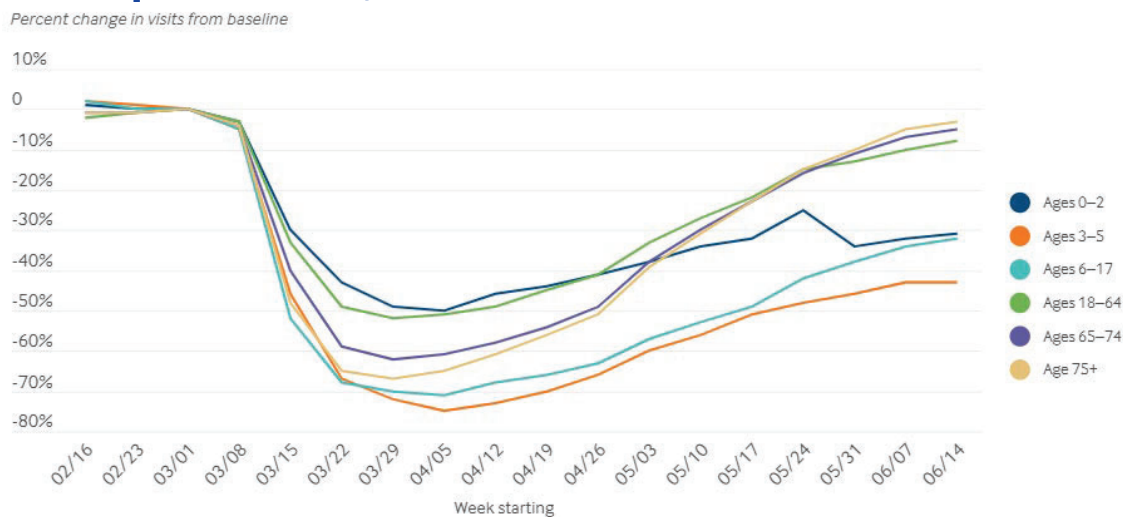
Since the nadir of visits in late March, there has been a substantial rebound in visits among people covered by Medicare. The rebound among people covered by Medicaid has lagged.



Data are presented as a percentage change in the number of visits of any type (in-person and telemedicine) in a given week from the baseline week (March 1–7). Note that type of insurance is observed at the time of a visit; therefore, some observed changes could be driven by patients losing their private insurance and becoming uninsured or by patients enrolling in Medicaid. Many children have Medicaid, and some of these changes could be driven not by type of insurance but rather by the differential impact of the pandemic on children versus adults (see next graph).

Source: Ateev Mehrotra et al., *The Impact of the COVID-19 Pandemic on Outpatient Visits: Practices Are Adapting to the New Normal* (Commonwealth Fund, June 2020). <https://doi.org/10.26099/2v5t-9y63>

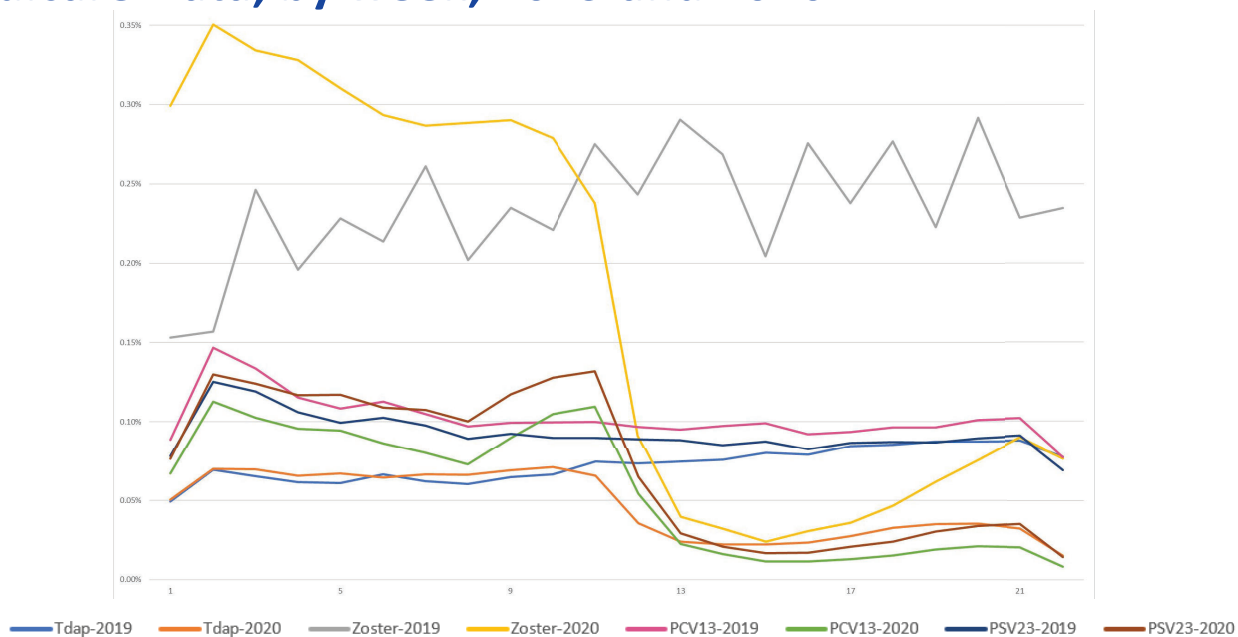
By the week of June 14th, visits by adults  $\geq 75y$  were depressed only 3% from baseline. But among children ages 3 to 5, visits remain depressed 43% from baseline.



Source: Ateev Mehrotra et al., *The Impact of the COVID-19 Pandemic on Outpatient Visits: Practices Are Adapting to the New Normal* (Commonwealth Fund, June 2020). <https://doi.org/10.26099/2v5t-9y63>



## Adult immunization has also decreased with COVID: Medicare Data, by week, 2019 and 2020



CDC unpublished data: do not circulate

# Flu vaccination

# COVID prevention may be influenza prevention...

## Australia's flu season has been suppressed by covid-19 lockdown

Influenza cases in Australia (laboratory-confirmed)

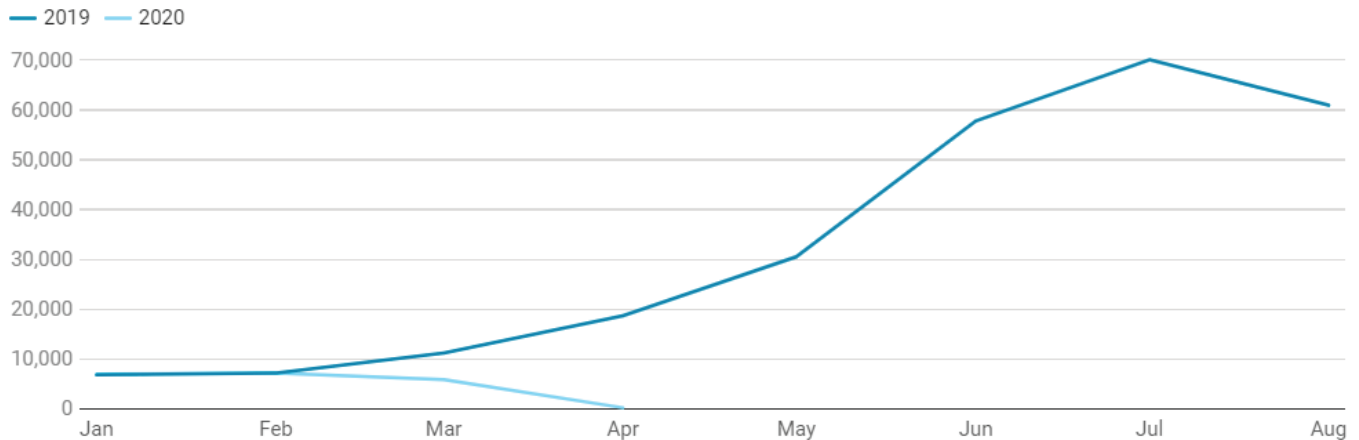


Chart: New Scientist • Source: [Australian Department of Health](#) • [Get the data](#) • Created with Datawrapper

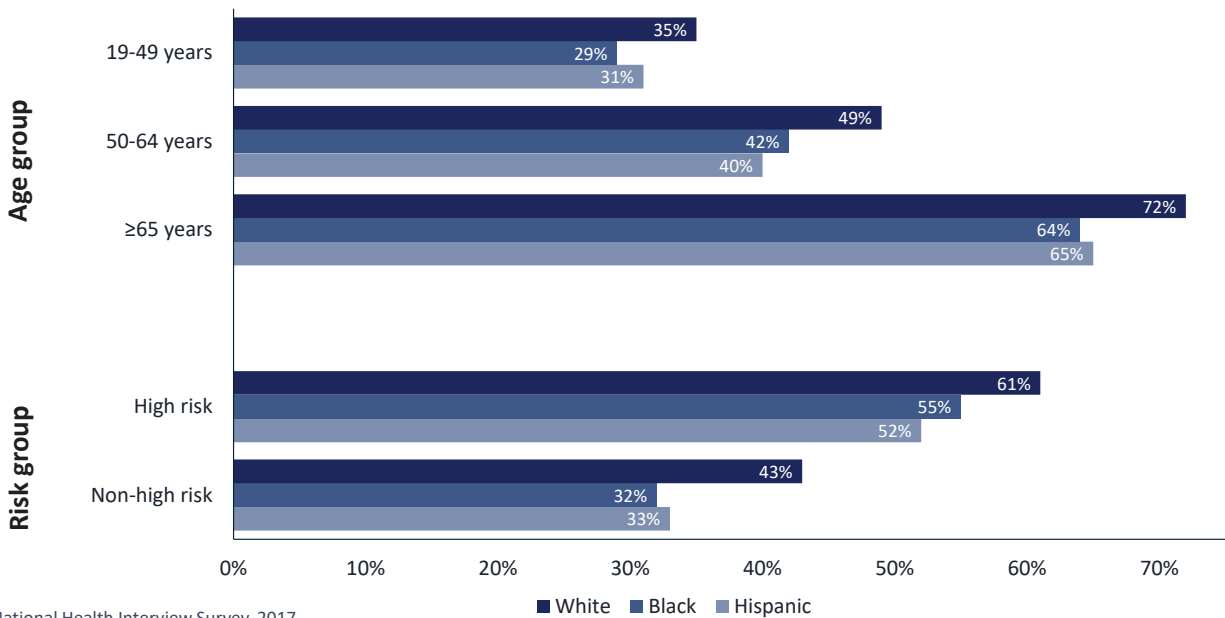
Source: <https://www.newscientist.com/article/2242113-australia-sees-huge-decrease-in-flu-cases-due-to-coronavirus-measures/>

## However, in the US, we must plan to increase influenza vaccine coverage to decrease healthcare utilization

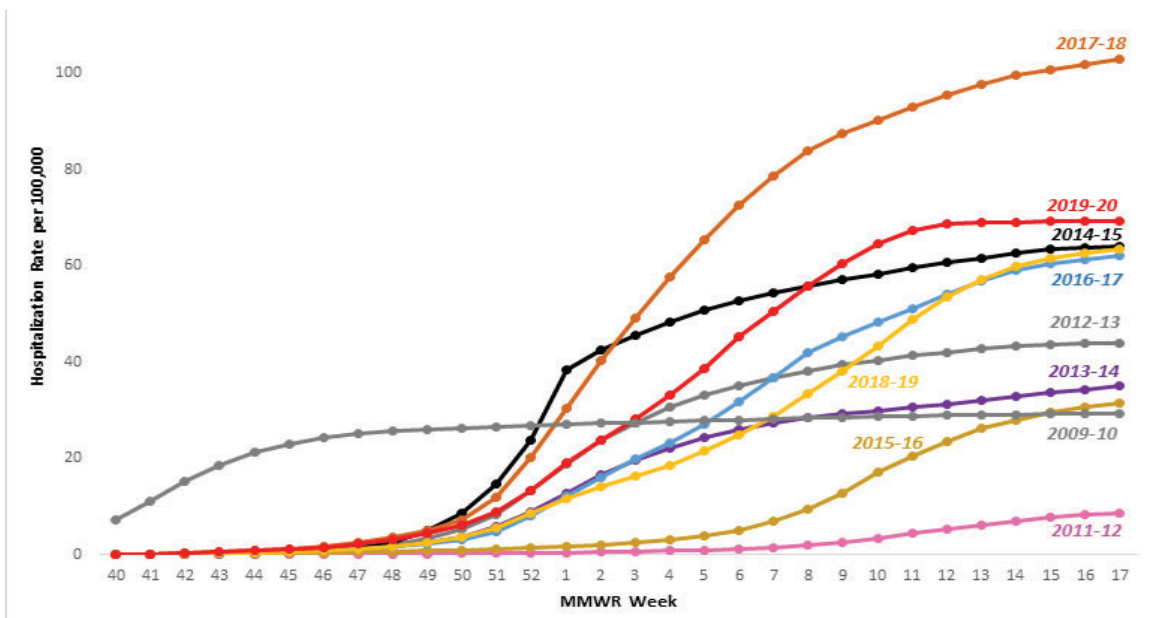
- We expect SARS-CoV-2 to continue to circulate in the fall
- Increasing influenza vaccine coverage can decrease stress on the healthcare system
  - Decrease doctor visits and hospitalizations
  - Decrease individuals needing diagnostic testing
- Focus increased flu vaccination efforts on adults at higher risk from COVID-19
  - Staff and residents of long-term care facilities
  - Adults with underlying illnesses
  - African-American and Hispanic communities
  - Adults who are part of critical infrastructure

# Racial and ethnic disparities in influenza coverage

Reducing existing disparities will be important to protect minority and at-risk populations for both influenza and future COVID-19 vaccines

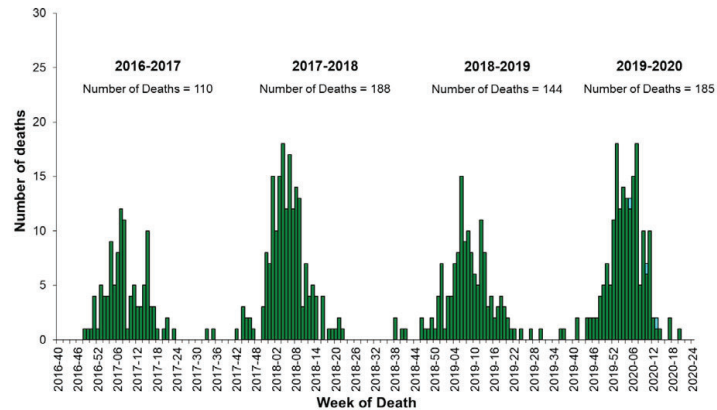
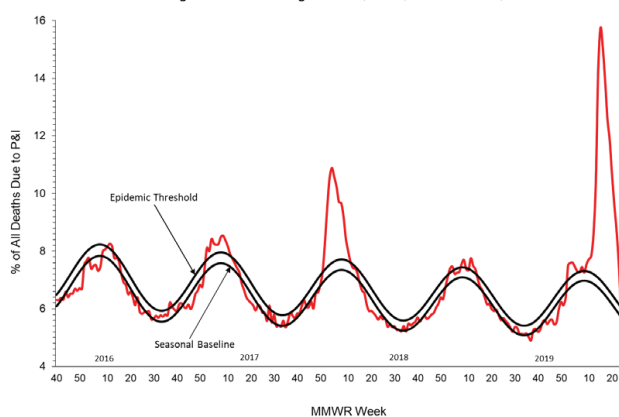


## Cumulative Rate of Laboratory Confirmed Influenza-Associated Hospitalizations, FluSurvNet, 2009-10 through 2019-20

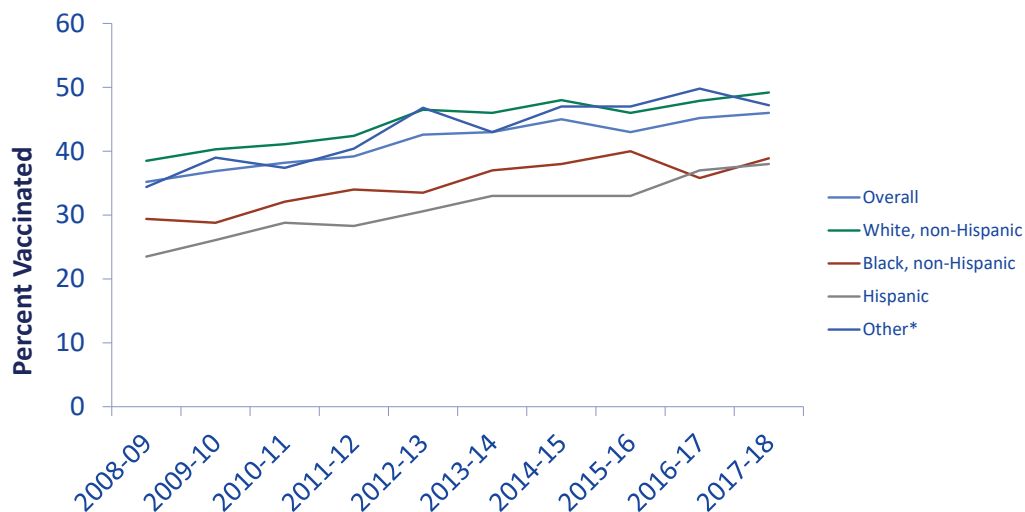


# Influenza-Associated Mortality

Pneumonia and Influenza Mortality from  
the National Center for Health Statistics Mortality Surveillance System  
Data through the week ending June 13, 2020, as of June 18, 2020



## Influenza Vaccination Coverage, $\geq 18$ years, by Race/Ethnicity: 2008-09 through 2017-18 Influenza Seasons, NHIS, United States

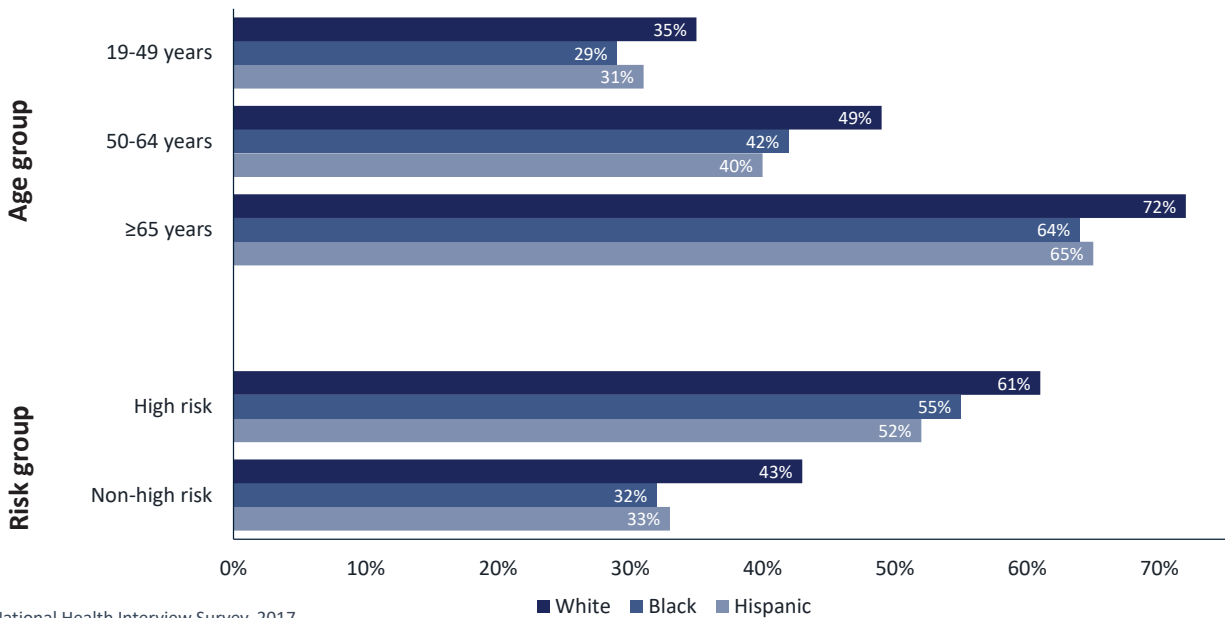


Source: National Health Interview Survey

\* Other includes Asian, American Indian/Alaska Native, and multiple races.

# Racial and ethnic disparities in influenza coverage

Reducing existing disparities will be important to protect minority and at-risk populations for both influenza and future COVID-19 vaccines



## Safe Vaccination Strategies

# Increasing Seasonal Influenza Vaccine Coverage to Decrease Healthcare Utilization, 2020-21

- Expect SARS-CoV-2 to continue to circulate in the fall
  - Increasing flu vaccination coverage will reduce stress on the healthcare system
    - Decrease doctor visits and hospitalizations
    - Reduce use of diagnostics
  - Focus on adults at higher risk from COVID-19
    - staff and residents of LTCF
    - adults with underlying illnesses
    - African-Americans, Hispanics, American Indians and Alaska Natives
    - adults who are part of critical infrastructure
- 

## Influenza vaccination

Use every opportunity to administer influenza vaccines to all eligible persons, including:

- *Essential workers*: Healthcare personnel and other critical infrastructure workforce
- *Persons at increased risk for [severe illness from COVID-19](#)*, including older adults and those with underlying medical conditions
- Severe illness from COVID-19 has been shown to disproportionately affect members of certain [racial/ethnic minority groups](#).
- *Persons at [high risk for influenza complications](#)*

# Information for alternative vaccination sites

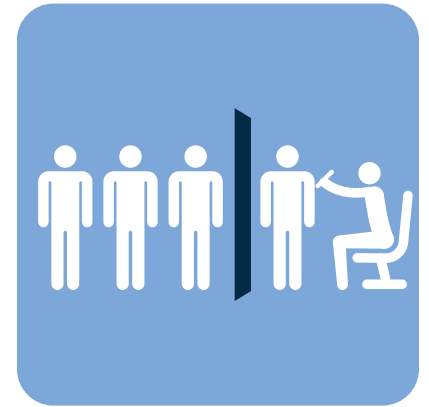
## Alternative vaccination sites

- Pharmacies
- Non-traditional facilities such as schools and churches
- Curbside clinics
- Drive-through clinics
- Mobile outreach units
- Home visits

# Alternative vaccination site guidance during COVID-19

Follow clinical setting guidance and take additional precautions:

- Select a space large enough to ensure physical distancing.
- Provide specific appointment times and use other strategies to manage patient flow and avoid crowding.
- Set up unidirectional site flow with signs, ropes, or other measures.
- Have a separate vaccination area or separate hours for persons at increased risk for severe illness from COVID-19.



<https://www.cdc.gov/vaccines/pandemic-guidance/index.html>

## Guidance for Planning Vaccination Clinics Held at Satellite, Temporary, or Off-Site Locations

- Assist with jurisdictional planning and implementation of vaccination clinics
- Public and private vaccination organizations or preparedness professionals
- Clinical considerations
  - Vaccine storage, handling, administration, and documentation
  - General public
  - Targeted populations (i.e., critical workforce personnel and/or higher-risk priority groups)
  - Routine vaccination
  - Emergency vaccination in preparedness scenario

<https://www.cdc.gov/vaccines/hcp/admin/mass-clinic-activities>



# Guidance for Planning Vaccination Clinics Held at Satellite, Temporary, or Off-Site Locations



Planning Activities



During the Clinic Activities



Pre-Clinic Activities



Post-Clinic Activities

<https://www.cdc.gov/vaccines/hcp/admin/mass-clinic-activities>

## Planners are encouraged to use

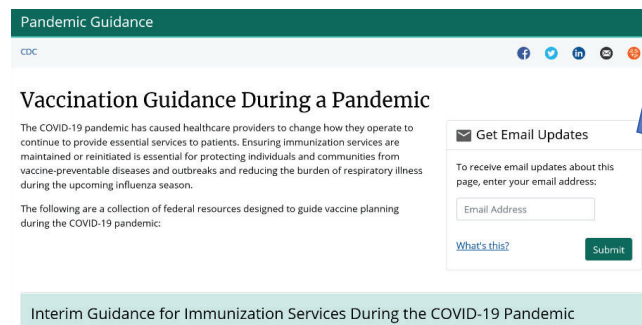
- [Resources for hosting an off-site vaccination clinic](#)
- [Checklist of Best Practices for Vaccination Clinics Held at Satellite, Temporary, or Off-Site Locations](#)
  - patient safety and vaccine effectiveness
  - vaccine shipment, transport, storage, handling, preparation, administration, and documentation at temporary clinics

<https://www.cdc.gov/vaccines/hcp/admin/mass-clinic-activities>

# Updates and resources

## Vaccination guidance is continuously being reviewed and updated

- Visit <https://www.cdc.gov/vaccines/pandemic-guidance/index.html> for the most recent guidance.
- Sign up to be notified when information on the web page changes.



## COVID-19 operational guidance

- **State and local health departments:**

- <https://www.cdc.gov/coronavirus/2019-ncov/php/index.html>

- **Tribal communities:**

- <https://www.cdc.gov/coronavirus/2019-ncov/community/tribal/index.html>

- **Clinical care:**

- <https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-care.html>

- **Long-term care facilities:**

- <https://www.cdc.gov/coronavirus/2019-ncov/hcp/long-term-care.html>

<https://www.cdc.gov/vaccines/pandemic-guidance/index.html>



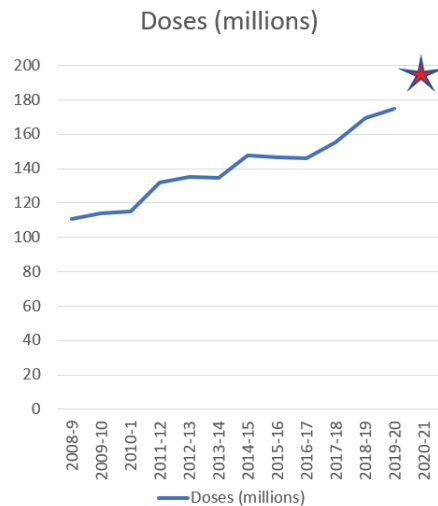
## Additional CDC Resources

- 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/fluview/index.htm>
  - For Professionals: <https://www.cdc.gov/flu/professionals/index.htm>
    - Vaccination homepage: <https://www.cdc.gov/flu/professionals/vaccination/index.htm>
    - 2017-18 ACIP Influenza Recommendations: <https://www.cdc.gov/mmwr/volumes/66/rr/rr6602a1.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](https://www.cdc.gov/phpr/readywrigley/documents/ready_wrigley_flu.pdf)
- 

# Influenza vaccination planning for 2020-2021 season

- Maximize available vaccine supply
  - Expect >190M doses for U.S. market
- Operational considerations
  - Outreach to those at higher risk
  - Planning for potential need for social distancing
  - Extending influenza vaccination season (September through December or later)
- Enhancing communication
  - Align with COVID-19 messaging
  - Messaging for African-American and Hispanic communities

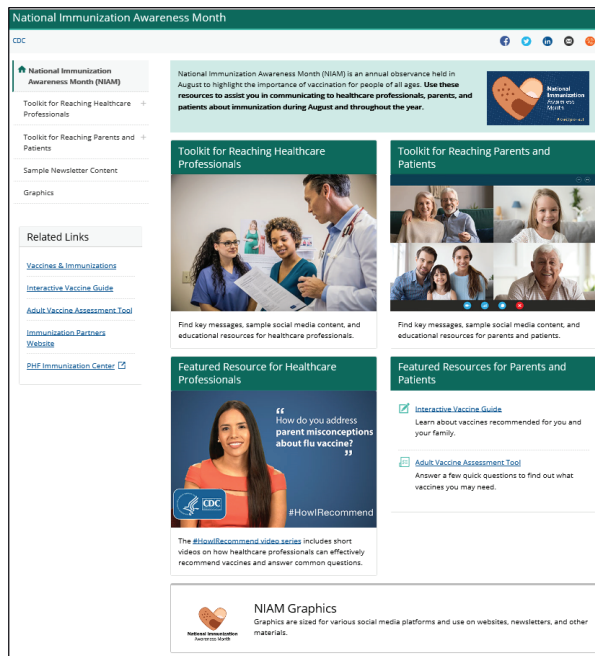
Influenza Vaccine Doses Distributed By Season, 2008-9 to 2019-20, and Projected, 2020-21



## Supplemental Resources for Public Sector Influenza Vaccination for the 2020-2021 Influenza Season

- Two Components
  - Cooperative Agreement with 64 Immunization Program Awardees (2020-2021; \$141 million)
  - Supplemental influenza vaccine doses (2020; 9.3 million doses)
- Funding to support operational costs associated with planning and implementation of expanded influenza vaccination program
- Supplemental vaccine doses to be allocated among the awardees
  - Strong recommendation for awardee partnerships with Community Health Centers (CHCs)
  - Facilitating connections with CHCs through CDC relationship with the National Association of Community Health Centers

# August: National Immunization Awareness Month



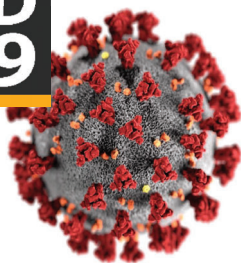
- Toolkits
- Resources for healthcare professionals
- Resources for parents and patients
- Sample newsletter content
- Graphics
- Webinar
- Live Instagram Q&A

<https://www.cdc.gov/vaccines/events/niam/index.html>

50

## COVID-19 vaccine planning

# Preparing for COVID-19 Vaccine



- CDC is working with cross-USG Operation Warp Speed to plan vaccine trials, program, and safety and effectiveness monitoring
- State Immunization programs updating immunization information systems (IIS) for documenting vaccination and second dose reminder/recall
- Planning underway for public sector vaccine distribution
- ACIP WG and full ACIP are considering recommendations for COVID-19 vaccine use
- NASEM is considering prioritization of vaccine when supply is limited

## COVID-19 vaccines in human clinical trials – United States\*

Candidate	Manufacturer	Type	Phase	Trial characteristics	Trial #
mRNA-1273	Moderna TX, Inc.	mRNA	II	<ul style="list-style-type: none"> <li>• 2 doses (0, 28d)</li> <li>• IM administration</li> <li>• 18-55, 56+ years</li> <li>• Phase III: July 2020</li> </ul>	NCT04283461 NCT04405076
mRNA-BNT162	Pfizer, Inc./BioNTech	mRNA	I/II	<ul style="list-style-type: none"> <li>• Single or 2 doses</li> <li>• IM administration</li> <li>• 18-85 years</li> </ul>	NCT04368728
INO-4800	Inovio Pharmaceuticals, Inc.	DNA plasmid	I/II	<ul style="list-style-type: none"> <li>• 2 doses (0, 4w)</li> <li>• SC administration/electroporation</li> <li>• ≥18 years</li> </ul>	NCT04336410
KBP-COVID-19	Kentucky BioProcessing, Inc.	Protein subunit	I/II	<ul style="list-style-type: none"> <li>• 2 doses (1,22d)</li> <li>• IM administration</li> <li>• 18-49, 50-70</li> </ul>	NCT04473690



\*As of July 23, 2020; trials have commenced or are approved to commence.

Sources: <https://milkeninstitute.org/covid-19-tracker>; <https://www.who.int/who-documents-detail/draft-landscape-of-covid-19-candidate-vaccines>; [https://vac-lshtm.shinyapps.io/ncov\\_vaccine\\_landscape/](https://vac-lshtm.shinyapps.io/ncov_vaccine_landscape/)

# Thank you

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

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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