



Adult Immunization Update

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Commonwealth of Massachusetts

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Speaker Disclosures

- Andrew Kroger is a federal government employee with no financial interest or conflict with the manufacturer of any product named in this presentation.
- Andrew Kroger will discuss the off-label use of Tetanus-reduced-diphtheria acellular pertussis vaccine (Tdap) and serogroup B meningococcal vaccine.
- Andrew Kroger will not discuss a vaccine not currently licensed by the FDA.
- The use of trade names is for identification purposes only and does not imply endorsement by the ACIP or CDC.

Overview

- Adult schedule
- Shared clinical decision-making
- Focused updates to the schedule
 - Varicella
 - Hepatitis B
 - Tdap vaccine
 - Zoster
 - Hepatitis A
 - Meningococcal vaccination
- Non-routine vaccine recommendation
 - Ebola vaccine
- Vaccination during the pandemic

The Adult Schedule

Recommended Adult Immunization Schedule for ages 19 years or older

UNITED STATES
2021

How to use the adult immunization schedule

- 1** Determine recommended vaccinations by age (**Table 1**)
- 2** Assess need for additional recommended vaccinations by medical condition and other indications (**Table 2**)
- 3** Review vaccine types, frequencies, and intervals and considerations for special situations (**Notes**)

Recommended by the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/acip) and approved by the Centers for Disease Control and Prevention (www.cdc.gov), American College of Physicians (www.acponline.org), American Academy of Family Physicians (www.aafp.org), American College of Obstetricians and Gynecologists (www.acog.org), American College of Nurse-Midwives (www.midwife.org), and American Academy of Physician Assistants (www.aapa.org).

Vaccines in the Adult Immunization Schedule*

Vaccines	Abbreviations	Trade names
<i>Haemophilus influenzae</i> type b vaccine	Hib	ActHIB® Hiberix® PedvaxHIB®
Hepatitis A vaccine	HepA	Havrix® Vaqta®
Hepatitis A and hepatitis B vaccine	HepA-HepB	Twinrix®
Hepatitis B vaccine	HepB	Engerix-B® Recombivax HB® Heplisav-B®
Human papillomavirus vaccine	HPV	Gardasil 9®
Influenza vaccine (inactivated)	IIV	Many brands
Influenza vaccine (live, attenuated)	LAIV4	FluMist® Quadrivalent
Influenza vaccine (recombinant)	RIV4	Flublok® Quadrivalent
Measles, mumps, and rubella vaccine	MMR	M-M-R II®
Meningococcal serogroups A, C, W, Y vaccine	MenACWY-D MenACWY-CRM MenACWY-TT	Menactra® Menveo® MenQuadfi®
Meningococcal serogroup B vaccine	MenB-4C MenB-FHbp	Bexsero® Trumenba®
Pneumococcal 13-valent conjugate vaccine	PCV13	Prevnar 13®
Pneumococcal 23-valent polysaccharide vaccine	PPSV23	Pneumovax 23®
Tetanus and diphtheria toxoids	Td	Tenivac® Tdvax™
Tetanus and diphtheria toxoids and acellular pertussis vaccine	Tdap	Adacel® Boostrix®
Varicella vaccine	VAR	Varivax®
Zoster vaccine, recombinant	RZV	Shingrix

*Administer recommended vaccines if vaccination history is incomplete or unknown. Do not restart or add doses to vaccine series if there are extended intervals between doses. The use of trade names is for identification purposes only and does not imply endorsement by the ACIP or CDC.

Report

- Suspected cases of reportable vaccine-preventable diseases or outbreaks to the local or state health department
- Clinically significant postvaccination reactions to the Vaccine Adverse Event Reporting System at www.vaers.hhs.gov or 800-822-7967

Injury claims

All vaccines included in the adult immunization schedule except pneumococcal 23-valent polysaccharide (PPSV23) and zoster (RZV) vaccines are covered by the Vaccine Injury Compensation Program. Information on how to file a vaccine injury claim is available at www.hrsa.gov/vaccinecompensation.

Questions or comments

Contact www.cdc.gov/cdc-info or 800-CDC-INFO (800-232-4636), in English or Spanish, 8 a.m.–8 p.m. ET, Monday through Friday, excluding holidays.



Download the CDC Vaccine Schedules app for providers at www.cdc.gov/vaccines/schedules/hcp/schedule-app.html.

Helpful information

- Complete ACIP recommendations: www.cdc.gov/vaccines/hcp/acip-recs/index.html
- General Best Practice Guidelines for Immunization (including contraindications and precautions): www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html
- Vaccine information statements: www.cdc.gov/vaccines/hcp/vis/index.html
- Manual for the Surveillance of Vaccine-Preventable Diseases (including case identification and outbreak response): www.cdc.gov/vaccines/pubs/surv-manual
- Travel vaccine recommendations: www.cdc.gov/travel
- Recommended Child and Adolescent Immunization Schedule, United States, 2021: www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html
- ACIP Shared Clinical Decision-Making Recommendations www.cdc.gov/vaccines/acip/acip-scdm-faqs.html



**U.S. Department of
Health and Human Services**
Centers for Disease
Control and Prevention

Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2021

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
Influenza inactivated (IIV) or Influenza recombinant (RIV4) or Influenza live, attenuated (LAIV4)	1 dose annually			
	1 dose annually			
Tetanus, diphtheria, pertussis (Tdap or Td)	1 dose Tdap each pregnancy; 1 dose Td/Tdap for wound management (see notes)			
	1 dose Tdap, then Td or Tdap booster every 10 years			
Measles, mumps, rubella (MMR)	1 or 2 doses depending on indication (if born in 1957 or later)			
Varicella (VAR)	2 doses (if born in 1980 or later)		2 doses	
Zoster recombinant (RZV)			2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal conjugate (PCV13)	1 dose			1 dose
Pneumococcal polysaccharide (PPSV23)	1 or 2 doses depending on indication			1 dose
Hepatitis A (HepA)	2 or 3 doses depending on vaccine			
Hepatitis B (HepB)	2 or 3 doses depending on vaccine			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication, see notes for booster recommendations			
Meningococcal B (MenB)	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations			
	19 through 23 years			
Haemophilus influenzae type b (Hib)	1 or 3 doses depending on indication			

Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection

Recommended vaccination for adults with an additional risk factor or another indication

Recommended vaccination based on shared clinical decision-making

No recommendation/Not applicable

Table 2 Recommended Adult Immunization Schedule by Medical Condition and Other Indications, United States, 2021

Vaccine	Pregnancy	Immuno-compromised (excluding HIV infection)	HIV infection CD4 count		Asplenia, complement deficiencies	End-stage renal disease; or on hemodialysis	Heart or lung disease, alcoholism ¹	Chronic liver disease	Diabetes	Health care personnel ²	Men who have sex with men
			<200 mm ³	≥200 mm ³							
IIV or RIV4 or	1 dose annually										
LAIV4	Not Recommended					Precaution				or 1 dose annually	
Tdap or Td	1 dose Tdap each pregnancy	1 dose Tdap, then Td or Tdap booster every 10 years									
MMR	Not Recommended*	Not Recommended	1 or 2 doses depending on indication								
VAR	Not Recommended*	Not Recommended		2 doses							
RZV					2 doses at age ≥50 years						
HPV	Not Recommended*	3 doses through age 26 years			2 or 3 doses through age 26 years depending on age at initial vaccination or condition						
PCV13		1 dose									
PPSV23		1, 2, or 3 doses depending on age and indication									
HepA				2 or 3 doses depending on vaccine							
HepB				2, 3, or 4 doses depending on vaccine or condition				<60 years			
								≥60 years			
MenACWY	1 or 2 doses depending on indication, see notes for booster recommendations										
MenB	Precaution	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations									
Hib		3 doses HSCT ³ recipients only		1 dose							

Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection
 Recommended vaccination for adults with an additional risk factor or another indication
 Precaution—vaccination might be indicated if benefit of protection outweighs risk of adverse reaction
 Recommended vaccination based on shared clinical decision-making
 Not recommended/contraindicated—vaccine should not be administered.
 No recommendation/Not applicable

*Vaccinate after pregnancy.

1. Precaution for LAIV4 does not apply to alcoholism. 2. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. 3. Hematopoietic stem cell transplant.

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HepA				2 or 3 doses depending on vaccine							
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Shared Clinical Decision-making

The screenshot shows the CDC website header with the logo and tagline "Centers for Disease Control and Prevention CDC 24/7: Saving Lives, Protecting People™". A search bar and a "Vaccines site" dropdown menu are visible, along with links to "A-Z Index" and "Advanced Search". The main navigation bar is blue and reads "Advisory Committee on Immunization Practices (ACIP)". Below this, a breadcrumb trail shows "CDC > ACIP Home > Recommendations". Social media icons for Facebook, Twitter, LinkedIn, and YouTube are on the right. The left sidebar contains a "Home" icon and links to "Meeting Information", "Committee Information", "Committee Members", "Apply for ACIP Membership", and "Work Groups". The main content area is titled "ACIP Shared Clinical Decision-Making Recommendations". Below the title is a section "On This Page" with four links: "What are ACIP's current shared clinical decision-making recommendations that appear on the immunization schedules?", "Which patients should providers discuss shared clinical decision-making recommendations with?", "How do shared clinical decision-making recommendations differ from routine, catch-up, and risk-based immunization", and "What resources are available for providers who want to implement these recommendations?". The URL bar at the bottom shows "https://www.cdc.gov/vaccines/acip/acip-scdm-faqs.html#scdm".

CDC Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

A-Z Index
Search Vaccines site
Advanced Search

Advisory Committee on Immunization Practices (ACIP)

CDC > ACIP Home > Recommendations

ACIP Home

Meeting Information

Committee Information +

Committee Members +

Apply for ACIP Membership

Work Groups

ACIP Shared Clinical Decision-Making Recommendations

On This Page

- [What are ACIP's current shared clinical decision-making recommendations that appear on the immunization schedules?](#)
- [Which patients should providers discuss shared clinical decision-making recommendations with?](#)
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<https://www.cdc.gov/vaccines/acip/acip-scdm-faqs.html#scdm>

<https://www.cdc.gov/vaccines/acip/acip-scdm-faqs.html>

Shared Clinical Decision-making (SCDM)

- Fewer efficacy and safety data than that needed by ACIP to make a full recommendation
- Use of the vaccine is based on individual considerations as opposed to population-based considerations
- Default is not to vaccinate
- Vaccine is covered by public and private payers

<https://www.cdc.gov/vaccines/acip/acip-scdm-faqs.html>

Varicella

Varicella Zoster Virus

- Herpes virus (DNA)
- Primary infection results in varicella (chickenpox)
- Recurrent infection results in herpes zoster (shingles)
- Short survival in environment

Varicella Complications

- Bacterial infection of lesions
- Hemorrhagic varicella
- CNS manifestations
- Pneumonia (primary viral or secondary bacterial)
- Congenital varicella
- Perinatal varicella
- Prevacine era:
 - Hospitalization ~3 per 1,000 cases or 1,000/year
 - Death ~ 1 per 60,000 cases or 100/year

Increased Risk of Complications of Varicella

- Persons older than 15 years
- Infants younger than 1 year
- Immunocompromised persons
- Newborns of women with rash onset within 5 days before to 48 hours after delivery

Varicella Vaccine and Immunocompromised Persons

- Single-antigen varicella vaccine may be administered to persons with isolated humoral immunodeficiency
- Consider varicella vaccination for:
 - HIV-infected children with CD4 count of 15% or higher
 - HIV-infected older children and adults with CD4 count of 200 or higher

Varicella and Immunosuppression (SCDM)

- Varicella disease can be severe in immunosuppressed persons
- Varicella vaccine is an attenuated live vaccine – risk of dissemination
- Varicella vaccine contraindicated in most immunosuppressed patients
- Patients with HIV and CD4 counts greater than or equal to 200 cells per cubic millimeter can receive varicella vaccine subject to SCDM.

<https://www.cdc.gov/vaccines/acip/acip-scdm-faqs.html>

Hepatitis B



Hepatitis B Vaccine – Adult Recommendations

- Universal vaccination of infants since 1991
- Universal recommendation for children through 18 years
- Adult recommendations – high-risk only

<https://www.cdc.gov/vaccines/acip/acip-scdm-faqs.html>

Hepatitis B Vaccine - Adult Recommendations

Medical

- AIDS
- chronic liver disease
- diabetes for persons 18-59 years

Behavior

- multiple sexual partners
- men who have sex with men
- injection drug use
- history of STD
- travel to endemic region

Demographic

- household contact HBsAg +
- sex partner HBsAg+
- immigrant/refugee from endemic region

Occupation

- exposure to blood or sharps injury
- staff/resident in developmental disability facility)

Hepatitis B Vaccine - SCDM

Medical

AIDS

chronic liver disease

diabetes for persons 18-59 years >>>>>> **diabetes for persons 60 years old or older**

Behavior

multiple sexual partners

men who have sex with men

injection drug use

history of STD

travel to endemic region

Demographic

household contact HBsAg +

sex partner HBsAg+

immigrant/refugee from endemic region

Occupation

exposure to blood or sharps injury

staff/resident in developmental disability facility)

Tetanus-reduced-diphtheria Acellular Pertussis Vaccine (Tdap)

Tetanus-reduced-diphtheria Acellular Pertussis Vaccine (Tdap) - Changes

- For tetanus and/or diphtheria component catch-up, after the first dose is administered as Tdap, future doses can be administered as EITHER Tdap or Td.
- Doses administered for wounds can be either Tdap or Td
- Doses administered in every current pregnancy should be Tdap ONLY

Tdap Recommendations: Pregnant Women

- Administer a dose of Tdap during each pregnancy, regardless of the patient's prior history of receiving the vaccine.
- Tdap should be administered between 27 and 36 weeks' gestation, although it may be given at any time during pregnancy.
 - Currently available data suggest that vaccinating earlier in the 27- through 36-week time period will maximize passive antibody transfer to the infant.

Tdap and Pregnant Women

- Vaccination coverage for pregnant women:
 - 2010 and earlier <1%
 - 2013 28%
 - 2015 53%
- 96% of Tdap vaccinations were administered in physicians' offices or clinics.

Maternal Vaccination



Resources for healthcare professionals

Vaccines help keep your pregnant patients and their growing families healthy.

Last Updated September, 2016

Vaccine	Before pregnancy	During pregnancy	After pregnancy	Type of vaccine
Influenza	Yes	Yes, during flu season	Yes	Inactivated
Tdap	May be recommended; it is better to vaccinate during pregnancy when possible	Yes, during each pregnancy	Yes, immediately postpartum, if Tdap never received in lifetime; it is better to vaccinate during pregnancy	Toxoid/ Inactivated
Td	May be recommended	May be recommended, but Tdap is preferred	May be recommended	Toxoid
Hepatitis A	May be recommended	May be recommended	May be recommended	Inactivated
Hepatitis B	May be recommended	May be recommended	May be recommended	Inactivated
Meningococcal	May be recommended	Base decision on risk vs. benefit; inadequate data for specific recommendation	May be recommended	Inactivated
Pneumococcal	May be recommended	Base decision on risk vs. benefit; inadequate data for specific recommendation	May be recommended	Inactivated
HPV	May be recommended (through 26 years of age)	No	May be recommended (through 26 years of age)	Inactivated
MMR	May be recommended; once received, avoid conception for 4 weeks	No	May be recommended	Live
Varicella	May be recommended; once received, avoid conception for 4 weeks	No	May be recommended	Live

For more information, visit: www.cdc.gov/vaccines/pregnancy
 Get an answer to your specific question by e-mailing cdcinfo@cdc.gov
 or calling 800-CDC-INFO (232-4636)



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

CS140015-0001-1001 09/27/2016

Maternal Tdap Vaccination Is Very Effective in Prevention of Infant Pertussis Infection

		Definitions	
	Vaccine effectiveness (95% confidence intervals)	Infant age at pertussis onset	Mother gestational age received Tdap
<u>United Kingdom</u>			
Observational, ¹ screening method	91% (83–95%)	Younger than 3 months	At least 28 days before birth*
Case-Control, ² retrospective	91% (77–97%), unadjusted 93% (81–97%), adjusted [¶]	Younger than 2 months	Cases: 31.5 weeks (range, 28–38) Controls: 33 weeks (range, 26–38)
<u>United States</u>			
Cohort, ³ retrospective	85% (33–98%)	Younger than 2 months	27–36 weeks
Case-Control, ⁴ retrospective	78% (44–91%)	Younger than 2 months	27–36 weeks

*2012 UK recommendation: Tdap between 28 and 38 weeks

¶Adjusted for sex, geographical area, and birth period

¹Amirthalingam G, et al. 2014; ²Dabrera G, et al. 2015; ³Winter K, et al. 2016; ⁴CDC, unpublished

ACIP Conclusions: Safety of Tdap for Every Pregnancy

- Data reassuring on 2 doses of Tdap
- Data and experience with tetanus toxoid vaccine suggest no excess risk of adverse events.
 - ~5% of women would receive 4 or more doses.
- CDC provides ongoing monitoring to address concerns about the safety of Tdap given during subsequent pregnancies.

Postpartum Women and Close Contacts of Infants

- Previously unvaccinated EVER or vaccination status unknown—administer Tdap
- Previously vaccinated persons—Tdap is NOT indicated
 - Including mothers, fathers, siblings, and grandparents
 - Any previous, documented dose counts.

Zoster



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Recommended vaccination based on shared clinical decision-making

Not recommended/contraindicated—vaccine should not be administered.

No recommendation/Not applicable

*Vaccinate after pregnancy.

1. Precaution for LAIV4 does not apply to alcoholism. 2. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. 3. Hematopoietic stem cell transplant.

Zoster Vaccine in Immunocompromised

- “No recommendation” versus “not recommended”
- Important to draw this distinction, since the package insert no longer states that RZV is indicated for immunocompetent persons
- Recombinant Zoster Vaccine (RZV) is a non-live vaccine
- Both FDA and CDC are silent on immunocompromise

Hepatitis A

Please note: This report has been corrected. An erratum has been published.

Centers for Disease Control and Prevention
MMWR
Recommendations and Reports / Vol. 69 / No. 5

Morbidity and Mortality Weekly Report
July 3, 2020

Prevention of Hepatitis A Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices, 2020



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Adult Hepatitis A Vaccination Recommendations

- Travelers to areas with moderate or high incidence of hepatitis A
- HIV infection
- Homeless persons
- Men who have sex with men
- Illegal drug users
- Persons with occupational risk
- Persons with chronic liver disease, including hepatitis C
- Household contacts of international adoptees within 60 days of the adoptee's arrival in U.S.
- Patients in settings in which high-risk patients are seen

Hepatitis A Vaccine – New CDC Guidance

- For patients who are HIV positive
- HepA vaccine is recommended (not new)
- Post vaccination serology is recommended – revaccination can be considered if negative

Meningococcal Disease



New Meningococcal Conjugate Vaccine - MenQuadfi

- Quadrivalent – Like Menactra and Menveo (A, C, W, Y)
- Licensed for all adults (approved age 2 years and older)
- Conjugate is tetanus toxoid instead of diphtheria toxoid
- Recommendations the same as Menactra and Menveo

Serogroup B Meningococcal Vaccine

- Recommended for persons at high-risk for invasive serogroup B disease
 - In a serogroup B disease outbreak
 - Anatomic or functional asplenia (including sickle cell disease)
 - Complement component deficiency
 - Taking complement inhibitors (e.g. eculizumab, ravulizumab)
 - Partial DiGeorge syndrome, ataxia-telangiectasia, Wiscott-Aldrich syndrome
- Booster doses are recommended 1 year after completion of the primary series, then every 2-3 years ongoing
- Boosters need to be the SAME brand (Trumenba/Bexsero) as the primary series

Meningococcal B Vaccines

Product Name	FDA Age Indications	Dosage/Route/Schedule
Trumenba [®] (Pfizer)	10 through 25 years of age	• Two or Three 0.5 mL doses • IM injection • 0-, and 6-month or • 0-, 1-2, and 6-month
Bexsero [®] (GlaxoSmithKline)	10 through 25 years of age	• Two 0.5 mL doses • IM injection • 0, 1--6 month

www.cdc.gov/vaccines/acip/meetings/meetings-info.html

Use of 2- and 3-Dose Schedules of Meningococcal Serogroup B Vaccine

- When given to healthy adolescents who are not at increased risk for meningococcal B disease, 2 doses of MenB-FHbp should be administered at 0 and 6 months, or 2 doses of MenB-4C at 0, 1-6 months
- For persons at increased risk for meningococcal B disease, for use during serogroup B outbreaks, and for patients with HIV, 3 doses of MenB-FHbp should be administered at 0, 1-2, 6 months, or 2 doses of MenB-4c should be administered at 0, 1-6 months.

Meningococcal Serogroup B Vaccine Recommendations

- Brands are NOT interchangeable in the same vaccinee
- If two different brands administered to one vaccinee – pick which brand is invalid
- Continue with the other brand
- Must use a 4 week interval after the invalid brand, plus remember minimum interval rules between doses in the series of the same brand

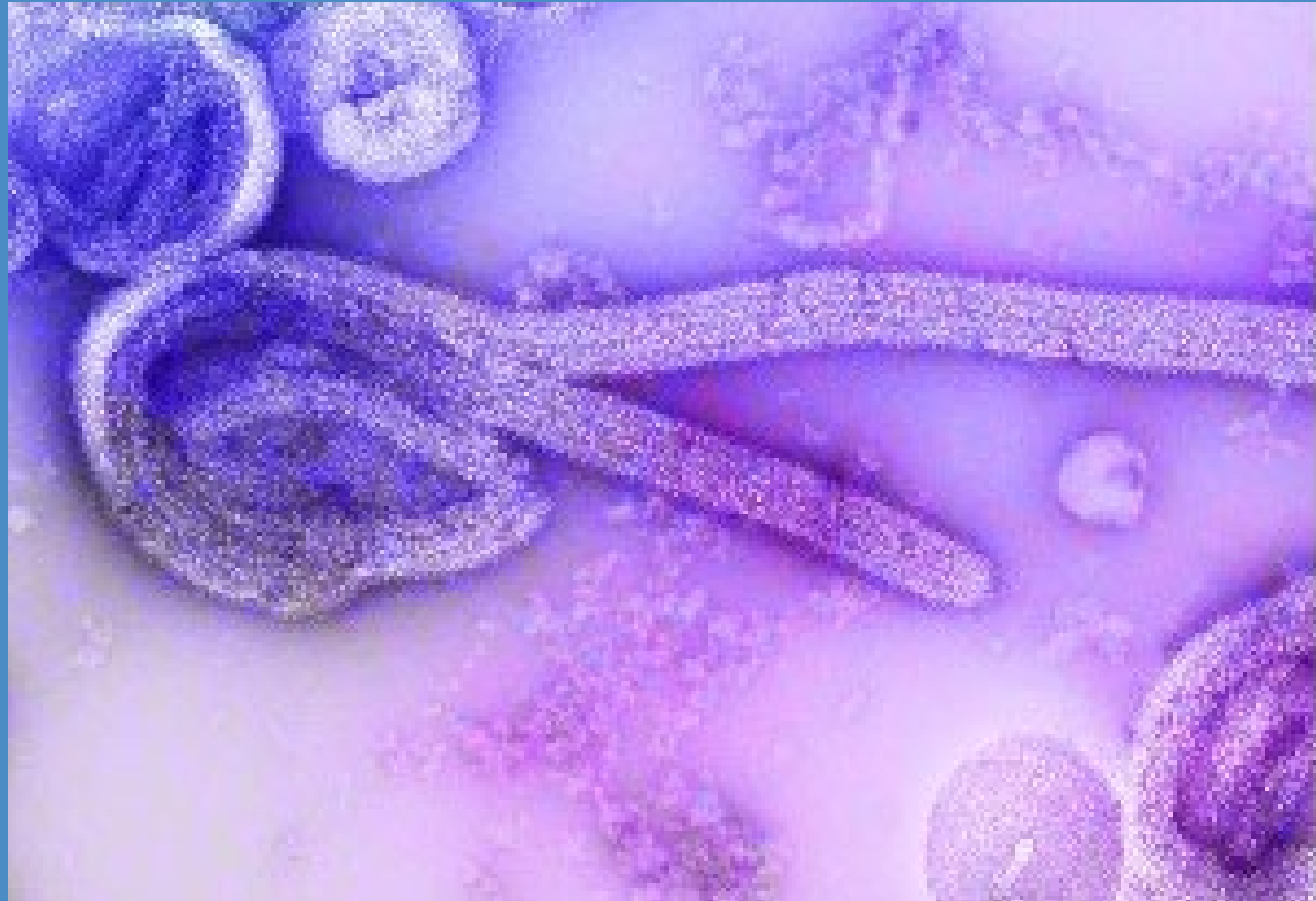
Trumenba Timing and Spacing Errors

- If a patient is recommended for three doses of Trumenba, but the second dose is delayed beyond a six month interval, a third dose is NOT necessary
- If a patient is recommended for two doses of Trumenba, and the second dose is given less than 6 months after the first dose, then a repeat (third) dose must be administered four months after the second dose.

Meningococcal Serogroup B Vaccine Recommendations

- Minimum intervals should be observed between doses of the same vaccine
 - Bexsero (time zero, time 1 month)
 - Trumenba (time zero, time 1-2 months, time 6 months)
 - If the minimum interval is violated, no need to repeat

Ebola Vaccine



Ebola Vaccine

- Live vector vaccine
- Vector (vesicular stomatitis virus)
- Antigen – Ebola glycoprotein

Ebola Vaccine Recommendations

- Published January 8, 2021
- Adults 18 years old and older
- Recommended for:
 - Responding to an outbreak of ebola
 - Health care personnel working in federally designated ebola treatment centers in the United States
 - Laboratorian or other staff working in biosafety level 4 facilities in the United States

Recommendations and Reports

Use of Ebola Vaccine: Recommendations of the Advisory Committee on Immunization Practices, United States, 2020

Mary J. Choi, MD¹; Carlos M. Crumpton, DVM, PhD¹; Amy N. Whitwell, MPH¹; Jonathan W. Dye, MD¹; Allison Joyce, MS¹; Robert L. Morgan, PhD²; Doug Clumpas-Owens, MD³; Maria Perera, MSc⁴; Elizabeth Ertz, MPH⁵; Yoo C. Yu, PhD⁶; Patrick E. Ruffin, MD⁷; Brian H. Hargrett, PhD⁸; Robert L. Azzar, MD⁹; Beth E. Bell, MD⁹; Rita Hethcote, MD¹⁰; Ingrid K. Damon, MD, PhD¹¹; Sharon E. Faye, MD¹²

¹National Center for Emerging and Zoonotic Infectious Diseases, CDC; ²Department of Health Research Methods, Evidence, and Impact, McMaster University Hamilton, Ontario; ³University of Arizona College of Public Health, Tucson, Arizona; ⁴Baylor College of Medicine, Houston, Texas; ⁵University of Washington, Seattle, Washington; ⁶State University School of Medicine, St. Louis, Missouri

Summary

This report summarizes the recommendations of the Advisory Committee on Immunization Practices (ACIP) for use of the rVSVΔG-ZEBOV-GP Ebola vaccine (Ervebo) in the United States. The vaccine contains rice-derived recombinant human serum albumin and live attenuated recombinant vesicular stomatitis virus (VSV) in which the gene encoding the glycoprotein of VSV was replaced with the gene encoding the glycoprotein of Ebola virus species Zaire ebolavirus. Persons with a history of severe allergic reaction (e.g., anaphylaxis) to rice protein should not receive Ervebo. This is the first and only vaccine currently licensed by the Food and Drug Administration for the prevention of Ebola virus disease (EVD). These guidelines will be updated based on availability of new data or as new vaccines are licensed to protect against EVD.

ACIP recommends preexposure vaccination with Ervebo for adults aged ≥18 years in the U.S. population who are at highest risk for potential occupational exposure to Ebola virus species Zaire ebolavirus because they are responding to an outbreak of EVD, work as health care personnel at federally designated Ebola treatment centers in the United States, or work as laboratorians or other staff at biosafety level 4 facilities in the United States. Recommendations for use of Ervebo in additional populations at risk for exposure and other settings will be considered and discussed by ACIP in the future.

Introduction

On December 19, 2019, the rVSVΔG-ZEBOV-GP Ebola vaccine (Ervebo), a replication-competent, live attenuated vaccine was approved by the Food and Drug Administration (FDA) for the prevention of Ebola virus disease (EVD) caused by Ebola virus species *Zaire ebolavirus* (EBOV) in adults aged ≥18 years. The vaccine contains rice-derived recombinant human serum albumin and contains live attenuated recombinant vesicular stomatitis virus. The recombinant virus was created by replacing the gene encoding the glycoprotein of the vesicular stomatitis virus strain *Indiana* with the gene encoding the glycoprotein of the EBOV-Kinw 1995 strain. At the time of the Ervebo licensure, the Advisory Committee on Immunization Practices (ACIP) had no recommendations for the use of vaccines to prevent EVD. On February 26, 2020, ACIP recommended preexposure vaccination with Ervebo for adults aged ≥18 years in the United States who are at highest risk for potential occupational exposure to EBOV because they are responding to

an outbreak of EVD, work as health care personnel* at federally designated Ebola treatment centers in the United States, or work as laboratorians or other staff at biosafety level 4 facilities in the United States (Box).

Background

With case-fatality rates of 70%–90% when untreated, EBOV is the most lethal of the four viruses within the family *Filoviridae* that cause EVD in humans (1). EBOV is responsible for the majority of reported EVD outbreaks in humans (19 of 32[‡]; 59%), including the two largest EVD outbreaks in history (2).

*Health care personnel refers to all paid and unpaid persons serving in health care settings who have the potential for direct or indirect exposure to patients or infectious materials, including body substances (e.g., blood, urine, and specific body fluids), contaminated medical supplies, devices, and equipment; contaminated environmental surfaces or contaminated air. These health care personnel include emergency medical service personnel, nurses, nursing assistants, physicians, technicians, clinical laboratory personnel, autopsy personnel, therapists, phlebotomists, pharmacists, students and trainees, commercial staff not employed by the health care facility and persons not directly involved in patient care but who could be exposed to infectious agents that can be transmitted in the health care setting (e.g., clerical, dietary, environmental services, laundry services, engineering and building management, administration, billing, and volunteer personnel) (See <https://www.cdc.gov/infectioncontrol/guidelines/healthcare-personnel/index.html>).

† The denominator of 32 does not include laboratory accidents or imported cases.

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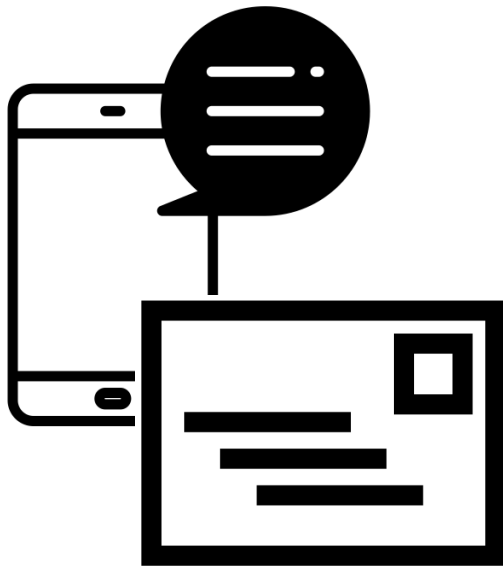
Catch-up Vaccination

Catch-up Priorities – COVID-19 Pandemic

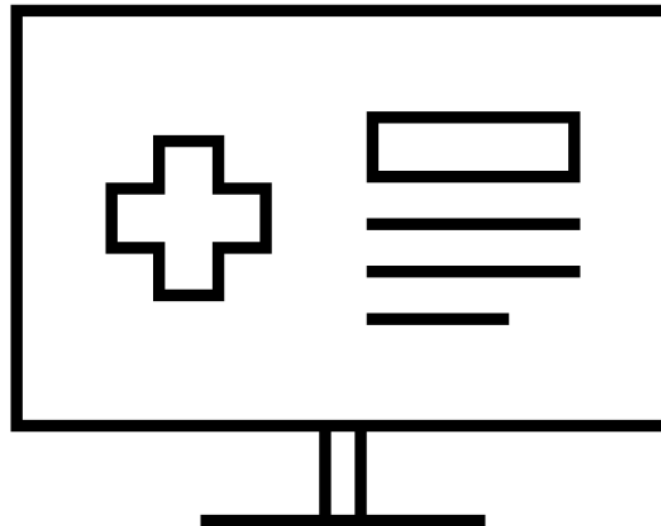
- Children- newborns, infants and children up to 24 months of age, young children, and extending through adolescence
- Pregnant women – Tdap and influenza vaccines should be administered at the next prenatal appointment
- Adults – follow the Standards for Adult Immunization

Catch-up vaccination strategies

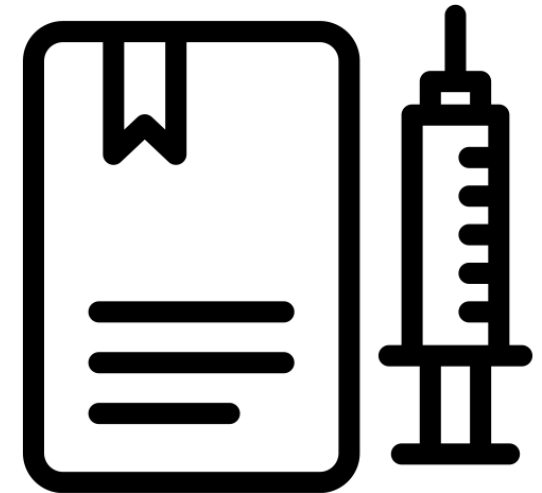
Reminder/recall systems



Forecasting through EHR or IIS*



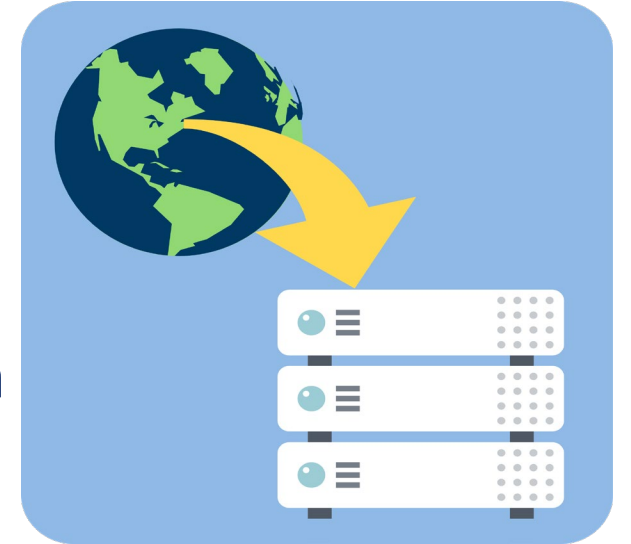
Standing orders



*Electronic health record (EHR) or immunization information system (IIS)

Vaccination documentation

Because patients may be receiving vaccines outside their medical home, it is critical all vaccinations are documented in an Immunization information system (IIS) or electronic health record (EHR) for accurate and timely information on patient vaccination status.



Persons with suspected or confirmed COVID-19

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



Implement enhanced infection control measures

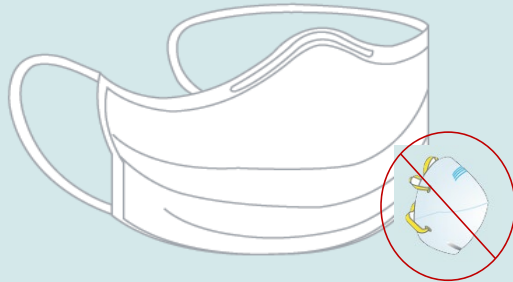
- Screen patients for COVID-19 symptoms before and during the visit.
- Maintain physical distancing (at least 6 feet apart, where possible).
- Limit and monitor facility points of entry and install barriers to limit physical contact with patients at triage.
- Practice respiratory hygiene (facemasks for staff and cloth face coverings for patients over 2 years of age, if tolerated) and cough etiquette.
- Practice hand hygiene (including at least 60% alcohol hand sanitizer for patients).
- Enhance surface decontamination.

Refer to guidance to prevent the spread of COVID-19 in

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

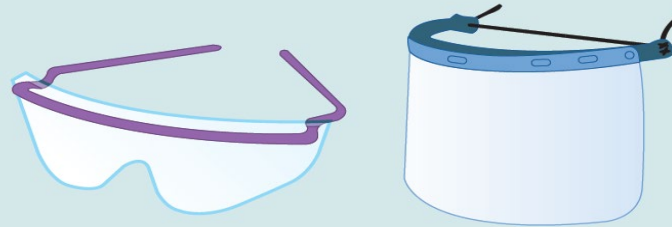
Use personal protection equipment

Face mask



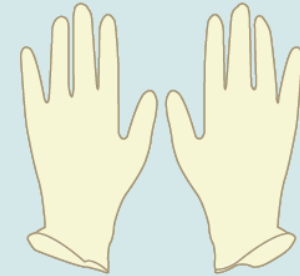
- **Recommended:** All healthcare providers (N95 masks not recommended)

Eye protection



- **Recommended:** Areas of moderate/substantial community transmission
- **Optional:** Areas of minimal/no community transmission

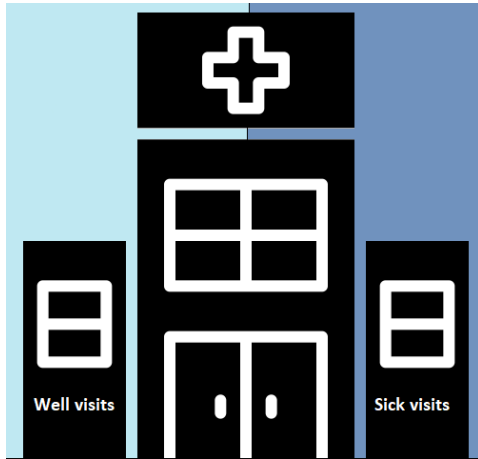
Gloves



- **Recommended:** Intranasal or oral vaccines
- **Optional:** Intramuscular or subcutaneous vaccines

Ensure physical distancing during vaccination visits

Separate sick from well patients



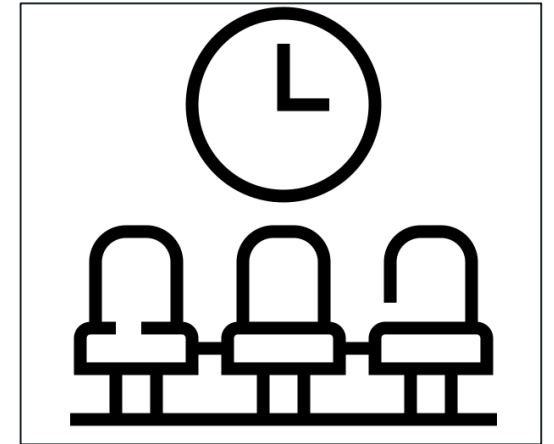
- Schedule well and sick visits at different times of the day.
- Place sick patients in different areas of the facility or different locations.

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.

Reassure patients through communication

- Communicate the importance of vaccination to patients and parents/caregivers.
- Explain the safety protocols and procedures of your office.



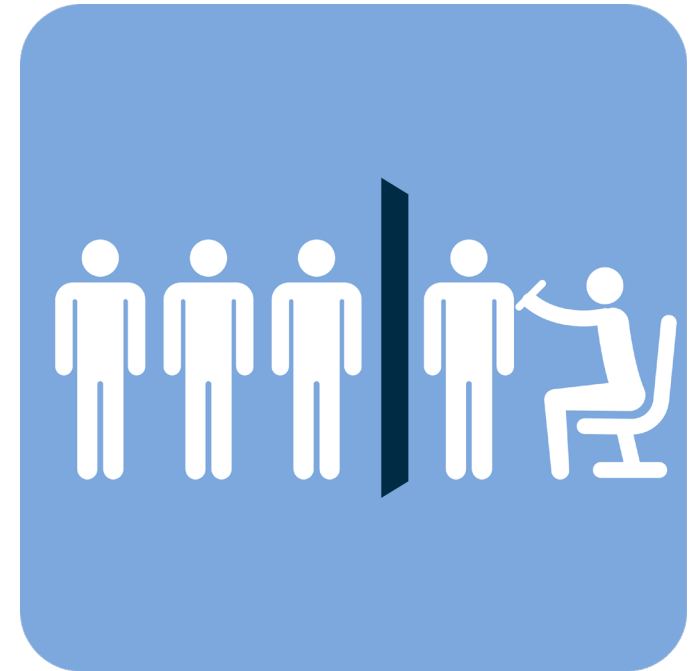
Alternative vaccination sites

- 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.



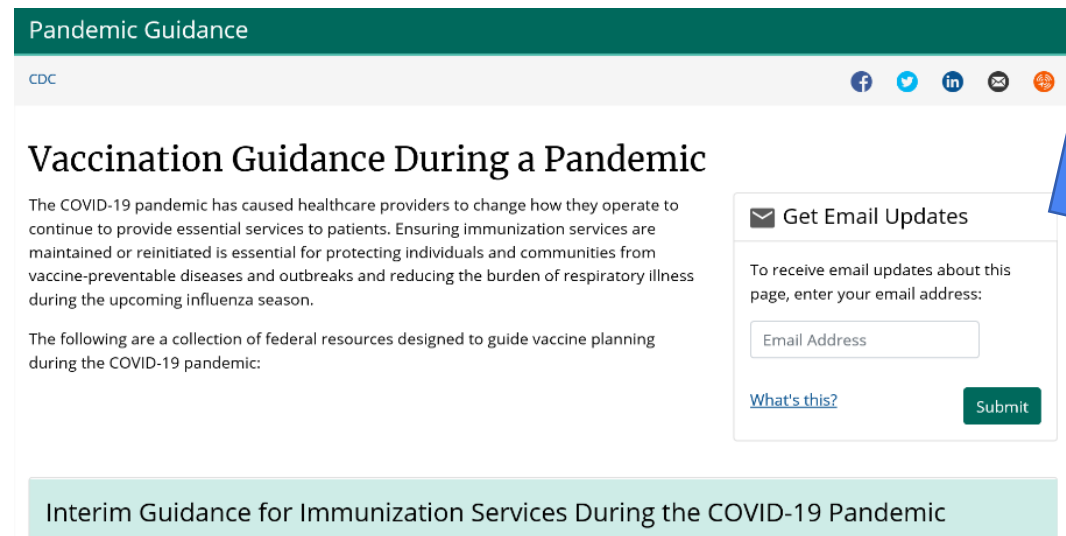
Co-Administration of Routine and COVID-19 Vaccines

Vaccine Co-Administration (Interim)

- COVID-19 vaccines should be administered alone, with a minimum interval of 14 days before or after administration of any other vaccines.
 - Shorter period acceptable if:
 - The benefits of vaccination are deemed to outweigh the potential unknown risks of vaccine co-administration:
 - › Tetanus-toxoid-containing vaccination as part of wound management
 - › Rabies vaccination for post-exposure prophylaxis
 - › Measles or hepatitis A vaccination during an outbreak
- OR**
 - To avoid vaccination barriers or delays to COVID-19 vaccination:
 - › In long-term care facility residents or health care personnel who received influenza or other vaccinations prior to/upon admission or onboarding
- If COVID-19 vaccines are administered within 14 days of another vaccine, doses do not need to be repeated for either vaccine.

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.



The screenshot shows the 'Pandemic Guidance' page from the CDC. The page has a green header with the title 'Pandemic Guidance' and the CDC logo. Below the header, there are social media icons for Facebook, Twitter, LinkedIn, Email, and YouTube. The main heading is 'Vaccination Guidance During a Pandemic'. The text below the heading states: 'The COVID-19 pandemic has caused healthcare providers to change how they operate to continue to provide essential services to patients. Ensuring immunization services are maintained or reinitiated is essential for protecting individuals and communities from vaccine-preventable diseases and outbreaks and reducing the burden of respiratory illness during the upcoming influenza season.' It then says: 'The following are a collection of federal resources designed to guide vaccine planning during the COVID-19 pandemic:'. On the right side of the page, there is a 'Get Email Updates' form. A large blue arrow points to this form. The form includes the text: 'To receive email updates about this page, enter your email address:'. Below this text is an 'Email Address' input field. At the bottom of the form, there is a 'Submit' button and a link that says 'What's this?'. At the bottom of the page, there is a light blue banner with the text: 'Interim Guidance for Immunization Services During the COVID-19 Pandemic'.

Pandemic Guidance

CDC

Vaccination Guidance During a Pandemic

The COVID-19 pandemic has caused healthcare providers to change how they operate to continue to provide essential services to patients. Ensuring immunization services are maintained or reinitiated is essential for protecting individuals and communities from vaccine-preventable diseases and outbreaks and reducing the burden of respiratory illness during the upcoming influenza season.

The following are a collection of federal resources designed to guide vaccine planning during the COVID-19 pandemic:

Get Email Updates

To receive email updates about this page, enter your email address:

Email Address

What's this?

Submit

Interim Guidance for Immunization Services During the COVID-19 Pandemic

Thank you

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