

A Focused Updated on Immunizations in People With HIV



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Financial Relationships With Ineligible Companies (Formerly Described as Commercial Interests by the ACCME) Within the Last 2 Years

Dr Johnson reported no relevant financial relationships with ineligible companies. (Updated October 27, 2025)

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Learning Objectives

After attending this presentation, learners will be able to:

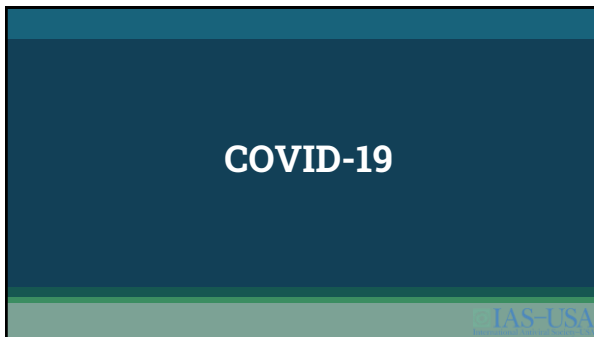
- Apply comprehensive immunization guidelines for adults with HIV
- Utilize current guidelines for COVID-19 vaccines from the Infectious Diseases Society of America (IDSA) and other sources
- Identify candidates for mpox vaccination
- Recognize the importance of assessing Hepatitis B status in the current treatment era
- Describe the current status of the US measles outbreak
- List approaches to counter vaccine hesitancy

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HIV Adult Immunization Schedule November 2025				
Vaccine	19-26 years	27-59 years	60-64 yrs	≥ 65 yrs
Influenza	1 dose annually			1 dose (high dose, recombinant, or adjuvanted)
Td/Tdap	1 dose of Tdap, then Td or Tdap booster every 10 years			
Varicella	2 doses 3 months apart (if CD4 ≥ 200 and no immunity to Varicella)			
HPV	3 doses (0, 2 and 6 months)	27-45 (discuss)		
Zoster Recombinant	RZV: 2 doses at 0 and 2-6 months			
MMR	1 or 2 doses (if CD4 ≥ 200 and no immunity)			
Pneumococcal	PCV20 or PCV21 alone or PCV-15 followed by PPSV23			See ACIP guidance
Hepatitis A	2 or 3 doses depending on the vaccine (if no immunity). 0 and 6-18 months. Check HAVAB 1 month after.			
Hepatitis B	2 or 3 doses depending on the vaccine (if no immunity). Hepisave-B preferred. Check HBsAb 1 month after.			
Meningococcal	If no prior vaccine, 2 doses of MenACWY 5-12 weeks apart. Boost every 5 years. Group B vaccine given in special circumstances (see ACIP guidance).			
Mpox	2 doses separated by 28 days for those at risk (discuss risk factors)			
RSV	Seasonal administration in pregnancy (32-36 weeks, Sept-Jan)		1 dose	1 dose
COVID-19	Monovalent 2025-2026 vaccine. Immunocompromised patients can get more than 1 dose.			Booster after 6 mos

 Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of immunity
 Recommended vaccination for adults with an additional risk factor or another indication
 Recommended vaccination based on shared clinical decision-making

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Currently Available COVID-19 Vaccines

There are 4 COVID-19 vaccines that are currently available:

- mRNA vaccine 2025-2026 formula (Comirnaty, Pfizer)
- mRNA vaccine 2025-2026 formula (Spikevax, Moderna)
- mRNA vaccine 2025-2026 formula (MNEXSPIKE, Moderna)
- Protein-based non-mRNA vaccine (Nuvaxovid, Novavax)

Guidelines generally do not specify which of these vaccines to receive.

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Factors Associated with the Risk of Severe Disease in COVID-19 are Common in People with HIV

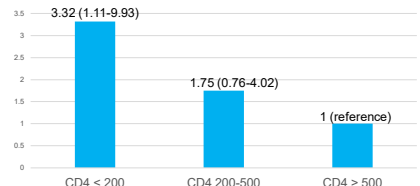
- Older age: ~50% of people with HIV are over 50
- Obesity: common in HIV, weight gain with ART
- Cardiovascular disease: HIV is a risk factor
- Lung disease: increased tobacco use in HIV
- Diabetes mellitus
- Cancer: increased non-AIDS cancers in HIV
- Gender: HIV more common in men in the U.S.
- Immunocompromising diseases and medications

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Outcomes of 286 Patients with HIV and COVID-19 in a Multicenter Registry

Odds ratio (95% CI) of severe outcome (ICU, mechanical ventilation, or death)



CD4 Count	Odds Ratio (95% CI)
CD4 < 200	3.32 (1.11-9.93)
CD4 200-500	1.75 (0.76-4.02)
CD4 > 500	1 (reference)

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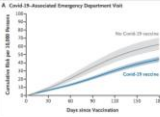
Dandachi D, et al. Clin Inf Dis Sept 9, 2020

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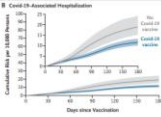
Association of 2024–2025 Covid-19 Vaccine with Covid-19 Outcomes in U.S. Veterans

- Observational study using electronic health records of the Department of Veterans Affairs
- A group who received COVID-19 and Flu vaccines on the same day were compared to a group who only received flu vaccine
- COVID-19 vaccine effectiveness against a composite outcome of ED visits, hospitalizations, and deaths was 29.3% (95% CI 19.1-39.2%)

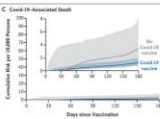
A. Covid-19-Associated Emergency Department Visits



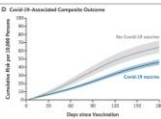
B. Covid-19-Associated Hospitalization



C. Covid-19-Associated Death



D. Covid-19-Associated Composite Outcome



M Cai, et al. DOI: 10.1056/NEJMoa2510226

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Interim Estimates of 2024–2025 COVID-19 Vaccine Effectiveness Among Adults Aged ≥18 Years — VISION and IVY Networks, September 2024–January 2025

- Vaccine effectiveness (VE) of the 2024–2025 COVID-19 vaccine was 33% against COVID-19–associated emergency department (ED) or urgent care (UC) visits among adults aged ≥18 years and 45%–46% against hospitalizations among immunocompetent adults aged ≥65 years, compared with not receiving a 2024–2025 vaccine dose.
- VE against hospitalizations in immunocompromised adults aged ≥65 years was 40%.

https://www.cdc.gov/mmwr/volumes/74/wr/mm7406a1.htm#T1_down

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COVID-19 Vaccines in People with HIV

- All adults and adolescents with HIV should get the COVID-19 vaccine regardless of their CD4 count or HIV viral load
- At this time, mRNA vaccines by Moderna and Pfizer are the primary immunizations in use; a monovalent vaccine by Novavax is also available
- Those with severe immunosuppression may have a diminished immune response to the vaccine and are candidates for additional doses
- People with HIV who are 65 years and older should consider a booster dose 6 months after the initial dose

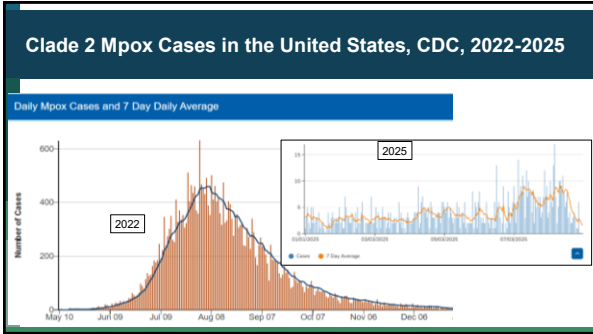
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MPOX

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Characteristics of Patients Hospitalized with Mpox during the 2022 U.S. Outbreak

- CDC consulted regarding 103 persons who were hospitalized with severe manifestations of mpox
- 22% of hospitalized patients required ICU care and 21% died
- 90 (87%) of these persons were people with HIV
 - 88% had a CD4 count ≤ 200 cells/mm³
 - Only 18% were on ART at the time of mpox diagnosis
 - All people with HIV who died had a CD4 count ≤ 200 cells/mm³
 - There were no deaths among people with HIV who were taking antiretroviral therapy

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Cholli P et al. CROI 2023. Seattle, Washington. Abstract 912.

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Recommendations for the Mpox Vaccine

- Known or suspected exposure to someone with mpox
- Sex in the past 2 weeks with someone diagnosed with mpox
- Gay, bisexual, transgender, nonbinary, or gender-diverse person who has a new STD or more than one sex partner in the last 6 months
- Sex at a commercial venue or in a geographic area where mpox transmission is occurring
- You have a sexual partner with any or of the above risks
- You have HIV or other causes of immune suppression and have had recent or anticipated exposure from any of the above scenarios

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Mpox Vaccine

- The available vaccine is a live, nonreplicating smallpox and mpox vaccine (Jynneos Bavarian Nordic)
- The preferred vaccine before mpox exposure and is safe in people with HIV
- The regimen is 2 doses 28 days apart
- Can be given post-exposure, ideally 4-14 days after exposure
- Should be given to those at risk for sexual exposure and those who request vaccine
- Although immunity to vaccination may wane, boosters are not currently recommended, except for certain people who work with orthopoxviruses in research or mpox diagnostic laboratories.
- The vaccine is expected to also protect against clade 1 strains

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

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Hepatitis B

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The Evolution of Antiretroviral Therapy and Hepatitis B Treatment

- The use of daily tenofovir-containing single-tablet regimens is currently common, and these regimens have activity against Hepatitis B virus
- There is increased use of 2-drug oral regimens with either no activity or inadequate activity against Hepatitis B
- Injectable cabotegravir-rilpivirine is not active against Hepatitis B virus and more options for injectable ART will likely become available in the future
- Vaccination to prevent Hepatitis B will be even more important

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DHHS OI Guidelines

Primary Vaccination Schedule

- Vaccine conjugated to CpG (Heplisav-B®) IM at 0 and 1 months;—a two-dose series can be used only when both doses given are Heplisav-B®.
- HepB vaccine IM (Engerix-B® 40 mcg [2 injections of 20 mcg each] or Recombivax HB® 20 mcg [2 injections of 10 mcg each]) at 0, 1, and 6 months (these doses are considered a "double dose," three-dose series); or
- Combined HepA and HepB vaccine (Twinrix®) 1 mL IM as a three-dose series (at 0, 1, and 6 months); or
- Anti-HBs should be obtained 1 to 2 months after completion of the vaccine series.

<https://clinicalinfo.hiv.gov/en/guidelines/hiv-clinical-guidelines-adult-and-adolescent-opportunistic-infections/hepatitis-b-07view=full>

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HepB-CpG (Heplisav-B®) Vaccine: PWH w/o Prior HBV Vax
ACTG 5379

BRIEF REPORT

Immunogenicity and Safety of Hepatitis B Virus (HBV) Vaccine With a Toll-Like Receptor 9 Agonist Adjuvant in HBV Vaccine-Naïve People With Human Immunodeficiency Virus

Shirley M. Wyles, Michael Wang, Eric Hughes, Nicholas Subongwan, Patrick Griffin, Stephen H. Adams, Jr., Gail "Katie" Rigg, Roger Perera, Jennifer C. Price, "Linda" Kiehl, "Charles" Brown, "Barbara" Brown, "Scott" and "Robert" E. Brown "The ACTG 5379 Study Team"

- n=74; single arm, open label
- Median CD4 625/µL
- 96% HIV RNA < 60 c/mL
- 66% Asian (Thailand)
- Median BMI = 23.5 kg/m2

Study week	<5 (LLQ)	5-9	10-99	100-1000	>1000 (ULQ)
Entry	100%	0%	0%	0%	0%
Week 4	63.0%	36.1%	0%	0%	0%
Week 8	11.3%	40.6%	48.1%	0%	0%
Week 12	5.4%	11.8%	82.8%	0%	0%
Week 24	1.3%	2.6%	94.4%	0%	0%
Week 28	0%	1.3%	28.6%	68.5%	0%

94.4%, 98.5 > 10 mIU/mL after 2 doses at 12, 24 wks
100% > 10 mIU/mL after 3 doses; 88% > 1000 mIU/mL

Slide credit: Melanie Thompson, IAS-USA

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Isolated Hepatitis B Core Antibody Positivity

HBsAg-negative, anti-HBc-positive, anti-HBs-negative

- Aside from false-positive results, this pattern may signify infection in the distant past with subsequent loss of anti-HBs.
- Most people with HIV with isolated anti-HBc are HBV DNA-negative and not immune to HBV infection; routinely checking HBV DNA is not recommended.
- However, such people should be vaccinated with one standard dose of HepB vaccine, and anti-HBs titers should be checked 1 to 2 months after vaccination.
- If the anti-HBs titer is >100 mIU/mL, no further vaccination is needed, but if the titer is <100 mIU/mL, a complete series of HepB vaccine should be completed and followed by anti-HBs testing.

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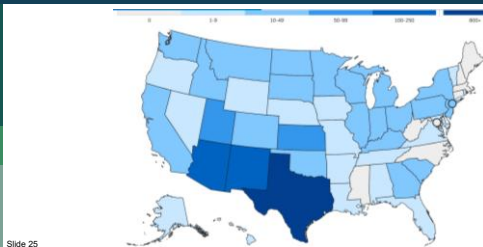
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Measles

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Map of Measles Cases in 2025 (As of Nov 12, 2025)



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Measles in the U.S. in 2025

- As of November 12, 2025, there have been 1,723 confirmed cases of measles reported in 2025 (there are additional probable cases)
- Confirmed cases reported from 42 states
- 66% of cases in persons 19 and under
- 92% of cases either unvaccinated or of unknown vaccination status
- 12% of cases hospitalized
- 3 confirmed deaths

<https://www.cdc.gov/measles/data-research/index.html>

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MMR Vaccination

- There are two available MMR vaccines in adults
- Dosing is 2 doses at least 28 days apart
- In the general population, the vaccine is 97% effective.
- Measles cases in vaccinated persons are milder
- The vaccine is contraindicated in HIV+ persons with a CD4 count < 200 mm³

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Presumptive evidence of immunity can be established in any of the following ways

1. Written documentation of adequate vaccines for measles, mumps, and rubella
2. Laboratory evidence of immunity
3. Laboratory confirmation of disease
4. Birth before 1957.
 - Although birth before 1957 is considered acceptable evidence of immunity for healthcare personnel in routine circumstances, healthcare facilities should consider vaccinating healthcare personnel born before 1957 who lack laboratory evidence of immunity or laboratory confirmation of disease.

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Vaccine Hesitancy

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Determinants of Vaccine Hesitancy

- Conspiracy theories
- Negative information from media
- Religious fatalism
- Violation of human rights
- Vaccine safety
- Vaccines not effective
- Lack of information

- Mistrust in health institutions
- Healthy bodies
- Social norms
- Vaccination not a priority
- Too many vaccines
- Approved too fast
- Against vaccination in general

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Determinants of Vaccine Hesitancy

- Alternative prevention methods
- Diseases are beneficial
- Fear of injection
- Previous negative experiences
- Humans too weak to fight vaccines
- Responsibility if something bad happens

- Lack of Access
- Financial cost
- Lack of recommendation from providers
- Vaccine novelty
- Inconsistent advice from providers
- Need for shared decision making

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Estimates of COVID-19 Attributable Deaths, Hospitalizations, and Infections Averted by the U.S. Vaccination Program Between December 12, 2020, and November 30, 2022

	Averted Number	95% Credible Interval
Deaths	3,255,656	3,088,126 to 3,410,112
Hospitalizations	18,585,131	17,780,337 to 19,355,830
Infections	119,851,779	112,698,238 to 127,129,565

Source: Meagan C. Fitzpatrick et al., "Two Years of U.S. COVID-19 Vaccines Have Prevented Millions of Hospitalizations and Deaths," To the Point (blog), Commonwealth Fund, Dec. 13, 2022. <https://doi.org/10.26099/what-fund>

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Approaches to Vaccine Hesitancy

- Provide strong recommendations
- Ask open-ended questions about the hesitancy
- Acknowledge concerns and address specific reasons for hesitancy
- Provide personalized education
- Review the scientific evidence
- Explain the collective benefits of vaccines
- Discuss at multiple visits

A strong and close provider-patient relationship is important and can help to overcome vaccine hesitancy!

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Summary

- Vaccines play an important role in HIV primary care and can prevent infections and some cancers.
- Despite declines in morbidity and mortality, regular COVID-19 vaccination remains an important part of HIV care.
- Mpox vaccination should be considered in people at risk despite the lower incidence.
- Assessing Hepatitis B status is important, especially given the growth in the use of ART not fully active against Hepatitis B virus.
- Ensuring immunity to measles is important given the current outbreaks.
- The DHHS OI guidelines, IDSA, and some state and local guidelines are good alternative sources of advice for vaccines in people with HIV.

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Q and A Session



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