
What's New with Flu, RSV, and COVID-19 Vaccines?

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Outline

- Introduction
- Epidemiology
- Vaccines for Influenza, COVID-19, and RSV
- Addressing Patient Vaccine Concerns

Introduction: HIV and Vaccines

- HIV causes defects in cell-mediated immunity, B-cell function, and antibody responses resulting in an increased risk of infections.
- Typical levels of protection after immunization:
 - Persons with advanced HIV: limited protection
 - Persons receiving HIV treatment: adequate protection
- Most vaccines are safe for people with HIV but:
 - Most live virus vaccines are contraindicated.
 - Some vaccines have special dosing recommendations.

Immunization Recommendations for People with HIV

Immunization Recommendations for Adults with HIV¹

Vaccines	Recommended Schedules ¹	Additional Considerations
COVID-19	1 updated (2023–24) vaccine, regardless of prior vaccine history. See COVID-19 Vaccine Timing Guide	Advanced HIV infection: ≥ 1 updated vaccine(s). Additional doses based on clinical factors ² .
Hepatitis A (HepA) ³	Havrix[®], Vaqta[®] : 2 doses, 6 months apart Twinrix[®] (HepA/HepB): 3 doses 0, 1, and 6 months apart	Check titers ≥ 1 month after series completion. If inadequate immune response, consider revaccination after CD4 ≥ 200 cells/mm ³ .
Hepatitis B (HepB) ⁴	Engerix-B[®], PreHevbrio[®], Recombivax HB[®] : 3 doses 0, 1, and 6 months apart Hepplisav-B[®] : 2 doses, 1 month apart Twinrix[®] (HepA/HepB): 3 doses, 0, 1, and 6 months apart	Consider double-dose strategy if using Engerix-B [®] or Recombivax HB [®] . Check titers ≥ 1 month after series completion. If inadequate immune response, consider revaccination after CD4 ≥ 200 cells/mm ³ .
Human papillomavirus (HPV)	Gardasil 9[®] : 3 doses, 0, 1-2, and 6 months apart for ages 15-45 years	Not routinely recommended for ages 27–45 years but some people with HIV in this age range may benefit. Use shared clinical decision-making.
Influenza	1 dose annually	Live attenuated vaccine is contraindicated.
Measles, mumps, rubella (MMR)	M-M-R[®] II, Priorix[®] : 2 doses, 28 days apart ⁵	Contraindicated if CD4 < 200 cells/mm³.
Meningococcal A, C, W, Y conjugate (MenACWY)	MenQuadfi[®], Menveo[®] : 2 doses, 2 months apart; booster every 5 years	Meningococcal cases increased among people with HIV 2017–2022; vaccine coverage remains low.
Meningococcal B (MenB)	Bexsero[®] : 2 doses, 1 month apart Trumenba[®] : 2 or 3 doses, at 0, 1-2, and 6 months	Not routinely indicated for all adults with HIV. ⁶
Mpox virus ⁷	JYNNEOS[®] : 2 doses, 1 month apart	Can be given intradermally or subcutaneously.
Pneumococcal (PCV15, PCV20, or PPSV23)	Prevnar 20[®] (PCV20): 1 dose <i>OR</i> Vaxneuvance[®] (PCV15) + Pneumovax 23[®] (PPSV23): > 2 months apart	Consider delay of PPSV23 until CD4 ≥ 200 cells/mm ³ .
Respiratory Syncytial Virus (RSV)	ABRSYVO[®], AREXVY[®] : 1 dose	Not routinely recommended for all people with HIV; may be offered to people with HIV ages ≥ 60 years. Use shared clinical decision-making.
Tetanus, diphtheria, pertussis (Tdap/Td)	1 dose Tdap (Boostrix[®], Adacel[®]), then Td (Tenivac[®], TDVAX[®]) <i>OR</i> Tdap booster every 10 years	During each pregnancy, give one dose of Tdap. ⁸
Varicella (VAR)	Varivax[®] : 2 doses, 28 days apart ⁹	Contraindicated if CD4 < 200 cells/mm³.
Zoster (RZV)	Shingrix[®] : 2 doses for ages > 19 years, 2 months apart	Consider delay of Shingrix until CD4 > 200 cells/mm ³ .

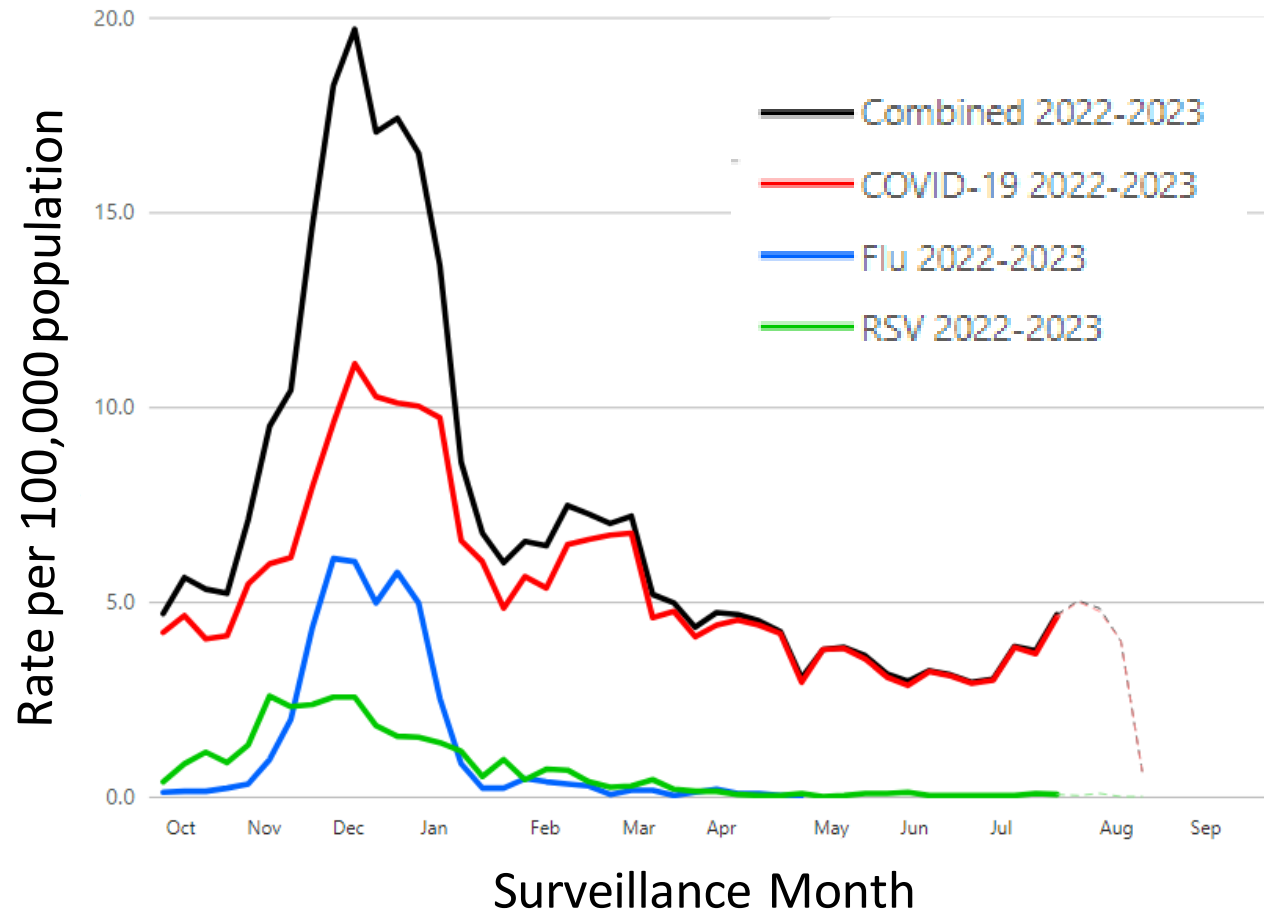
HIV and the Vaccine Schedule

- HIV clinical care presents ongoing opportunities to address vaccination.
- Overall vaccination rates are good among people with HIV.
- Many opportunities for improvement; especially to address disparities by race/ethnicity.
- Vaccine fatigue and hesitancy is another important factor; can necessitate an in-depth conversation on the benefits of vaccination.

4.2. Receipt and Quality of HIV Care, Past 12 Months - Medical Monitoring Project, CA, 2020			
	Number ^a	Percentage ^b	95% CI ^c
<i>Received Influenza Vaccination, Past 12 Months</i>			
Yes	153	77.5%	71.5–83.4

Overlapping Seasonality of Flu, COVID-19, and RSV

Weekly Rates of Respiratory Virus-Associated Hospitalizations in California, 2022-2023



Influenza Season: 2022-23 Burden Estimates

CDC estimates* that, from **October 1, 2022** through **April 30, 2023**, there have been:

27 – 54 million
flu **illnesses**



12 – 26 million
flu **medical visits**



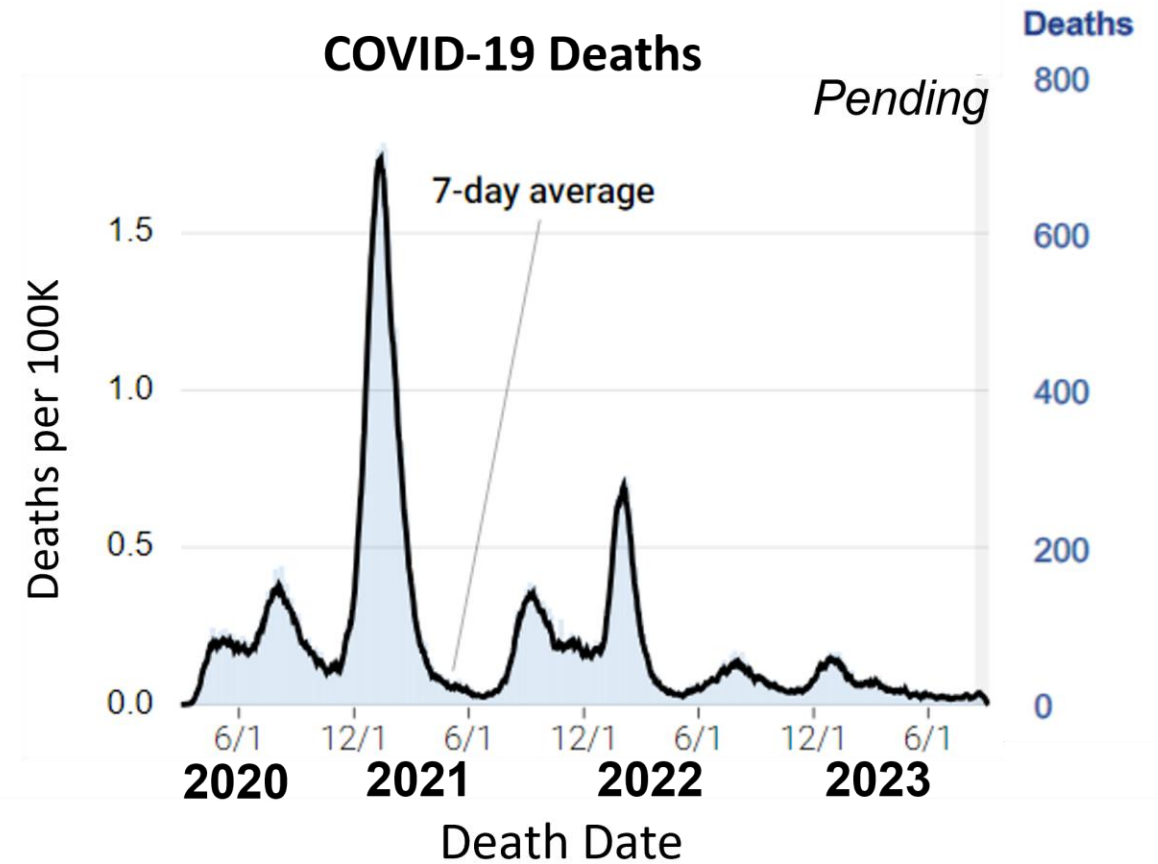
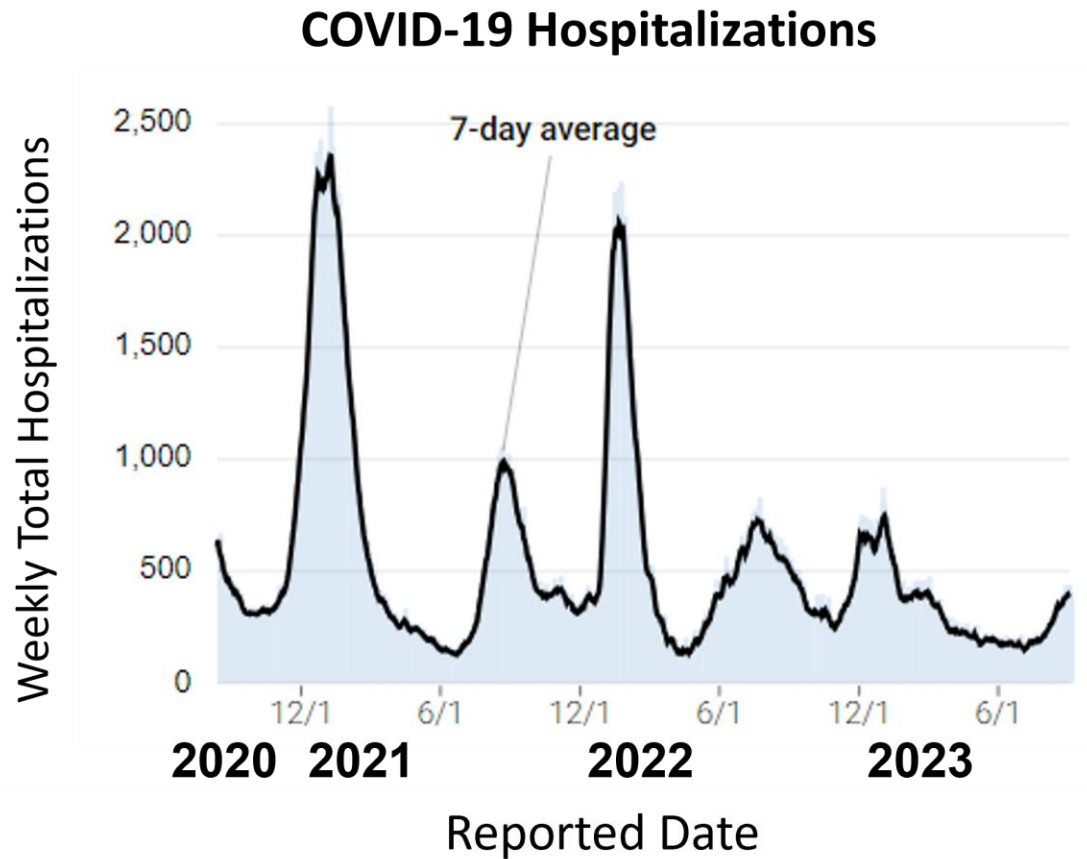
300,000 – 650,000
flu **hospitalizations**



19,000 – 58,000
flu **deaths**

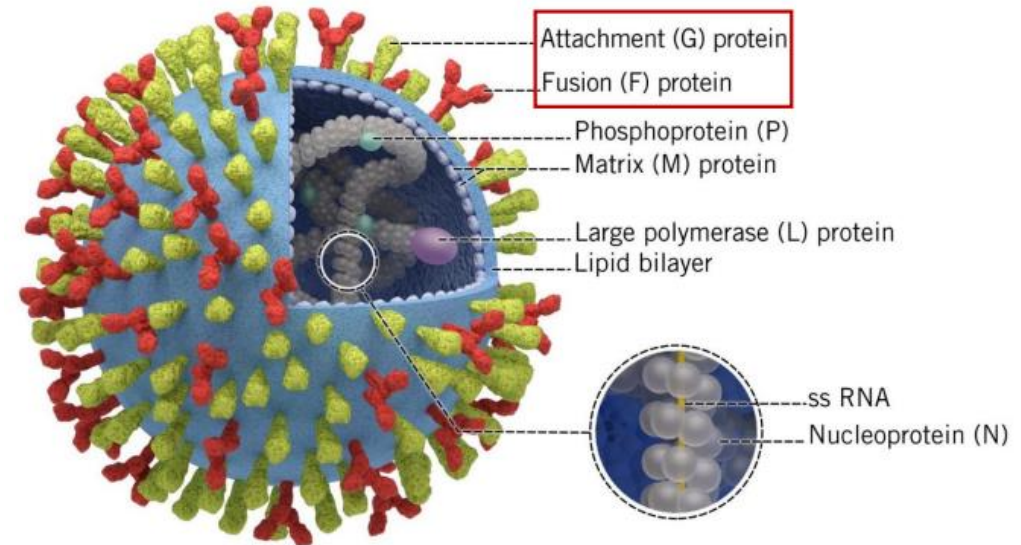


All-Time COVID-19 Trends in California



RSV Overview

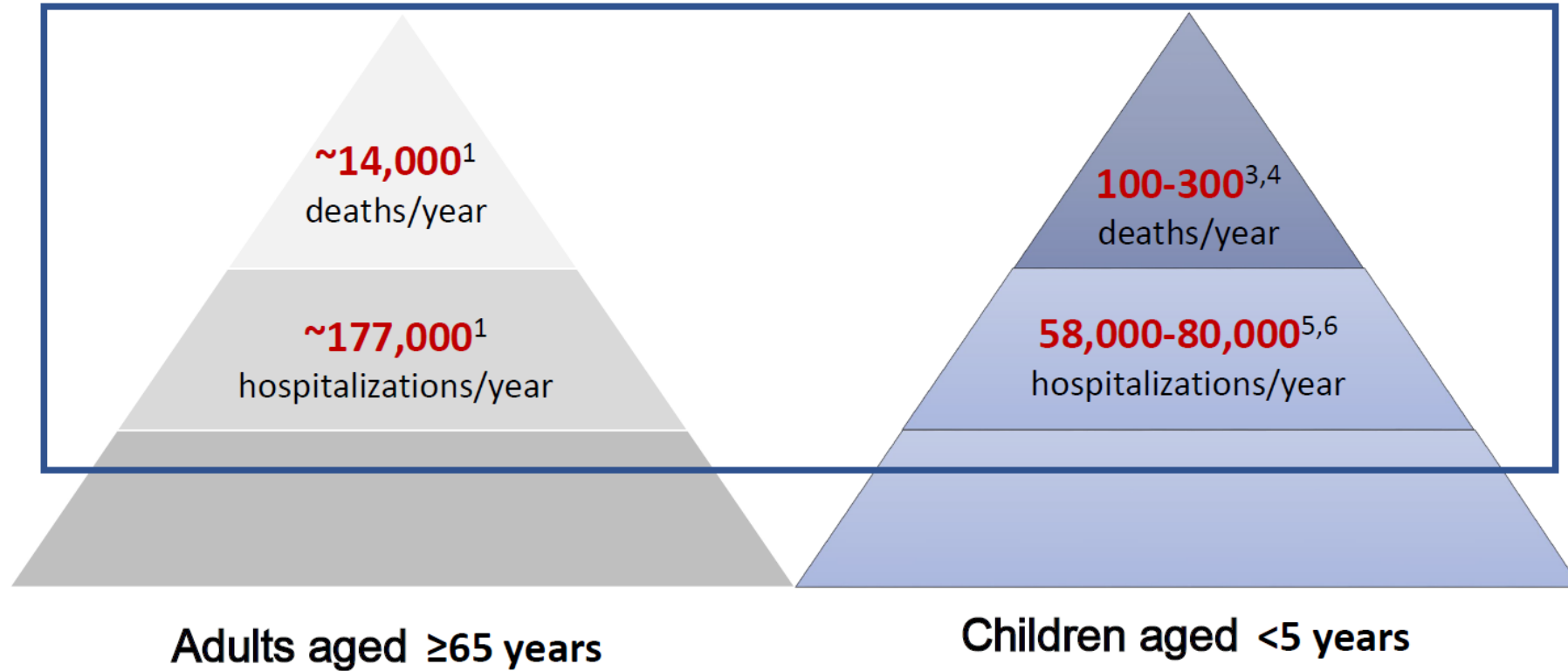
- Common respiratory virus that usually causes mild, cold-like symptoms.
- Infants and older adults are more likely to develop severe RSV and need hospitalization.
- One of the most common causes of childhood illness and frequent cause of respiratory infections in older adults
- Lower awareness of RSV in adults among healthcare providers and the public
- RSV testing often not performed in adults
- No specific recommended treatment



[CDC RSV Informational Page](#)

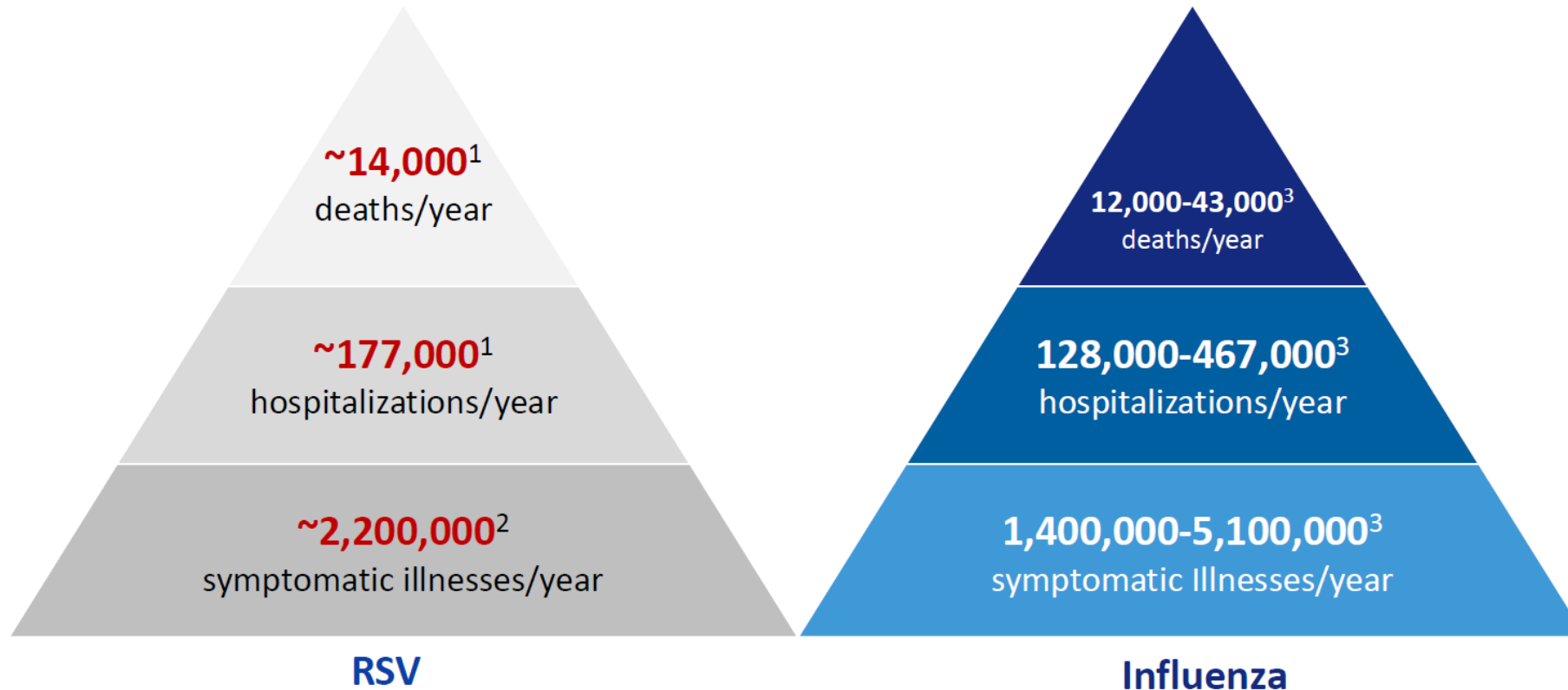
[CDC ACIP Meeting June 23, 2022 – Dr. Thornburg](#)

Burden of RSV Hospitalization and Death Among Older Adults and Children <5 years



¹Falsey et al, NEJM (2005); ²Adapted from Falsey et al, NEJM (2005); ³Thompson et al, JAMA, 2003; ⁴Hansen et al, JAMA Network Open, 2022; ⁵Hall et al, NEJM, 2009; ⁶McLaughlin et al, J Infect Dis, 2022

Similar Burden of RSV and Influenza Among Adults ≥ 65 years



¹Falsey et al, NEJM (2005); ²Adapted from Falsey et al, NEJM (2005); ³Estimated Influenza Disease Burden 2015-2016 through 2019-2020, CDC (2022): <https://www.cdc.gov/flu/about/burden/past-seasons.html>

[Havers presentation: ACIP June 23, 2022](#)

People with HIV and Flu, COVID-19, and RSV

- People with HIV have a higher risk of developing serious complications from influenza, COVID-19, and RSV.
- Vaccines can reduce risk of severe illness
 - Influenza and COVID-19 vaccines recommended for all adults, including people with HIV.
 - RSV vaccines now available for people with HIV who are 60 years and older.

[Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2023–24 Influenza Season](#)

[Risk Factors for SARS-CoV-2 Infection and Severe Outcomes Among People With Human Immunodeficiency Virus](#)

[Respiratory syncytial virus in adults with severe acute respiratory illness in a high HIV prevalence setting](#)

CDC 2023-24 Influenza Vaccine Guidance

Highlighted updates:

- 2023-24 Influenza Vaccine Composition
 - All vaccines are quadrivalent
 - All vaccines contain hemagglutinin derived from two A and two B viruses
- People with egg allergy may receive any influenza vaccine appropriate for their age and health status; additional safety measures are no longer recommended

Influenza Vaccine Reminders

- All persons 6 months of age and older are recommended to get an annual influenza vaccine.
- High-dose, adjuvanted, or recombinant influenza vaccines are **preferred** for adults ages 65 years and older. If none of these three vaccines is available, then any other age-appropriate influenza vaccine should be used.
- Live, attenuated influenza vaccine is contraindicated in people with HIV.
- September and October are the best times for most people to get vaccinated.



[Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2023–24 Influenza Season](#)

CDC Recommends Updated 2023-2024 COVID-19 Vaccines for Everyone 6 Months and Older

- The 2023–2024 formulation of COVID-19 vaccines has been updated to a **monovalent** vaccine based on the Omicron XBB.1.5 sublineage of SARS-CoV-2
- Receiving an updated COVID-19 vaccine is safe and can restore protection against infections and severe disease
- **Stop using formulations that are no longer authorized:**
 - Bivalent mRNA COVID-19 vaccine (Original and Omicron BA.4/BA.5)
 - Novavax COVID-19 vaccine, adjuvanted (Original)

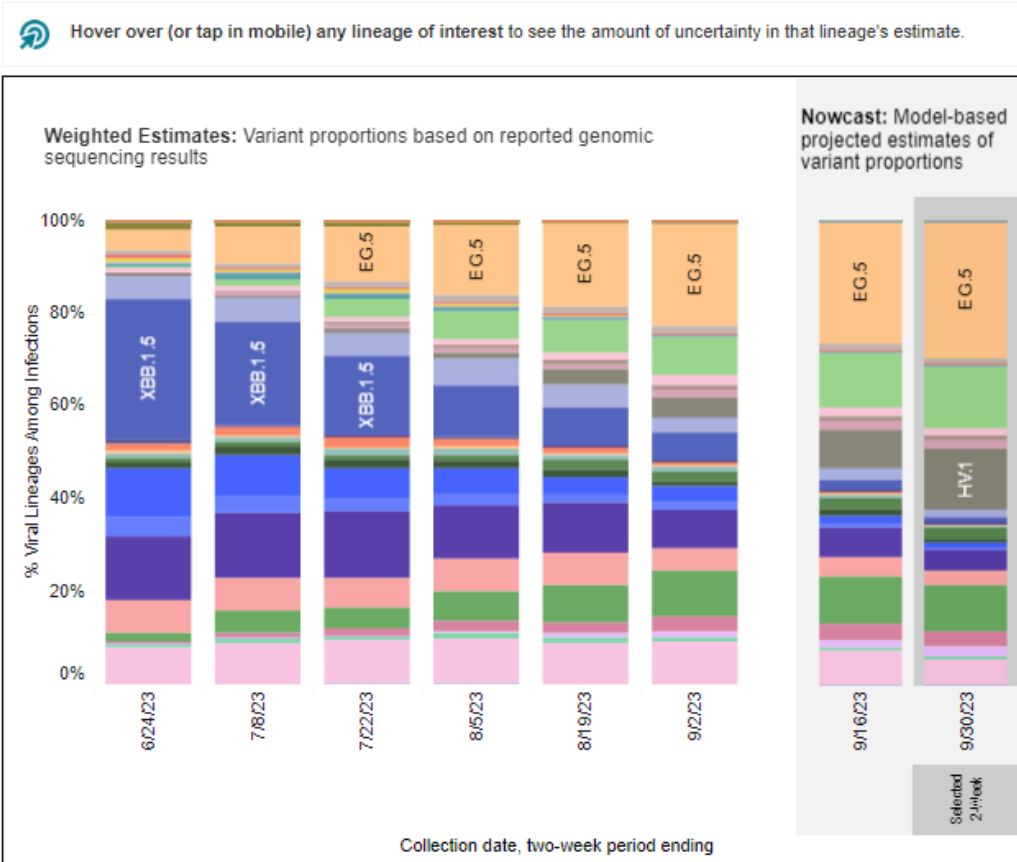
[CDC Press Release 9/12/23](#)

[FDA Press Release 9/11/23](#)

[FDA Press Release 10/3/23 \(Novavax\)](#)

Variants and COVID-19 Vaccines

Weighted and Nowcast Estimates in United States for 2-Week Periods in 6/11/2023 – 9/30/2023



- EG.5 is now the dominant circulating variant and is an Omicron sub-lineage variant closely related to XBB.1.5
- 2023-2024 COVID-19 vaccine formulation contains XBB.1.5 variant and is expected to provide protection against EG.5.
- CDC also monitoring BA.2.86; recent laboratory data suggests vaccines will provide protection

[CDC Variant Tracker](#) | [World Health Organization, EG.5 Risk Evaluation 9/21/23](#)
[Update on SARS-CoV-2 Variant BA.2.86 Being Tracked by CDC 9/15/23](#)

General Clinical Recommendations

- **Ages 6 months through 4 years**

- Unvaccinated: 2 doses of updated Moderna COVID-19 vaccine or 3 doses of updated Pfizer-BioNTech COVID-19 vaccine
- Previously vaccinated: 1 or 2 doses of updated mRNA vaccine depending on number of previous doses

- **Ages 5 years and older**

- Receive 1 dose of updated (2023–2024 Formula) mRNA COVID-19 vaccine, regardless of previous vaccination history
- No additional doses recommended for people 65+ at this time
- *Guidance expected soon for updated Novavax COVID-19 vaccine*

Clinical Recommendations for Persons with Immunocompromise*

- **Persons with moderate or severe immunocompromise**
 - Unvaccinated: People 6 months of age and older are recommended to receive 3 homologous doses of either updated Pfizer-BioNTech or Moderna COVID-19 vaccine
 - Previously vaccinated: 1 or 2 doses of updated mRNA vaccine depending on number of previous doses
 - May receive 1 or more additional updated mRNA COVID-19 vaccine doses, at least 2 months after their last COVID-19 dose

[*Description of moderate and severe immunocompromising conditions and treatment](#)

[CDC Interim Clinical Considerations for Use of COVID-19 Vaccines in the United States](#)

Updated COVID-19 Vaccine Timing Guide 2023-2024

COVID-19 Vaccine Timing 2023-24 - Routine Schedule

Age*	Vaccine	If unvaccinated:	If had any prior doses, give 2023-24 doses:
6 months-4 years†	Pfizer-Infant/Toddler	1st Dose → 3-8 weeks → 2nd Dose → ≥8 weeks → 3rd Dose	If 1 prior dose, then: 3-8 weeks 1, ≥8 weeks 2 If ≥2 prior doses, then: ≥8 weeks 1
	Moderna-Pediatric*	1st Dose → 4-8 weeks → 2nd Dose	If 1 prior dose, then: 1 month 1 If ≥2 prior doses then: 2 months 1
5-11 years	Moderna-Pediatric*	1 Dose	If 1 or more prior doses (of any of the 4 brands), then*: ≥2 months Updated 2023-24 Formulation Moderna/Pfizer
	Pfizer-Pediatric	1 Dose	
12+ years	Pfizer-Adol/Adult (Comirnaty)	1 Dose	If 1 or more prior doses (of any of the 4 brands), then*: ≥2 months Updated 2023-24 Formulation Moderna/Pfizer
	Moderna-Adol/Adult (Spikevax)	1 Dose	
	Novavax (2021)	1st Dose → 3-8 weeks → 2nd Dose 2023-24 formulation coming soon!	

* See CDC recommendations for children transitioning from a younger to older age group
 † Children 6 months - 4 years should receive the same brand of the updated vaccine as the prior doses they received.
 ** An 8-week interval may be preferable for some people, especially for males 12-39 years.
 ‡ All Moderna doses 6 months - 11 years are 0.25 mL (25 mcg).
 ^ Janssen (J & J) vaccine has been deauthorized. Follow schedule for 12+ years for any prior doses.

View [Interim Clinical Considerations for Use of COVID-19 Vaccines](#) for details. Schedule is subject to change.

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COVID-19 Vaccine Timing 2023-24 if Moderately/Severely Immunocompromised

Age	Vaccine	If unvaccinated:	If had any prior doses give 2023-24 doses:
6 months-4 years	Pfizer-Infant/Toddler	1st Dose → 3 weeks → 2nd Dose → ≥8 weeks → 3rd Dose → ≥2 months → Optional Dose*	1 prior dose: 3 w 1, ≥8 w 2, ≥2 m Optional Dose* ≥2 prior doses: ≥8 w 1, ≥2 m Optional Dose*
	Moderna-Pediatric	1st Dose → 4 weeks → 2nd Dose → ≥4 weeks → 3rd Dose → ≥2 months → Optional Dose*	1 prior dose: 4 w 1, ≥4 w 2, ≥2 m Optional Dose* 2 prior doses: ≥4 w 1, ≥2 m Optional Dose*
5-11 years	Moderna-Pediatric	1st Dose → 4 weeks → 2nd Dose → ≥4 weeks → 3rd Dose → ≥2 months → Optional Dose* (Moderna/Pfizer)	≥3 prior doses: ≥8 w 1, ≥2 m Optional Dose* (for ages 5+ yrs, Pfizer dose is also OK)
	Pfizer-Pediatric	1st Dose → 3 weeks → 2nd Dose → ≥4 weeks → 3rd Dose → ≥2 months → Optional Dose* (Moderna/Pfizer)	1 prior dose: 3 w 1, ≥4 w 2, ≥2 m Optional Dose* (Moderna/Pfizer) 2 prior doses: ≥4 w 1, ≥2 m Optional Dose* (Moderna/Pfizer)
12+ years	Pfizer-Adol/Adult (Comirnaty)	1st Dose → 3 weeks → 2nd Dose → ≥4 weeks → 3rd Dose → ≥2 months → Optional Dose* (Moderna/Pfizer)	≥3 prior doses**: ≥8 w 1, ≥2 m Optional Dose* (Moderna/Pfizer)
	Moderna-Adol/Adult (Spikevax)	1st Dose → 4 weeks → 2nd Dose → ≥4 weeks → 3rd Dose → ≥2 months → Optional Dose* (Moderna/Pfizer)	1 prior dose: 4 w 1, ≥4 w 2, ≥2 m Optional Dose* (Moderna/Pfizer) 2 prior doses: ≥4 w 1, ≥2 m Optional Dose* (Moderna/Pfizer) ≥3 prior doses**: ≥8 w 1, ≥2 m Optional Dose* (Moderna/Pfizer)
	Novavax (2021)	2023-24 formulation coming soon! 1st Dose → 3 weeks → 2nd Dose → ≥8 weeks → Updated 2023-24 Formulation Moderna/Pfizer → ≥2 months → Optional Dose* (Moderna/Pfizer)	If 1 or more prior doses, then: ≥8 weeks Updated 2023-24 Formulation Moderna/Pfizer → ≥2 months Optional Dose* (Moderna/Pfizer)

* An optional dose may be given ≥2 months after the last dose. Further doses may be given at the healthcare provider's discretion. See [Table 2](#) for vial and dosage.
 ** Ages 5+ years may be given Moderna or Pfizer after ≥3 prior doses.

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COVID-19 Vaccine Product Guide - Updated

COVID-19 Vaccine Product Guide

Check vaccine labels and [FDA materials](#) before use to avoid mix-ups.
EUA fact sheets supersede info on vials and carton. Refer to [CDC Product Guide](#) for more information.

	Pfizer		
	Infant/Toddler 6 months-4 years	Pediatric 5-11 years	Comirnaty 12+ years
	2023-24 Formula	2023-24 Formula	2023-24 Formula

Packaging	Yellow Cap	Blue Cap	Gray Cap
Doses Per Vial	3 doses	1 dose	1 dose
Carton Size	30 doses	10 doses	10 doses
NDC-Unit of Use (vial)	59267-4315-01	59267-4331-01	00069-2362-10
CVX Code	302	301	300
CPT Code	91318	91319	91320
Program Availability	VFC	VFC	VFC, BAP
Min. Standard Order*	30 doses	10 doses	10 doses

Storage Limits Before Puncture: Label vaccine with expiration and use-by dates.

ULT	Until expiration date at -90°C to -60°C (-130°F to -76°F)
Thermal Shipper	
Freezer	
Refrigerator	Up to 10 weeks at 2° to 8°C (36°F to 46°F). Write the date on carton—not to exceed expiration.
Expiration Date	Check the label or Pfizer product website .

Administration

Diluent (supplied)	1.1 mL per vial	Do not dilute	Do not dilute
Dose Volume & Dose	0.3 mL 3 mcg dose	0.3 mL 10 mcg dose	0.3 mL 30 mcg dose
Refrigerator Thaw Time (Do not refreeze)	2 hours in carton (2° to 8°C/36°F to 46°F)		
Room Temp Thaw Time (Do not refreeze)	Vial: 30 minutes at up to 25°C (77°F)		
Total Time at Room Temp	Up to 12 hours (including thaw time) at 8°C to 25°C (46°F to 77°F)		

Storage Limits After Puncture (Multi-dose vials): Record puncture and use-by time on vial label.

Use-By Limit (Discard Time After 1st Puncture)	Discard 12 hours after dilution. Keep at 2°C to 25°C (35°F to 77°F)	N/A	N/A
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* Orders for privately purchased vaccines may have different order minimums.

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COVID-19 Vaccine Product Guide

Check vaccine labels and [FDA materials](#) before use to avoid mix-ups.
EUA fact sheets supersede info on vials and carton. Refer to [CDC Product Guide](#) for more information.

	Moderna			Novavax
	Pediatric 6 months-11 years	Spikevax 12+ years	Spikevax 12+ years	Adol/Adult 12+ years
	2023-24 Product	2023-24 Product	2023-24 Product	2021 Product (new product coming soon)

Packaging	Dark Blue Cap	Dark Blue Cap	Syringe
Doses Per Vial	1 dose	1 dose	1 dose
Carton Size	10 doses	10 doses	10 doses
NDC-Unit of Use (vial)	80777-0287-07	80777-0102-04	80777-0102-01
CVX Code	311	312	312
CPT Code	91321	91322	91322
Program Availability	VFC	VFC, BAP	TBD
Min. Standard Order*	10 doses	10 doses	TBD

Storage Limits Before Puncture: Label vaccine with expiration and use-by dates.

ULT	
Thermal Shipper	
Freezer	Until expiration at -50°C to -15°C (-58°F to 5°F)
Refrigerator	Up to 30 days (not to exceed expiration date) at 2-8°C (36-46°F)
Expiration Date	Check Moderna product website or QR code.

Administration

Diluent (supplied)	Do not dilute		
Dose Volume & Dose	0.25 mL 25 mcg	0.5 mL 50mcg	0.5 mL 50mcg
Refrigerator Thaw Time (Do not refreeze)	45 minutes for single dose vial or 1 hour for syringe at 2°C to 8°C (36°F to 46°F). Let stand at room temp for 15 min before administering.		
Room Temp Thaw Time (Do not refreeze)	15 minutes for single dose vial or 45 minutes for syringe at 15° to 25°C (59° to 77°F)		
Total Time at Room Temp	Store up to 24 hours at 8°C to 25°C (46°F to 77°F)		

Storage Limits After Puncture (Multi-dose vials): Record use-by time on vial.

Use-By Limit (Discard Time After 1st Puncture)	N/A. Discard after single use.
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* Orders for privately purchased vaccines may have different order minimums.

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COVID-19 Vaccine Product Guide

Do Not Use Deauthorized Products:
Use only COVID-19 vaccine products updated for 2023-24.

Pfizer					
Infant/Toddler 6 months-4 years	Pediatric 5-11 years		Adol/Adult 12+ years		

Moderna				
Infant/Toddler 6 months-5 years	Infant/Toddler 6 months-5 years	6 months+	Pediatric 6-11 years	Adol/Adult 12+ years

Janssen (J&J)

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RSV Prevention Products

Adult Vaccines, ≥60 years

- **RSVPreF** (Abrysvo, Pfizer)
- **RSVPreF3 + Adjuvant** (Arexvy, GSK)

Infants and Young Children

- **Nirsevimab** (Beyfortus, Sanofi): monoclonal antibody for all infants and high-risk young children
- **Palivizumab** (Synagis, Sobi): monoclonal antibody for high-risk infants and young children
- **RSVPreF** (Abrysvo, Pfizer): prenatal vaccine at 32 to 36 weeks of pregnancy to protect infants

Older Adult RSV Vaccine Recommendations

- Adults aged 60 years and older may receive a single dose of RSV vaccine, using shared clinical decision-making.
- Give as early as vaccine supply becomes available and continue to offer vaccination to eligible adults who remain unvaccinated.
- Co-administration of RSV vaccines with other adult vaccines during the same visit is acceptable.

[CDC RSV Media Statement June 29, 2023](#)

[MMWR: Use of RSV Vaccines in Older Adults: ACIP Recommendations](#)

RSV Vaccines Approved for Adults Ages \geq 60 Years

RSVPreF3 (Arexvy, GSK)

- RSV vaccine, adjuvanted
 - Antigen: 120ug RSVpreF3
 - Adjuvant: AS01E[^]
- 1 dose
- Intramuscular injection
- Efficacy: 82.6% reduction in risk of RSV-associated lower respiratory tract disease*
- People with HIV excluded from trials

RSVPreF (Abrysvo, Pfizer)

- RSV vaccine, no adjuvant
 - Antigen: 60ug RSVpreF A and 60ug RSVpreF B
- 1 dose
- Intramuscular injection
- Efficacy: 85.7% reduction in risk of RSV-associated lower respiratory tract disease* with \geq 3 symptoms
- People with well-controlled HIV included in trials, but data not yet available

*Lower respiratory tract disease signs/symptoms include cough, sputum, and difficulty breathing.

[^]Similar to adjuvant used for Shingrix (half dose of same components)

[AREXVY FDA Product Insert](#) | [ABRYSVO FDA Product Insert](#)

RSV Vaccines for Older Adults: Safety

RSVPreF3 (Arexvy, GSK)

- Safety:
 - injection site pain (60.9%)
 - fatigue (33.6%)
 - myalgia (28.9%)
 - headache (27.2%)
 - arthralgia (18.1%)
- Serious adverse events under monitoring:
 - Guillain-Barré Syndrome (GBS)
 - Acute disseminated encephalomyelitis (ADEM)
 - Supraventricular arrhythmias

RSVPreF (Abrysvo, Pfizer)










- Safety:
 - pain at the injection site (10.5%)
 - fatigue (15.5%)
 - muscle pain (10.1%)
 - headache (12.8%)
- Serious adverse events under monitoring:
 - Guillain-Barré Syndrome (GBS) and other immune-mediated demyelinating conditions
 - Supraventricular arrhythmias

Shared Clinical Decision-Making Guidance




- The decision to vaccinate should be based on a discussion between the provider and the patient, which might be guided by:
 - the patient's risk for disease and their characteristics, values, and preferences
 - the provider's clinical discretion
 - the characteristics of the vaccine.
- Consider factors associated with severe RSV-associated disease:
 - chronic medical conditions
 - frail or who are of advanced age*
 - Residents of nursing homes and long-term care facilities*

*limited enrollment of these populations in clinical trials

Underlying medical conditions associated with increased risk for severe RSV disease include:

 Chronic lung disease (e.g., COPD and asthma)	 Chronic kidney disease	 Moderate or severe immunocompromise
 Chronic cardiovascular disease (e.g., CHF and CAD)	 Chronic liver disease	 Chronic hematologic disorders
 Chronic or progressive neurologic or neuromuscular conditions	 Diabetes Mellitus	 Any underlying <i>condition</i> that a provider determines might increase the risk of severe RSV disease

Other factors associated with increased risk for severe RSV disease include:

 Frailty or advanced age, as determined by the healthcare provider	 Residence in a nursing home or other long-term care facility	 Any underlying <i>factor</i> a provider determines might increase the risk of severe RSV disease
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[Flyer Link](#)

[MMWR: Use of RSV Vaccines in Older Adults: ACIP Recommendations](#)

[ACIP Shared Clinical Decision-Making Recommendations: Frequently Asked Questions](#)

RSV Vaccine for Pregnant People

- On 9/22/2023, members of CDC's Advisory Committee on Immunization Practices (ACIP) voted to recommend **Pfizer's bivalent RSVpreF vaccine (trade name Abrysvo) for prevention of RSV lower respiratory tract infection in infants**
- Indication
 - For use in pregnant people between **32 through 36 weeks gestation**
 - Seasonal administration between September through January
- The vaccine was approved for the Vaccines for Children (VFC) program for pregnant people under 19 years of age

[CDC ACIP Meeting Sept 22, 2023](#)

[CDC Press Release](#)

Clinical Considerations

- RSVpreF vaccine may be simultaneously administered with other indicated vaccinations in pregnancy
- **Either** vaccination during pregnancy or use of nirsevimab in the infant is recommended to prevent RSV lower respiratory tract infection in infants, but **administration of both products is not needed** for **most**.
- Healthcare providers of pregnant people **should provide information on both products and consider patient preferences** when determining whether to vaccinate the pregnant patient or to not vaccinate and rely on administration of nirsevimab to the infant after birth

Assess For Other Needed Vaccines

Even during respiratory virus season, it's still a good time to review and ensure your patients are up-to-date with their vaccines.

Immunization Recommendations for Adults with HIV¹

Vaccines	Recommended Schedules ¹	Additional Considerations
COVID-19	1 updated (2023–24) vaccine, regardless of prior vaccine history. See COVID-19 Vaccine Timing Guide	Advanced HIV infection: ≥ 1 updated vaccine(s). Additional doses based on clinical factors ² .
Hepatitis A (HepA) ³	Havrix[®], Vaqta[®] : 2 doses, 6 months apart Twinrix[®] (HepA/HepB) : 3 doses 0, 1, and 6 months apart	Check titers ≥ 1 month after series completion. If inadequate immune response, consider revaccination after CD4 ≥ 200 cells/mm ³ .
Hepatitis B (HepB) ⁴	Engerix-B[®], PreHevbrion[®], Recombivax HB[®] : 3 doses 0, 1, and 6 months apart Heplisav-B[®] : 2 doses, 1 month apart Twinrix[®] (HepA/HepB) : 3 doses, 0, 1, and 6 months apart	Consider double-dose strategy if using Engerix-B [®] or Recombivax HB [®] . Check titers ≥ 1 month after series completion. If inadequate immune response, consider revaccination after CD4 ≥ 200 cells/mm ³ .
Human papillomavirus (HPV)	Gardasil 9[®] : 3 doses, 0, 1-2, and 6 months apart for ages 15-45 years	Not routinely recommended for ages 27–45 years but some people with HIV in this age range may benefit. Use shared clinical decision-making.
Influenza	1 dose annually	Live attenuated vaccine is contraindicated.
Measles, mumps, rubella (MMR)	M-M-R[®] II, Priorix[®] : 2 doses, 28 days apart ⁵	Contraindicated if CD4 < 200 cells/mm³.
Meningococcal A, C, W, Y conjugate (MenACWY)	MenQuadfi[®], Menveo[®] : 2 doses, 2 months apart; booster every 5 years	Meningococcal cases increased among people with HIV 2017–2022; vaccine coverage remains low.
Meningococcal B (MenB)	Bexsero[®] : 2 doses, 1 month apart Trumenba[®] : 2 or 3 doses, at 0, 1-2, and 6 months	Not routinely indicated for all adults with HIV. ⁶
Mpox virus ⁷	JYNNEOS[®] : 2 doses, 1 month apart	Can be given intradermally or subcutaneously.
Pneumococcal (PCV15, PCV20, or PPSV23)	Prevnar 20[®] (PCV20) : 1 dose OR Vaxneuvance[®] (PCV15) + Pneumovax 23[®] (PPSV23) : > 2 months apart	Consider delay of PPSV23 until CD4 ≥ 200 cells/mm ³ .
Respiratory Syncytial Virus (RSV)	ABRSYVO[®], AREXVY[®] : 1 dose	Not routinely recommended for all people with HIV; may be offered to people with HIV ages ≥ 60 years. Use shared clinical decision-making.
Tetanus, diphtheria, pertussis (Tdap/Td)	1 dose Tdap (Boostrix[®], Adacel[®]), then Td (Tenivac[®], TDVAX[®]) OR Tdap booster every 10 years	During each pregnancy, give one dose of Tdap. ⁸
Varicella (VAR)	Varivax[®] : 2 doses, 28 days apart ⁹	Contraindicated if CD4 < 200 cells/mm³.
Zoster (RZV)	Shingrix[®] : 2 doses for ages > 19 years, 2 months apart	Consider delay of Shingrix until CD4 > 200 cells/mm ³ .

Mpox (Monkeypox) Vaccination Reminders

Two doses
provide the
best protection



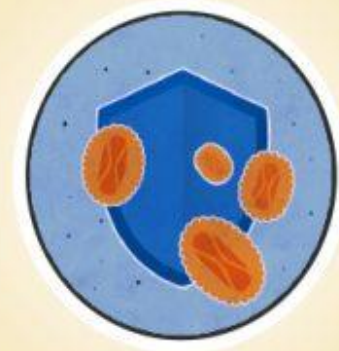
DOSE 1

4 WEEKS



DOSE 2

2 WEEKS



Max protection

- Encourage patients at-risk of mpox infection to complete 2-dose series
- Gay, bisexual, or other same-gender loving man who has sex with men or are transgender, gender non-binary, or gender-diverse.
- Persons with HIV are at particular risk for severe mpox
- [Recent California study](#) shows that ≥ 1 dose of JYNNEOS vaccine for mpox reduces hospitalization risk
 - No cases of mpox in people with HIV that received 2 JYNNEOS doses (compared to 181 in unvaccinated persons with HIV)

Make a Strong Recommendation

- Start with the **presumptive approach**
 - Assumes the patient will **choose to vaccinate**
 - Your strong recommendation is the **most important part** of the vaccine conversation
- **Example:** *“I see you’re due for flu, COVID-19, and RSV vaccines today. As my patient, I strongly recommend these vaccines to protect you and others around you from serious illness. Let’s get this ready for you now.”*

[Immunization Strategies for Healthcare Practices and Providers \(CDC\)](#)

[Talking with Patients about COVID-19 Vaccination \(CDC\)](#)

Motivational Interviewing

- For patients with vaccine concerns, consider applying **motivational interviewing**.
- There are **four steps** to apply motivational interviewing rapidly:
 1. Be empathetic
 2. Ask permission
 3. Apply interviewing techniques
 4. Respond to questions

[Wolicki, JoEllen. "Talking to Patients about Vaccines" CDC COCA Call. Sept. 19, 2023.](#)

[Talking with Patients about COVID-19 Vaccination \(CDC\)](#)

Step 1: Be Empathetic

- Be **compassionate** and show **empathy**; be curious about the reasons they feel the way they do
- Be **sensitive** to culture, family dynamics, and circumstances that may influence how patients view vaccines.
- Do **not** argue or debate.

[Wolicki, JoEllen. "Talking to Patients about Vaccines" CDC COCA Call. Sept. 19, 2023.](#)

Step 2: Ask Permission

- Start by **asking permission** to discuss vaccines.
 - *“If it is okay with you, I would like to spend a few minutes talking about vaccines that are an important part of your care”*
- If the patient says they do **NOT** want to talk about vaccines:
 - Ask **why** they don’t want to talk about vaccines:
 - *“Can you tell me more about the reasons you don’t want to discuss vaccination today?”*
 - **Respect** the patient’s decision
 - Ask if they would be willing to talk about vaccines **at their next visit**

[Wolicki, JoEllen. “Talking to Patients about Vaccines” CDC COCA Call. Sept. 19, 2023.](#)

Step 3: Apply Interviewing Techniques

- **Open the conversation**
 - Use open-ended questions to explore
 - Avoid yes/no questions
- **Affirm positive behaviors**
 - *“That’s great that you’ve gotten your flu vaccine. Now let’s talk about some other vaccines.”*
- **Reflect what you hear**
 - *“It sounds like you have some concerns.”*
- **Summarize the conversation**
 - *“Let me see if I understand what you’ve said so far...”*

[Wolicki, JoEllen. “Talking to Patients about Vaccines” CDC COCA Call. Sept. 19, 2023.](#)

Step 3: Apply Interviewing Techniques

- Example: **Ask the patient a scaled question.**
 - *“On a scale of 1 to 10, how likely are you to get a COVID-19 vaccine?”*
- **Keep exploring and reflectively listen.**
 - *“Why did you choose this number?”*
 - *“Why wasn’t it lower/higher?”*
 - *“What would it take to get to a higher number?”*
- The goal is to help the patient become more open to moving toward high numbers (i.e., to increase readiness to get vaccinated).

[Wolicki, JoEllen. “Talking to Patients about Vaccines” CDC COCA Call. Sept. 19, 2023.](#)

Step 4: Respond to Questions

- If the patient asks a question about vaccine safety, vaccine risks, or their health or mental health, respond within the boundaries of your competence and scope of practice.
- Most data on safety and risk is population based. **Practice reframing safety as individual risk.**
 - *“Based on your health, you are at an increased risk of getting very sick, and in the group the vaccine will most benefit.”*
- If you do not know the answer to a question, discuss how to find a good source of information.

[Wolicki, JoEllen. “Talking to Patients about Vaccines” CDC COCA Call. Sept. 19, 2023.](#)

CLINICAL SCENARIO AND DISCUSSION



PowerPoint Stock Image

Manuel is a 64-year-old man with a history of hypertension, diabetes, chronic obstructive pulmonary disease (COPD) and HIV infection on ART (CD4 count >200) who comes for a routine appointment.

“I really don’t want to get sick this winter. I heard about the new RSV vaccine at the grocery store. Should I get it? Should I get my flu shot too?”

Should I get the RSV vaccine?










- **Guidance**

- RSV vaccines are now available for adults 60 years and older
- Shared clinical decision to receive the RSV vaccine




- **Considerations**

- He has multiple risk factors for severe RSV disease
- Vaccine efficacy and safety
- Patient preferences

Underlying medical conditions associated with increased risk for severe RSV disease include:

 Chronic lung disease (e.g., COPD and asthma)	 Chronic kidney disease	 Moderate or severe immunocompromise
 Chronic cardiovascular disease (e.g., CHF and CAD)	 Chronic liver disease	 Chronic hematologic disorders
 Chronic or progressive neurologic or neuromuscular conditions	 Diabetes Mellitus	 Any underlying condition that a provider determines might increase the risk of severe RSV disease

Other factors associated with increased risk for severe RSV disease include:

 Frailty or advanced age, as determined by the healthcare provider	 Residence in a nursing home or other long-term care facility	 Any underlying factor a provider determines might increase the risk of severe RSV disease
---	--	---

[Flyer Link](#)

Co-administration and Vaccine Timing

- Flu and COVID-19 vaccines also recommended.
- Healthcare providers can co-administer the vaccines for which a patient is eligible in the same visit.
- When deciding whether to co-administer other vaccines with RSV vaccine at the same visit, consider:
 - Is the patient up to date with currently recommended vaccines?
 - Feasibility of their returning for additional vaccine doses?
 - Risk of acquiring vaccine-preventable disease?
 - Vaccine reactogenicity profiles
 - Patient preferences



PowerPoint Stock Image

“Hmm...that’s too many vaccines. I don’t think my body can take it.”

Motivational Interviewing

For Manuel's vaccine concerns, consider applying **motivational interviewing**.

1. Be empathetic
2. Ask permission
3. Apply interviewing techniques
 - *“It sounds like you have some concerns about getting more than one vaccine at a time.”*
4. Respond to questions
 - *“Based on your age and health conditions, you are at an increased risk of getting very sick, and I strongly recommend flu and COVID-19 vaccines.”*

[Wolicki, JoEllen. “Talking to Patients about Vaccines” CDC COCA Call. Sept. 19, 2023.](#)

Summary

- Everyone 6 months and older should receive an annual influenza vaccine and stay up to date on COVID-19 vaccines.
- People 60 years and older may receive RSV vaccine based a discussion with their healthcare provider
- Prenatal RSV vaccine is recommended at 32 to 36 weeks of pregnancy
- Influenza, COVID-19, and RSV vaccines can be co-administered.
- Motivational interviewing can support effective conversations with patients who have vaccine concerns.

Vaccine Confidence Resources

- [Vaccine Confidence Resources \(CDPH\)](#)
- [Vaccinate with Confidence \(CDC\)](#)
- [Talking with Patients about COVID-19 Vaccination \(CDC\)](#)
- [Addressing Vaccination Anxiety in Adolescents and Adults \(Immunize.org\)](#)



Getty Images, Gerber86

Influenza Vaccine Resources

- [Influenza Vaccine ID Guide](#) (Updated for 2023-24)
- [Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — U.S., 2023–24 Influenza Season](#) (CDC)
- [Flu and Respiratory Disease Prevention Resources](#) (CDPH)
- [Seasonal Influenza Resource Center](#) (CDC)

PEDIATRIC/ADULT INFLUENZA VACCINE 2023-2024

Age Group	Vaccine Name	Manufacturer	Dose
6 MONTHS & OLDER	Fluarix® Quadrivalent	GlaxoSmithKline Biologicals	0.5 mL, single-dose syringe
	Flucelvax® Quadrivalent	Seqirus	0.5 mL, single-dose syringe
	Afluria® Quadrivalent	Seqirus	0.5 mL, single-dose syringe
	Fluzone® Quadrivalent	Sanofi Pasteur, Inc.	0.5 mL, single-dose syringe
3 YEARS & OLDER	Afluria® Quadrivalent	Seqirus	5.0 mL, multi-dose vial
	Fluzone® Quadrivalent	Sanofi Pasteur, Inc.	5.0 mL, multi-dose vial
2-49 YEARS OLD & HEALTHY	FluMist® Quadrivalent	MedImmune Vaccines, Inc.	0.2 mL, single-dose nasal spray
	Fluzone® Quadrivalent	Sanofi Pasteur, Inc.	0.5 mL, single-dose syringe
18 YEARS & OLDER	FluBlok® Quadrivalent	Protein Sciences	0.5 mL, single-dose syringe
	Fluzone® High-Dose Quadrivalent	Sanofi Pasteur, Inc.	0.7 mL, single-dose syringe

STORE ALL INFLUENZA VACCINES IN THE REFRIGERATOR.
VFC Questions: Call 877-2Get-VFC (877-243-8832)

Children under 9 years of age with a history of fewer than 2 doses of influenza vaccine are recommended to receive 2 doses this flu season. See [CDC Website](#).

Vaccines available through the Vaccines for Children Program in 2023-24 should only be used for VFC-eligible children 18 years of age or younger.

- Multi-dose flu vaccines, which contain thimerosal, should NOT be given to pregnant women and children under 3 years of age unless Secretary of the Health and Human Services Agency issues an exemption (CA Health & Safety Code 124172).
- Preferred vaccine product for persons 65 or older. If not available, any other age-appropriate inactivated product may be given.

California Department of Public Health | IMM-859 (8/23) | CDPH

COVID-19 Vaccine Resources

- [COVID-19 Vaccine Timing Tool | Spanish](#)
- [COVID-19 Vaccine Product Guide](#)
- [Interim Clinical Considerations for Use of COVID-19 Vaccines in the U.S.](#)
- [Respiratory Viruses Page \(CDC\)](#)
- [COVID-19, Flu, and RSV Page \(FDA\)](#)

RSV Vaccine Resources

- [Healthcare Provider RSV Vaccine Page \(CDC\)](#)
- [Shared Clinical Decision-Making Guidance Flyer for RSV Vaccine \(CDC\)](#)
- [Use of RSV Vaccines in Older Adults: Recommendations of the Advisory Committee on Immunization Practices — U.S., 2023](#)
- [RSV Vaccine Information Statement \(VIS\)](#)

Shared Clinical Decision-Making (SCDM)
RSV Vaccination for Adults 60 Years and Older

- Respiratory syncytial virus (RSV) is a cause of severe respiratory illness across the lifespan. Each year in the United States, RSV leads to approximately 60,000-160,000 hospitalizations and 6,000-10,000 deaths among adults 65 years and older.
- Adults 60 years of age and older now have the option to receive one dose of RSV vaccine based on a SCDM process between a patient and their health care provider.
- Consider multiple factors when discussing RSV vaccination with your patients. SCDM recommendations are optional and are informed by whether the patient has any risk factors for severe RSV disease; a patient's risk of exposure to RSV; a patient's preferences for RSV vaccination; and the clinical discretion of the health care provider.

Underlying medical conditions associated with increased risk for severe RSV disease include:

 Chronic lung disease (e.g., COPD and asthma)	 Chronic kidney disease	 Moderate or severe immunocompromise
 Chronic cardiovascular disease (e.g., CHF and CAD)	 Chronic liver disease	 Chronic hematologic disorders
 Chronic or progressive neurologic or neuromuscular conditions	 Diabetes Mellitus	 Any underlying condition that a provider determines might increase the risk of severe RSV disease

Other factors associated with increased risk for severe RSV disease include:

 Frailty or advanced age, as determined by the healthcare provider	 Residence in a nursing home or other long-term care facility	 Any underlying factor a provider determines might increase the risk of severe RSV disease
---	--	---

Other points to consider:

- Serious neurologic conditions, including Guillain-Barré syndrome (GBS), have been reported after RSV vaccination in clinical trials. However, it is unclear whether the vaccine caused these events.
- Persons with history of severe allergic reaction (e.g., anaphylaxis) to any component of RSV vaccine should not receive the vaccine.

Additional Information: CDC RSV Vaccine Information: <https://www.cdc.gov/vaccines/imz/downloads.html>

MMWR Report: <https://www.cdc.gov/mmwr/weekly/72/w7201a1.htm>

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

More Provider Resources

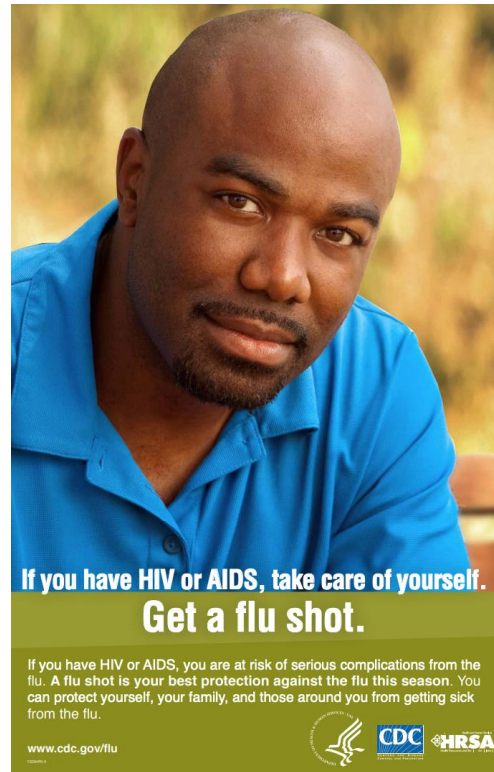
- [MPOX Vaccination Resources](#)
- [Vaccination-Related Syncope](#) (Immunize.org)
- [Guidelines for the Prevention and Treatment of Opportunistic Infections in Adults and Adolescents with HIV](#) (NIH)
- [More Resources](#)

Immunization Recommendations for Adults with HIV¹

Vaccines	Recommended Schedules ¹	Additional Considerations
COVID-19	1 updated (2023–24) vaccine, regardless of prior vaccine history. See COVID-19 Vaccine Timing Guide	Advanced HIV infection: ≥ 1 updated vaccine(s). Additional doses based on clinical factors ² .
Hepatitis A (HepA) ³	Havrix[®], Vaqta[®] : 2 doses, 6 months apart Twinrix[®] (HepA/HepB) : 3 doses 0, 1, and 6 months apart	Check titers ≥ 1 month after series completion. If inadequate immune response, consider revaccination after CD4 ≥ 200 cells/mm ³ .
Hepatitis B (HepB) ⁴	Engerix-B[®], PreHevbrion[®], Recombivax HB[®] : 3 doses 0, 1, and 6 months apart Heplisav-B[®] : 2 doses, 1 month apart Twinrix[®] (HepA/HepB) : 3 doses, 0, 1, and 6 months apart	Consider double-dose strategy if using Engerix-B [®] or Recombivax HB [®] . Check titers ≥ 1 month after series completion. If inadequate immune response, consider revaccination after CD4 ≥ 200 cells/mm ³ .
Human papillomavirus (HPV)	Gardasil 9[®] : 3 doses, 0, 1-2, and 6 months apart for ages 15-45 years	Not routinely recommended for ages 27–45 years but some people with HIV in this age range may benefit. Use shared clinical decision-making.
Influenza	1 dose annually	Live attenuated vaccine is contraindicated.
Measles, mumps, rubella (MMR)	M-M-R[®] II, Priorix[®] : 2 doses, 28 days apart ⁵	Contraindicated if CD4 < 200 cells/mm³.
Meningococcal A, C, W, Y conjugate (MenACWY)	MenQuadfi[®], Menveo[®] : 2 doses, 2 months apart; booster every 5 years	Meningococcal cases increased among people with HIV 2017–2022; vaccine coverage remains low.
Meningococcal B (MenB)	Bexsero[®] : 2 doses, 1 month apart Trumenba[®] : 2 or 3 doses, at 0, 1-2, and 6 months	Not routinely indicated for all adults with HIV. ⁶
Mpox virus ⁷	JYNNEOS[®] : 2 doses, 1 month apart	Can be given intradermally or subcutaneously.
Pneumococcal (PCV15, PCV20, or PPSV23)	Prevnar 20[®] (PCV20) : 1 dose <i>OR</i> Vaxneuvance[®] (PCV15) + Pneumovax 23[®] (PPSV23) : > 2 months apart	Consider delay of PPSV23 until CD4 ≥ 200 cells/mm ³ .
Respiratory Syncytial Virus (RSV)	ABRSYVO[®], AREXVY[®] : 1 dose	Not routinely recommended for all people with HIV; may be offered to people with HIV ages ≥ 60 years. Use shared clinical decision-making.
Tetanus, diphtheria, pertussis (Tdap/Td)	1 dose Tdap (Boostrix[®], Adacel[®]), then Td (Tenivac[®], TDVAX[®]) <i>OR</i> Tdap booster every 10 years	During each pregnancy, give one dose of Tdap. ⁸
Varicella (VAR)	Varivax[®] : 2 doses, 28 days apart ⁹	Contraindicated if CD4 < 200 cells/mm³.
Zoster (RZV)	Shingrix[®] : 2 doses for ages > 19 years, 2 months apart	Consider delay of Shingrix until CD4 > 200 cells/mm ³ .

More Patient Resources

- [Vaccines for Men Who Have Sex with Men \(MSM\)](#)
(Immunize.org)
- [If You Have HIV/AIDS, Take Care of Yourself. Get a Flu Shot poster](#) (CDC)
- [Make a Statement This Flu Season poster](#) (CDC)



[Vaccine Poster for PWH](#)

Thriving with HIV?

Immunizations can help you stay healthy.

Protect yourself and your community by getting immunized today!

Place your logo or clinic info in box above. Delete this text before saving or printing.

Ask your doctor or care team if you should get any of these vaccines:

- COVID-19
- Hepatitis A and B
- Human Papillomavirus (HPV)
- Influenza
- Meningitis
- MPOX
- Pneumonia
- Shingles (Zoster)
- Tetanus, Diphtheria, Pertussis (Whooping Cough) (Tdap)

IMM-1456 (5/23)

Thank you!

Questions?



[Unsplash](#) (2021)

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- ["RESP-NET Interactive Dashboard" Centers for Disease Control and Prevention \(CDC\), 2023.](#)
- ["COVID Data Tracker" CDC, 2020.](#)
- ["Tracking COVID-19 in California" State of California, 2020.](#)
- ["RSV." CDC, 2019.](#)
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- [U.S. FDA. \(2023, Sept. 11\). “FDA takes action on updated mRNA COVID-19 vaccines to better protect against currently circulating variants.”](#)
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- [U.S. FDA AREXVY Product Insert.](#)
- [U.S. FDA ABRYOVO™ Product Insert.](#)
- [“ACIP Shared Clinical Decision-Making Recommendations: Frequently Asked Questions” CDC.](#)
- Schildhauer S, et al. Reduced Odds of Mpox-Associated Hospitalization Among Persons Who Received JYNNEOS Vaccine — California, May 2022–May 2023. *MMWR Morb Mortal Wkly Rep* 2023;72:992–996. <http://dx.doi.org/10.15585/mmwr.mm7236a4>.
- [Wolicki, JoEllen. “Talking to Patients about Vaccines” CDC COCA Call. Sept. 19, 2023.](#)

EXTRA SLIDES

Influenza Treatment

- Antiviral treatment is recommended **as soon as possible** for any patient with suspected or confirmed influenza who:
 - is [hospitalized](#);
 - has severe, complicated, or progressive illness; or
 - is at [higher risk](#) for influenza complications.
- Decisions about starting antiviral treatment for patients with suspected influenza should not wait for laboratory confirmation of influenza virus infection.
- Clinicians can consider early empiric antiviral treatment of non-high-risk outpatients with suspected influenza [e.g., influenza-like illness (fever with either cough or sore throat)] based upon clinical judgement, if treatment can be initiated within 48 hours of illness onset.

COVID Treatment

- **Most** adults and some children are at risk of serious complications from COVID-19 and should be treated if symptomatic.

Unvaccinated

Physical Inactivity

Smoking

Age <1 year and 10–14 years
and >50 years

Prematurity (in young infants)

Non-White race/ethnicity

Obesity BMI >30

Chronic pulmonary (including
asthma), cardiac, renal, liver
diseases

Neurologic disorders

Diabetes

Immunocompromise

- Treatment is the **ONLY** way to reduce the risk serious outcomes after COVID-19 infection
- May also reduce the risk of Long COVID
- **40-89% risk reduction*** for hospitalization or death regardless of vaccination status

*Comparison: Statins to prevent MI: 29% RRR

Glycemic control to prevent microvascular endpoints: 25% RRR

[CDC COVID High Risk](#)

Outpatient COVID treatment – adult and pediatric

- **Treatment by default**
 - For all symptomatic patients >50 years old within 5 or 7 days of symptom onset
 - For high risk, symptomatic patients ≥12 years old within 5 or 7 days of symptom onset
 - **Nirmatrelvir with ritonavir (Paxlovid)** – PO bid x5 days initiated within 5 days of symptom onset
 - Renal function and liver tests are **not required** – ok to use clinical judgement, history, context
 - Test result **not required**
 - Check for [drug interactions](#); very few absolute contraindications
 - Dose reduction in CKD
 - Standing Paxlovid orders with RN assessment are acceptable
 - **Remdesivir (Veklury)** - IV daily x 3 days initiated within 7 days of symptom onset
 - Baseline labs: GFR, liver function, and prothrombin time tests
 - Not to be used in patients with GFR ≤ 30 mL/min

[NIH Treatment Guidelines](#)

COVID-19 Therapeutics Myths and Facts

How to dispel misinformation about treatments

MYTH:
I don't need medication for a mild-to-moderate illness.

PROVIDER ANSWER:

Lots of us are used to waiting out similar cold and flu symptoms to see if they get "bad enough" to need treatment. COVID-19 is different: lots of us are still at risk of having our mild or moderate symptoms develop into something more serious. The treatments can keep you out of the hospital and prevent you from dying, and early evidence shows they may even reduce your chance of developing long COVID.



MYTH:
I'm not high risk.

PROVIDER ANSWER:

Most of us don't think of ourselves as "high risk." However, there are many factors that can make even very healthy people more susceptible to becoming very ill from COVID-19. The truth is: the majority of adults fit into one of these categories. They include:

1. Anyone over age of 50.
2. People living with diabetes, mental conditions (anxiety, depression, ADHD, and more), chronic lung disease (including asthma), chronic kidney disease, and cardiovascular disease.
3. People who are overweight, physically inactive, or who smoke.
4. People who are negatively affected by social determinants of health, such as race, ethnicity, socio-economic status, or limited access to healthcare.
5. People who are unvaccinated or not up-to-date with vaccinations.



Scan the QR code to read more about COVID-19 treatment resources.



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COVID-19 Therapeutics Myths and Facts:

MYTH:
Treatments have serious side effects.

PROVIDER ANSWER:

Of course, we all worry about side effects! Fortunately, most people have little-to-no side effects. In clinical studies of Paxlovid, side effects occurred for less than 10% of patients. The most common side effect of Paxlovid is an unpleasant taste in the mouth, which occurred for 6% of people; smaller percentages of people have experienced diarrhea (3%), hypertension (1%), and/or muscle aches (1%).

Abdominal pain and general malaise have also been noted outside of clinical studies. Some other medications may need to be adjusted while you are taking Paxlovid. If you cannot take Paxlovid for any reason, you may be offered molnupiravir (Lagevrio) instead. Molnupiravir has very few side effects, but you cannot take it if you are pregnant.



MYTH: Rebound caused by treatments is common and can be dangerous.

PROVIDER ANSWER:

Rebound has been in the news a lot! The thing that most people don't realize is that viral rebound happens in people who don't take treatments as well as those who do, and less than 1 in 5 people experience rebound. It does happen somewhat more frequently among people who take Paxlovid. For some people, taking Paxlovid will help you test negative sooner. But for some, the symptoms may return. The good news is that if your symptoms do return, they tend to be mild and do not require repeating the treatment.



HELPFUL RESOURCES FOR PROVIDERS:

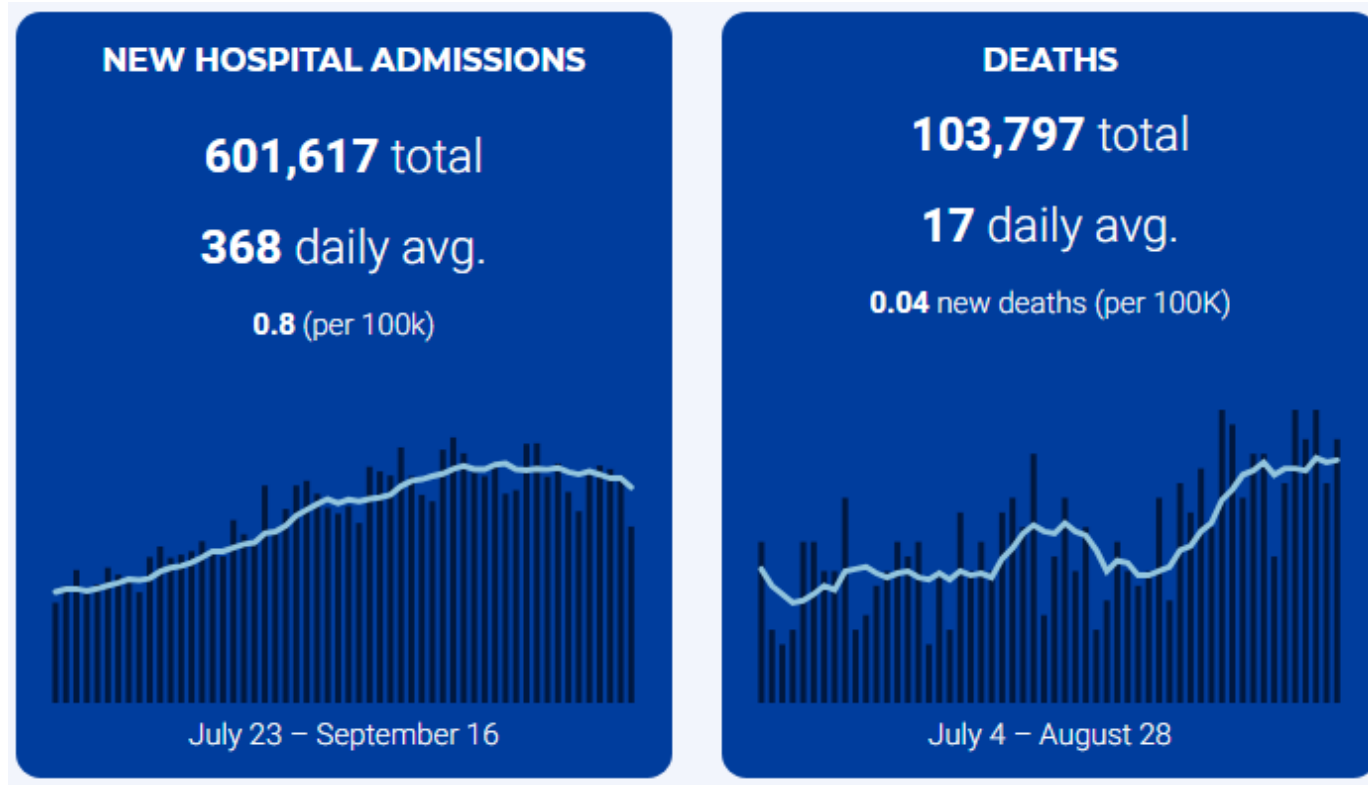
- [COVID-19 Therapeutics Decision Aid \(hhs.gov\)](https://www.hhs.gov)
- [Underlying Medical Conditions Associated with Risk for Severe COVID-19 | CDC](https://www.cdc.gov)
- [Information Sheet: Paxlovid Eligibility and Effectiveness \(hhs.gov\)](https://www.hhs.gov)
- [Have questions? Email COVIDRxProviders@cdph.ca.gov](mailto:COVIDRxProviders@cdph.ca.gov)



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Therapeutics Myths and Facts

Recent COVID-19 Trends in California



Key metrics now focused on disease severity and system impact

[CA COVID-19 Dashboard](#) (Updated 9/22/23)