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VERMONT
DEPARTMENT OF HEALTH

Advancing Public Health: Key Updates from the ACIP & Immunization Program

Katie Mahuron, RN – *Adult Nurse Coordinator*
Meghan Carey, RN – *Child & Adolescent Nurse Coordinator*

May 8, 2025

VERMONT
DEPARTMENT OF HEALTH

Today's Agenda

ACIP Updates

- Votes:
  - Men Pentavalent (MenABCWY)
  - RSV for 50-59
  - Chikungunya
- Other ACIP Updates

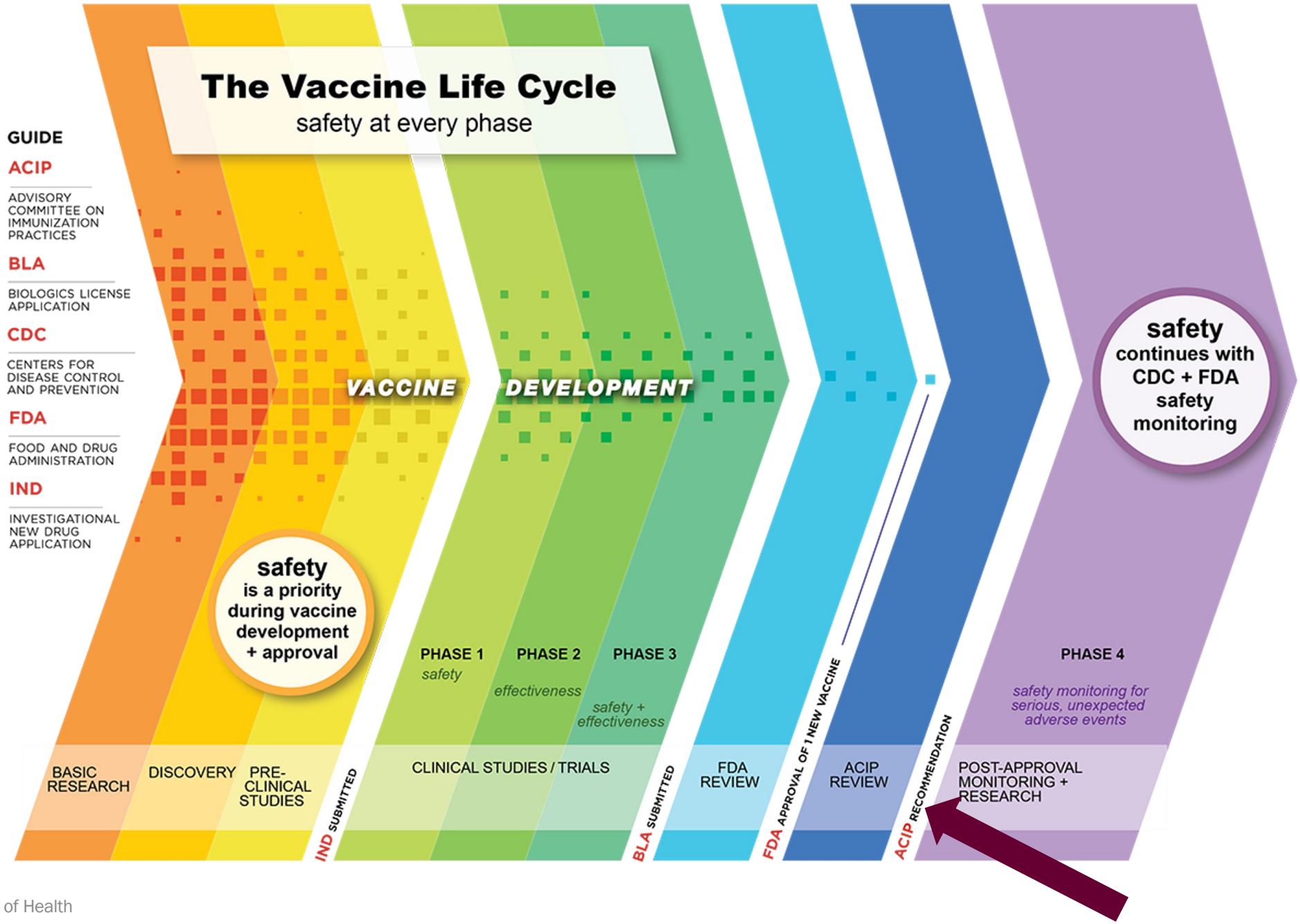
Measles Update

Autism & Vaccines

Q&A

Where can you find the best creemees?

- Vermont Cookie Love, N. Ferrisburgh
- Village Scoop, Colchester
- Palmer Lane Maple, Jericho
- Canteen Creemee Company
- No creemees for me
- Somewhere else (tell us where!)


The Vaccine Life Cycle
safety at every phase
GUIDE
ACIP
ADVISORY COMMITTEE ON IMMUNIZATION PRACTICES
BLA
BIOLOGICS LICENSE APPLICATION
CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION
FDA
FOOD AND DRUG ADMINISTRATION
IND
INVESTIGATIONAL NEW DRUG APPLICATION
VACCINE DEVELOPMENT
safety is a priority during vaccine development + approval
PHASE 1
safety
PHASE 2
effectiveness
PHASE 3
safety + effectiveness
PHASE 4
safety monitoring for serious, unexpected adverse events
safety continues with CDC + FDA safety monitoring
BASIC RESEARCH
DISCOVERY
PRE-CLINICAL STUDIES
IND SUBMITTED
CLINICAL STUDIES / TRIALS
BLA SUBMITTED
FDA REVIEW
FDA APPROVAL OF 1 NEW VACCINE
ACIP REVIEW
ACIP RECOMMENDATION
POST-APPROVAL MONITORING + RESEARCH

Votes

RSV Vaccine for Adults

- Currently one dose per lifetime
- Three vaccine options:
  - Protein subunit
    - Arexvy – monovalent RSV-A, $AS01_E$ adjuvant
    - Abrysvo – bivalent RSV-A/RSV-B, no adjuvant
  - mRNA
    - mRESVIA* – monovalent RSV-A, no adjuvant

      *Not yet licensed by FDA for use in 50-59 yrs

A single dose of RSV vaccine for:

- **All adults ages 75 and older**
- **Adults ages 50–74 at increased risk of severe RSV.**

- Eligible adults can get an RSV vaccine at any time, but the best time to is in late summer and early fall before RSV is spreading.

Risk-based Recommendation

Factors associated with increased risk* for severe RSV disease include:

Chronic lung disease

Chronic cardiovascular disease

End-stage renal disease or dependence on dialysis

Diabetes mellitus with end-organ damage or requiring insulin or SGLT2 inhibitor

Moderate or severe immunocompromise

Chronic or progressive neurological or neuromuscular conditions

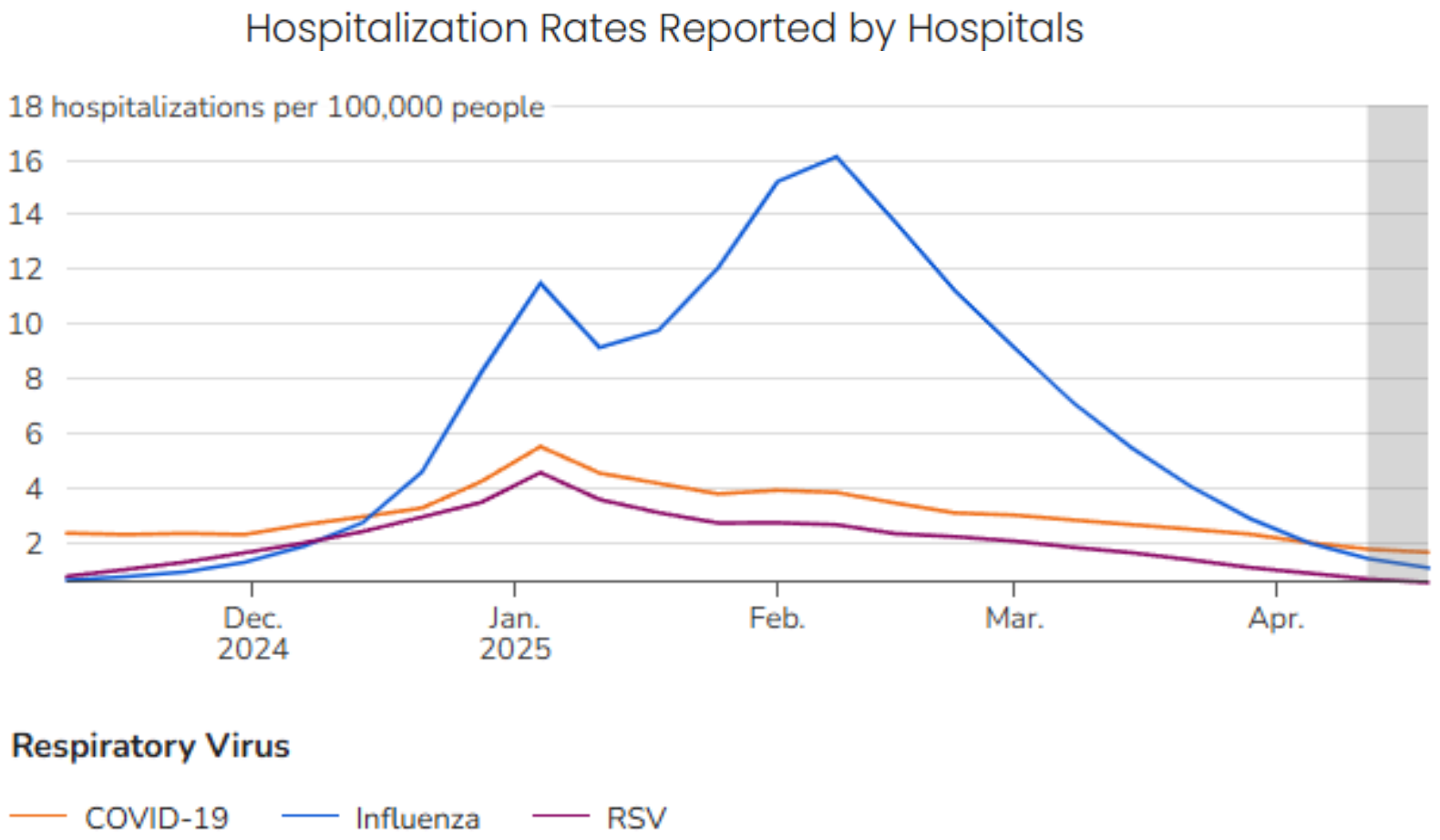
Other factors include:

- **Chronic liver disease**
- **Chronic hematologic conditions**
- **Severe obesity (BMI ≥40 kg/m^2)**
- **Residence in a nursing home**
- **Other conditions or factors that put your patient at increased RSV disease risk**

*Self-attestation is sufficient evidence of a risk factor.

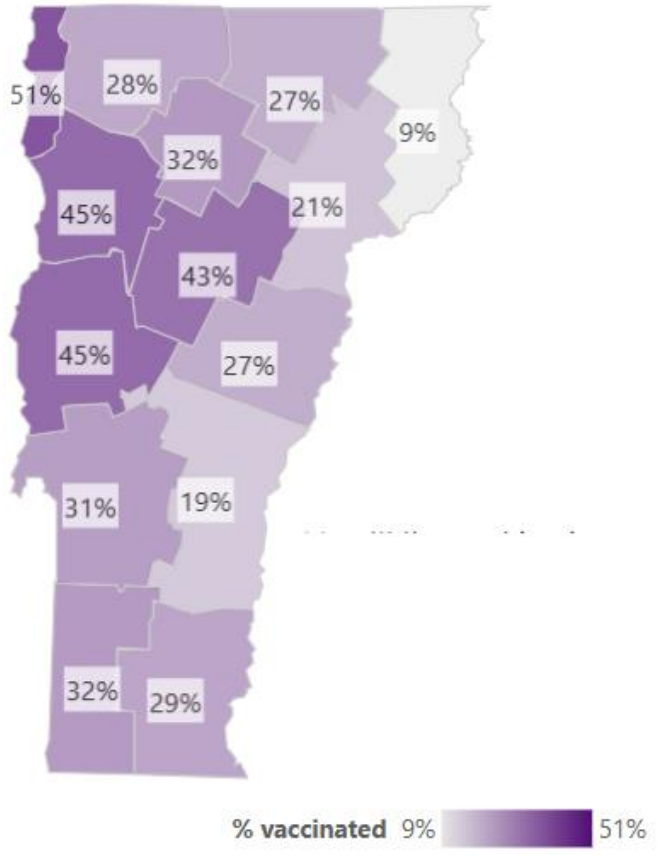
CDC Factsheet: RSV Vaccines for Older Adults

CDC Severe Viral Respiratory Illness Data

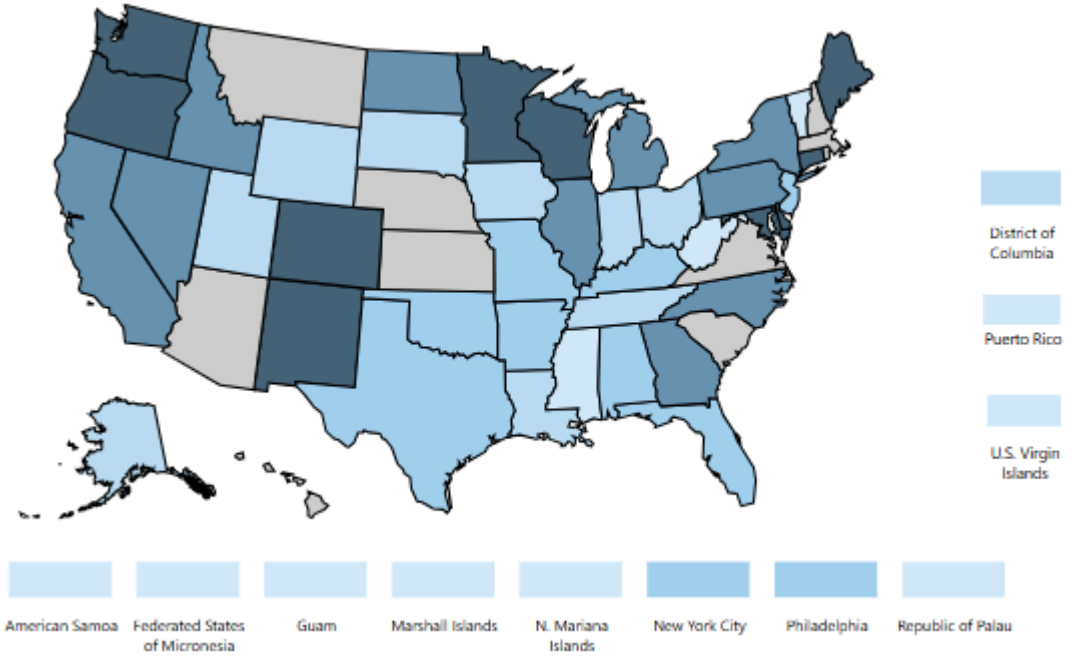


Severe Viral Respiratory Illness | Respiratory Illnesses | CDC

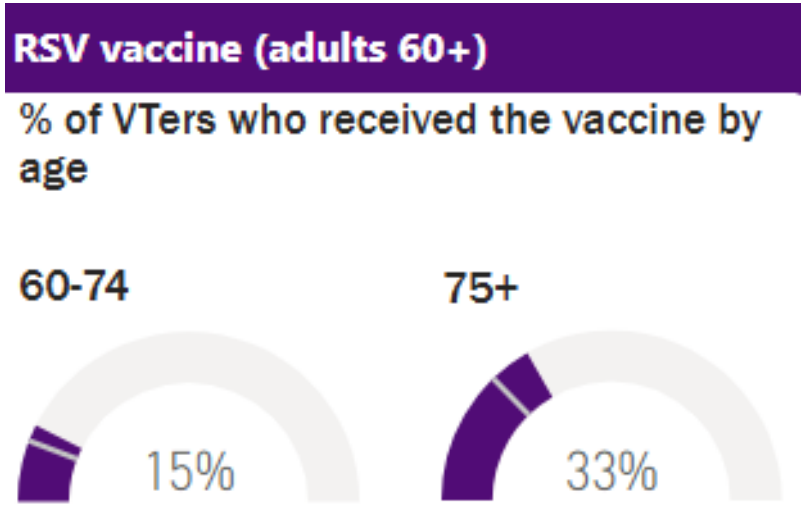
Vermont adult RSV vaccination rates: 75 years+

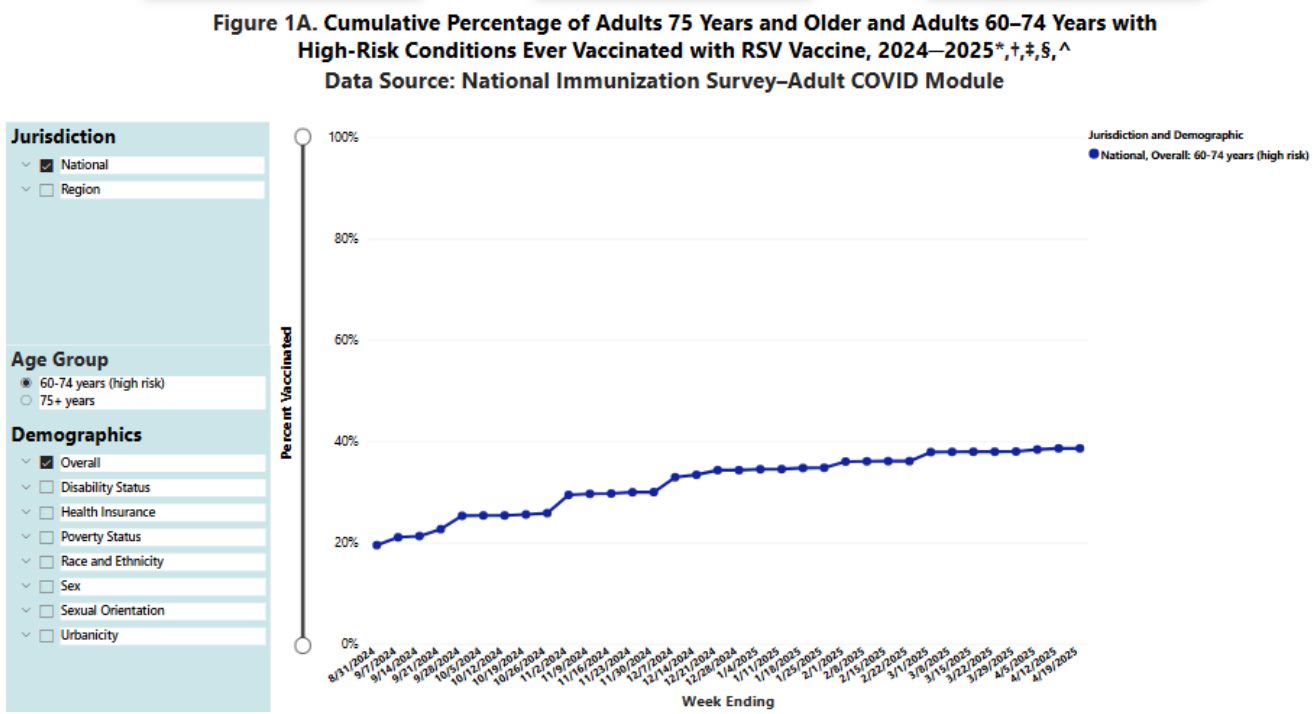


- 33% of Vermonters 75 years and older have received a RSV vaccine
- Approximately 19,300 Vermonters 75 years and older have received a RSV vaccine



Vermont adult RSV vaccination rates: 60 – 74 years





[Respiratory Syncytial Virus (RSV) Vaccination Coverage and Intent for Vaccination, Adults 75 Years and Older and Adults 60–74 Years with High-Risk Conditions*, United States | RSVVaxView | CDC]

Up Next for ACIP RSV Vaccine Review

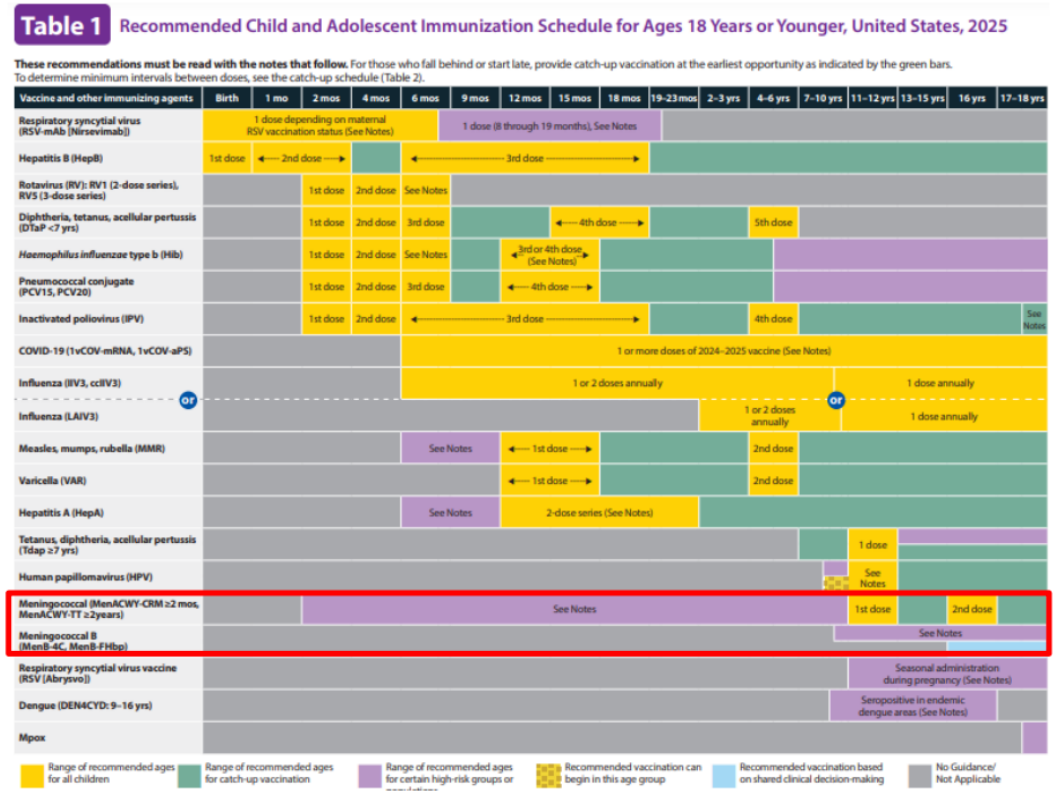
- Continue to monitor and review data for when the best time for additional doses will be
  - Studies so far have looked at 12, 24 and 36 months after initial vaccination.
- Future review of risk-based recommendation for ages 18-49 years.

Current Meningococcal Vaccine Recommendations

Routine Recommendation

- 1 MenACWY dose at 11-12 years of age and a booster dose at age 16 years of age
  - Interchangeable

- **Clinical decision making**
- 2 MenB doses at age 16-23 years (preferred age 16-18 years)
  - Not interchangeable



Risk-Based Meningococcal Vaccine Recommendations

- CDC recommends meningococcal vaccination for children and adults at increased risk for meningococcal disease.
- Dosing schedule for people with risk factors vary with age

	MenACWY (≥2 months)	MenB (≥10 years)
Asplenia (functional or anatomic)	√	√
Complement deficiency/ complement inhibitor use	√	√
HIV infection	√	
Some microbiologists	√	√
Exposure during outbreak	√	√
Travel to hyperendemic areas	√	
First-year college students (if not previously vaccinated at ≥16 years)	√	

GSK pentavalent vaccine: review of EtR and workgroup considerations

Meningococcal Vaccines

- Six meningococcal vaccines licensed in the U.S.
  - Two of these are pentavalent vaccines

	Pfizer (Penbraya)	GSK (Penmenvy)
ACWY component	Nimenrix (not licensed in U.S.)	Menveo
B component	Trumenba	Bexsero
Schedule	2 doses, 6 months apart	2 doses, 6 months apart
Age	10–25 years	10–25 years
Licensed	October 20, 2023	February 14, 2025
ACIP Vote	October 25, 2023	Today

GSK pentavalent vaccine: review of EtR and workgroup considerations

Meningococcal Pentavalent Vaccine Votes

ACIP recommends GSK's MenABCWY vaccine (Penmenvy) may be used when both MenACWY and MenB are indicated at the same visit*

*(1) Healthy person aged 16-23 (routine schedule) when shared clinical decision-making favors administration of MenB vaccine and

*(2) People age >10 years who are at increased risk for meningococcal disease (e.g. because of persistent complement deficiencies, complement inhibitor use or functional anatomic asplenia)

Meningococcal Vote #2

- ACIP approved the updated Vaccines for Children (VFC) resolution for vaccines to prevent meningococcal disease

- This was a vote to include the pentavalent GSK vaccine in the VFC Program

Meningococcal Vaccine Update

- MenQuadfi (Sanofi) seeking infant licensure
- Anticipates FDA decision in May to lower licensed minimum age from 2 years to 2 months (like Menveo by GSK)
  - MenQuadfi has equivalent immunogenicity and safety compared to Menveo

Manufacturer	Trade Name	Abbreviation	Licensed Age Group	ACIP Recommended Age Group*
~~Sanofi Pasteur~~	~~Menactra~~	~~MenACWY-D~~	~~9 months–55 years~~	~~≥9 months~~
Sanofi Pasteur	MenQuadfi	MenACWY-TT	≥2 years	≥2 years
GlaxoSmithKline	Menveo	MenACWY-CRM	2 months–55 years	≥2 months**

Introduction to MenQuadfi label change for infants

Licensed Chikungunya Vaccines

- CHIK-LA: Live attenuated chikungunya vaccine (IXCHIQ) licensed in November 2023
  - **For individuals >18 years and older**
  - ACIP approved travel and laboratory worker recommendations in February 2024

- CHIK-VLP (non-live): A virus-like particle vaccine licensed in February 2025
  - **For individuals 12 years and older**

Chikungunya Vaccine Vote #1

- ACIP recommends virus-like particle chikungunya (CHIK-VLP) for people **12 years and older** traveling to a country or territory where there is a chikungunya outbreak

- *In addition, it may be considered* for people in this age group traveling or taking up residence in a country or territory without an outbreak but with elevated risk for US travelers if planning travel for an extended period of time (e.g. 6 months or more)

Chikungunya Vaccine Vote #2

- ACIP recommends virus-like particle chikungunya vaccine (CHIK-VLP) for laboratory workers with potential exposure to chikungunya virus
- CHIK-LA (live vaccine) was already approved for laboratory workers with exposure potential

Chikungunya Vaccine Vote #3

Previous Recommendation

- CHIK-LA vaccine is recommended for persons aged ≥18 years traveling to a country or territory where there is a chikungunya outbreak.
- In addition, chikungunya vaccine may be considered for the following persons traveling to a country or territory without an outbreak but with evidence of chikungunya virus transmission among humans within the last 5 years
  - ~~Persons aged >65 years, particularly those with underlying medical conditions, who are likely to have at least moderate exposure to mosquitoes, OR~~
  - Persons staying for a cumulative period of 6 months or more

Revised Recommendation

- Chikungunya vaccine (CHIK-LA) is recommended for persons aged ≥18 years traveling to a country or territory where there is a chikungunya outbreak.
- In addition, live attenuated chikungunya vaccine may be considered for persons aged ≥18 years traveling or taking up residence in a country or territory without an outbreak but with elevated risk for US travelers if planning travel for an extended period of time (e.g. 6 months or more)
- Age ≥65 years is a precaution for use of CHIK-LA

Chikungunya Vaccines During Pregnancy

- Guidance for use during pregnancy
  - Avoid risk of chikungunya virus exposure, if possible
  - In general, defer vaccination until after delivery
  - If exposure risk high, consider vaccination given risk for severe adverse outcomes of infection particularly if intrapartum transmission occurs
  - If considering vaccination, where possible avoid 1st trimester and ideally administer >2 weeks before delivery
  - If both CHIK-VLP and CHIK-LA available, vaccination with non-live CHIK-VLP preferred

- Not available through the Vermont Vaccine Program
  - Visit CDC Traveler's Health to locate these vaccines

Planning for Approval and Implementation

While we wait

- Be familiar with the new recommendations
- Ensure all staff are educated on these updates
- Create a list of places on your website or social media page needing updates for when recommendations are CDC approved
- Assess EHR readiness

Once Approved

- Update factsheets, websites and EHRs
- Communicate CDC approval to staff
- Notify the public about new recommendations
- Update standing orders (where applicable)

Updates

Cytomegalovirus (CMV) Vaccine Updates

CMV is often asymptomatic but can have serious consequences during pregnancy.

- Over 16,000 children born with congenital CMV (cCMV) infection in the U.S. every year; nearly 3,000 with cCMV disease.

Development of a vaccination strategy is complicated due to epidemiology of disease

- Largest risk of cCMV disease due to vertical transmission is during first trimester
- Proposed vaccination strategy for candidate vaccine would include vaccination *before* pregnancy

Outcome	Annual number of affected children	%
Neonatal death	80	0.5
cCMV disease†	2800	17
Long-term outcomes *(selected)*		
Sensorineural hearing loss	825	5
Cognitive impairment	495	3
Motor impairment	165	1

[ACIP CMV April 2025 Presentation]

Vaccine Candidate: Moderna mRNA-1647 CMV vaccine

- Currently in Phase 3 trials
- Final efficacy analysis anticipated in late 2025
- Population: 16-40 years, females
- 3-dose 100 µg series regardless of serostatus
- Doses at 0, 2, 6 months

Summary: Investigational CMV Vaccine mRNA-1647 in Adults

Safety	• Vaccine generally well tolerated in adults, 18-40 years, regardless of CMV serostatus, in Phase 1 & 2 trials • No safety concerns identified from DSMB review of unblinded data in Phase 3 efficacy trial.
Immunogenicity	**CMV Seronegatives:** • Vaccination elicited antibody-mediated immunogenicity that exceeded levels observed in natural infection • Immune persistence observed through 3 years after vaccination **CMV Seropositives:** • Vaccination boosted immune responses above baseline after first dose
Efficacy	• Trial ongoing in seronegative and seropositive females, 16-40 years of age

2025 April 15 - CMV ACIP_CO

Lyme Disease Vaccine

- Lyme vaccines in development
  - VLA15- a multivalent recombinant protein vaccine targeting six serotypes of Borrelia
  - Several messenger RNA vaccine candidates also in early clinical trials

- ACIP workgroup being established to discuss future recommendations
  - Presenting at the June ACIP meeting
  - Objectives: Review epidemiology and burden of disease, risk data and vaccine candidates

Influenza Vaccines

- Recommendation made for composition of U.S. licensed influenza vaccines for the 2025-2026 season
  - Includes composition update to the influenza A (H3N2) component

- FluMist (LAIV3) FDA approved for self or caregiver administration
  - Expected to be available for the 2025-2026 influenza season

Current HPV Vaccination Recommendations

Routine vaccination (11-12 years)	Catch-up vaccination (15-26 years)	Shared clinical decision-making (27-45 years)
• 2 doses (0, 6-12 months) • Can be started at age 9 years	• 3 doses (0,1-2, 6 months) if starting on or after the 15th birthday or if immunocompromising condition	• 3 doses (0, 2 and 6 months)

HPV Workgroup

ACIP HPV workgroup reviewing possible changes on two different issues:

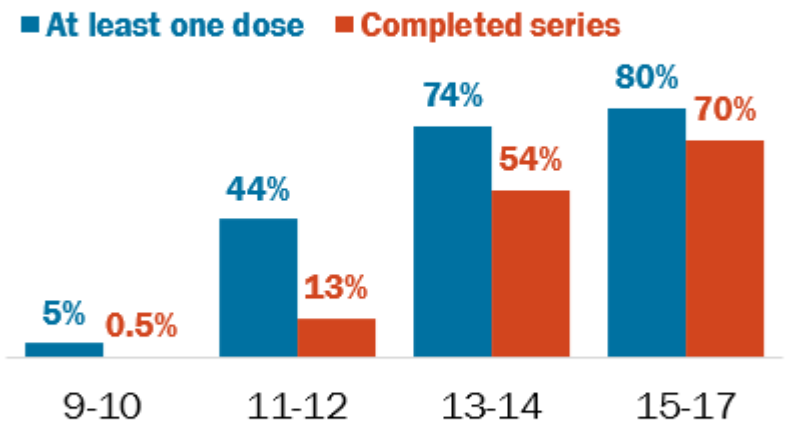
1. Wording to state that routine vaccination is recommended at 9-12 years
   "HPV vaccination is routinely recommended at age 9-12 years"

2. Recommended number of doses (1 dose for persons 9-14 years and 2-doses for persons aged 15 and older)

For now, we continue following the 2 and 3-dose vaccine schedule

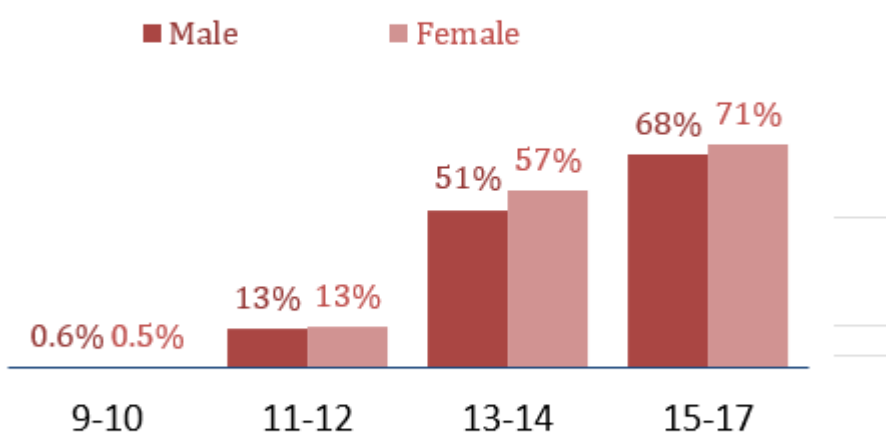
Vermont HPV Rates

HPV vaccine series: Percentage of Vermonters who received at least one dose and/or completed the series by current age



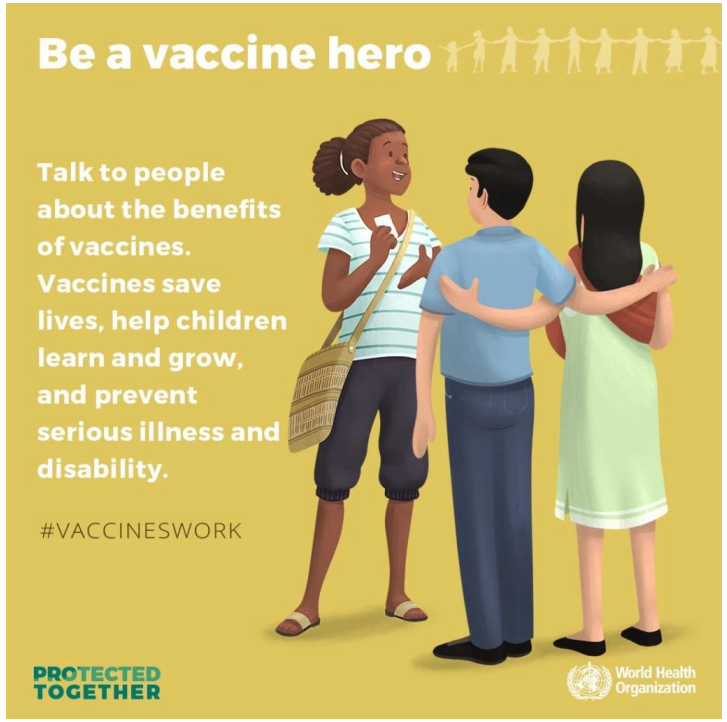
Sources: Vermont Immunization Registry (2/27/2025); Vermont Department of Health Population Estimates (2023)

HPV vaccine series: Percentage of Vermonters who completed the series by current age and gender



Sources: Vermont Immunization Registry (2/27/2025); Vermont Department of Health Population Estimates (2023)

ACIP COVID-19 Vaccine Discussion



- Moderna messenger RNA-1283 COVID-19 vaccine
- Epidemiology and risk factors for COVID-19 hospitalizations
- Vaccine effectiveness update
- Workgroup considerations for use of 2025-2026 COVID-19 vaccines

Current COVID-19 Vaccine Recommendations

Routine vaccination:

Children 6 months - 4 yrs:

- Unvaccinated: multidose initial series with 2024-2025 messenger RNA vaccine
- Previously completed initial series: 1 dose of 2024-2025 messenger RNA vaccine

People 5 – 64 yrs:

- 1 dose of age-appropriate 2024-2025 vaccine

People 65 yrs+:

- 2 doses of 2024-2025 vaccine, 6 months apart (2 month minimum interval)

Moderate or severe immunocompromise:

Unvaccinated:

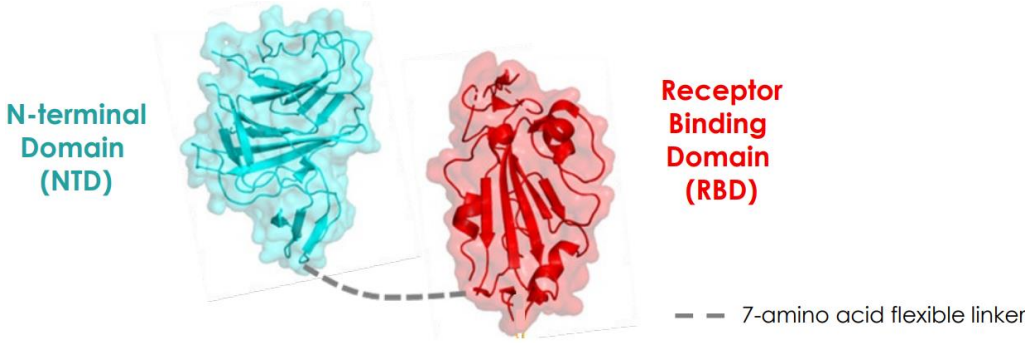
- Multidose initial vaccination series with age-appropriate 2024-2025 vaccine and 1 dose of 2024-2025 6 months after completing initial series (minimum interval 2 months)

Previously completed an initial series:

- 2 doses of 2024-2025 vaccine, 6 months apart (minimum interval 2 months)

May receive additional doses under shared clinical decision-making (minimum interval 2 months)

Moderna Messenger RNA-1283 COVID-19 Vaccine



[2025 April 15 - mRNA-1283 ACIP]

- Contains a lower messenger RNA dose (10 µg; a fifth of the dose of Spikevax)
- Study compared mRNA-1283 and Spikevax across three primary objectives:
  - Safety and reactogenicity
  - Non-inferior immunogenicity
  - Non-inferior relative vaccine efficacy (rVE)

COVID-19 Vaccine and Long COVID

COVID-19 mRNA vaccination associated with reduced occurrence of Long COVID following COVID-19: June 2021-September 2022

Among children 5 – 17 years:

Completion of the primary vaccine series prior to infection associated with **reduced likelihood** of Long COVID symptoms[1]

- **57% for 1 or more symptoms**
- **73% for 2 or more symptoms**
- **72% for respiratory symptoms**

Among adults:

3 doses of original monovalent vaccine prior to infection associated with **reduced likelihood** of Long COVID symptoms[2]

- **63% for gastrointestinal symptoms**
- **44% for neurological symptoms**
- **52% for other non-specific symptoms**

COVID-19 ACIP Work Group Call April 2025

1. Yousaf AR, Mak J, Gwynn L, et al. COVID-19 Vaccination and Odds of Post–COVID-19 Condition Symptoms in Children Aged 5 to 17 Years. *JAMA Netw Open.* 2025;8(2):e2459672.
2. Mak J, Khan S, Britton A et al. Association of Messenger RNA Coronavirus Disease 2019 (COVID-19) Vaccination and Reductions in Post COVID Conditions Following Severe Acute Respiratory Syndrome Coronavirus 2 Infection in a US Prospective Cohort of Essential Workers, The Journal of Infectious Diseases, Volume 231, Issue 3, 15 March 2025, Pages 665–676

ACIP Workgroup Considerations for 2025-2026 COVID-19 Vaccine

Summary of international COVID-19 booster* recommendations

	UK[1]	Canada[2]	Australia[3]	WHO	US
Older adults	**≥65 years:** 12 months **≥75 years and long-term care facility residents:** 6 months	**≥80 years and long-term care facility residents:** 6 months **65-79 years:** 12 months; *may receive every 6 months*	**≥75 years:** 6 months **≥65 years:** 12 months, *may receive every 6 months*	**Country dependent, often ≥75 or ≥80 years:** 6–12-month interval **Country dependent, often 50 or 60 years**: 12-month interval	**≥65 years:** 6 months
Adults (routine)	Not recommended	*May receive every 12 months*	*May receive every 12 months*	Not routinely recommended **Pregnant adults and adolescents:** dose in each pregnancy***	12 months
High-risk adults**	12 months	12 months	*May receive every 12 months*	12 months	12 months
Immunocompromised adults	6 months	6 months	12 months, *may receive every 6 months*	6-12 months	6 months, *plus may receive additional doses at 2-month intervals*
Children (routine)	Not recommended	*May receive every 12 months*	Not recommended	Not routinely recommended	12 months
High-risk children**	12 months	12 months	Not recommended	Not routinely recommended	12 months
Immunocompromised children	6 months	6 months	**Under 5 years:** not recommended ***5-17 years:*** *May receive every 12 months*	6-12 months	6 months, *plus may receive additional doses at 2-month intervals*

1 https://assets.publishing.service.gov.uk/media/66e7fbf624c4f1826d81bb32/Greenbook-chapter-14a-20240916.pdf 2 https://www.canada.ca/en/public-health/services/publications/vaccines-immunization/national-advisory-committee-immunization-summary-guidance-covid-19-vaccines-2025-summer-2026.html 3 https://www.health.gov.au/our-work/covid-19-vaccines/getting-your-vaccination/booster-doses

* Booster refers to people who have already completed an initial series. For people who are unvaccinated, more doses may be needed than are shown in this table

** Adults and children at increased risk of SARS-CoV-2 exposure **or** severe COVID-19 disease.

*** Ideally during in the second trimester or at any opportunity

Italics indicate discretionary/shared clinical decision-making recommendations

COVID-19 ACIP Work Group Call April 2025

Looking Forward: COVID-19 Vaccine

- June ACIP meeting to recommend 2025-2026 COVID-19 vaccine recommendations
- Novavax BLA approval delayed
- Changes in federal requirements for vaccine approval – placebo-controlled studies requirement
  - "Under Secretary Kennedy's leadership, all new vaccines will undergo safety testing in placebo-controlled trials prior to licensure — a radical departure from past practices"
- Possible changes in ACIP

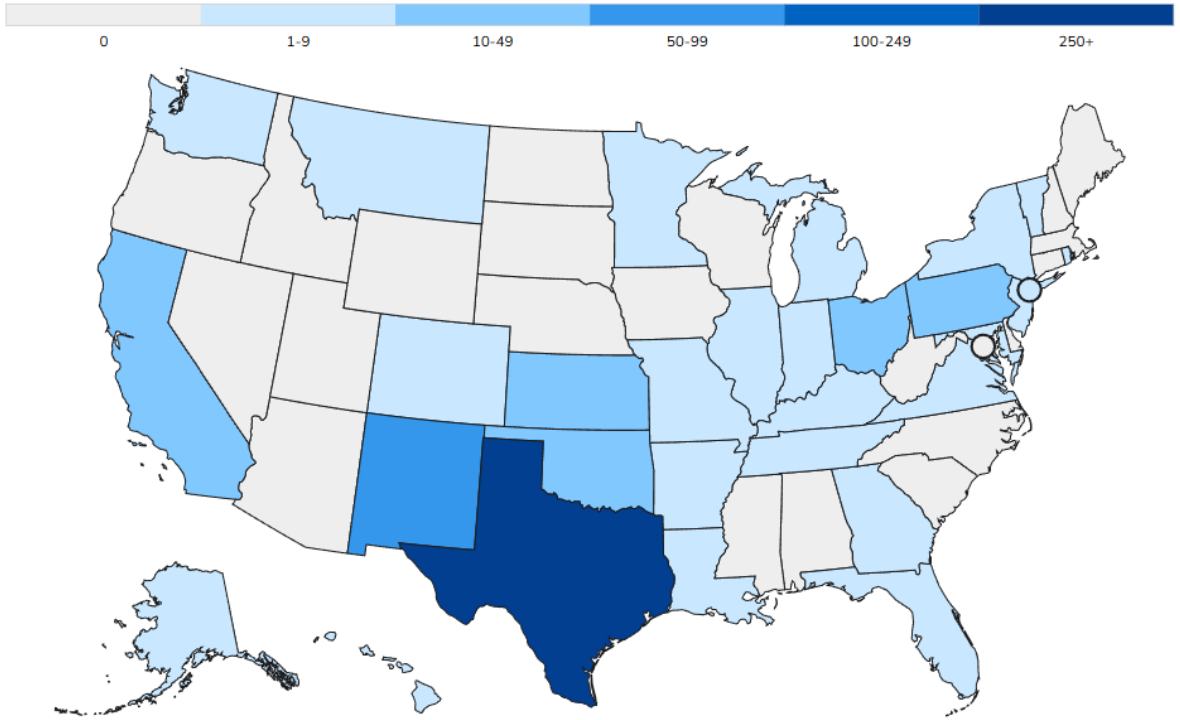
Other ACIP Agenda Topics

- Mpox
- Pneumococcal
- RSV immunization products

Recordings and slides available

Measles Update

CDC Measles Update



[Measles Cases and Outbreaks | Measles (Rubeola) | CDC]

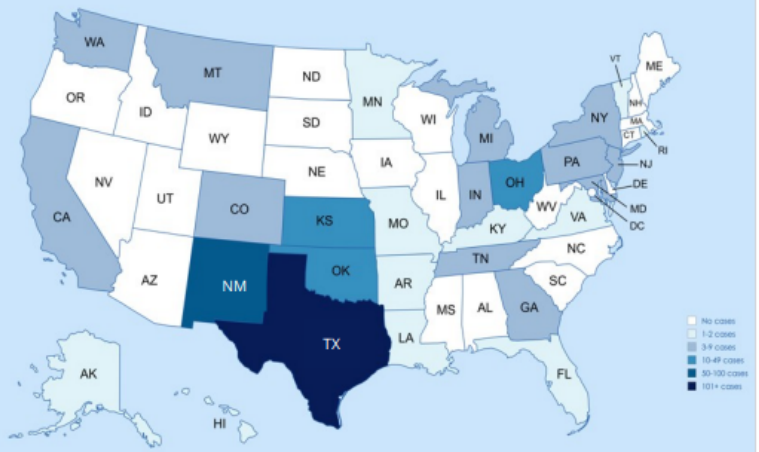
- CDC US case count: 935 (as of May 2nd, 2025)
  - Confirmed case count updated weekly
  - Probable cases not included
- 30 Jurisdictions
- 12 outbreaks reported
  - 93% of cases are outbreak related
- Deaths
  - 2 in Texas
  - 1 in New Mexico

2025 US Measles Update – Yale School of Public Health

US OUTLOOK

** NOTE: The information on this page has been gathered by reviewing data from state and local health departments, news media sources, and the Center for Outbreak Response Innovation (CORI)*

967*



The increase in measles cases can be attributed to falling vaccination rates and increased importation of travel-related cases, which occur when unvaccinated people acquire measles abroad and bring it back to the U.S.

STATE	CASES
TEXAS **	702
NEW MEXICO	67
KANSAS	46
OHIO	38
OKLAHOMA	16
PENNSYLVANIA	13
CALIFORNIA	10
MICHIGAN	9
INDIANA	8
MONTANA	7
TENNESSEE	6
COLORADO	5
WASHINGTON	5
ARKANSAS	4
NEW YORK	4
GEORGIA	3
ILLINOIS	3
MARYLAND	3
NEW JERSEY	3
ALASKA	2
FLORIDA	2
HAWAII	2
LOUISIANA	2
MINNESOTA	2
KENTUCKY	1
MISSOURI	1
RHODE ISLAND	1
VERMONT	1
VIRGINIA	1
TOTAL	967

OUTBREAKS

- SMALL OUTBREAK (3-9)
- MEDIUM OUTBREAK (10 - 49)
- LARGE OUTBREAK (50 OR MORE)

An outbreak of measles is defined as three or more laboratory-confirmed cases that are temporally related and epidemiologically or virologically linked.

*As of 4/30/2025, 2300 hrs. EDT, there are approximately **977** measles cases (including confirmed and suspected cases) across 29 states.*

*Currently, there are **eight measles outbreaks**:*

1. *West Texas, involving 29 counties in **Texas**, 4 counties in **New Mexico**, 2 counties in **Oklahoma**, and the Cherokee Nation in Oklahoma*
2. *8 counties in **Kansas***
3. *Ashtabula and Knox Counties, **Ohio***
4. *Erie County, **Pennsylvania***
5. *Allen County, **Indiana***
6. *Bergen County, **New Jersey***
7. *metro Atlanta, **Georgia***
8. *Gallatin County, **Montana***
9. *Montcalm County, **Michigan** (linked to Ontario Outbreak)*
10. *Upper Cumberland region - **Tennessee***

**** TEXAS CASES NOT ASSOCIATED WITH OUTBREAK: 14**

- 1 case – Atascosa County
- 1 case – Brazoria County
- 1 case – Collin County
- 1 case – Adult, Fort Bend (travel-related)
- 4 cases – Harris County
- 2 cases – Adults, Rockwall County (travel-related)
- 1 case - Shackelford
- 2 case – Travis County
- 18 cases – Upshur County

TEXAS CASES ASSOCIATED WITH THE OUTBREAK: 688

YSPH VMOC Special Report - Measles Outbreak Southwest US 5-3-2025.pptx

2025 Canada Measles Update – Yale School of Public Health

- 1,802 cases, mostly in Ontario
- No deaths reported
- Per Government of Canada, likelihood of prolonged transmission in next six months is moderate to high

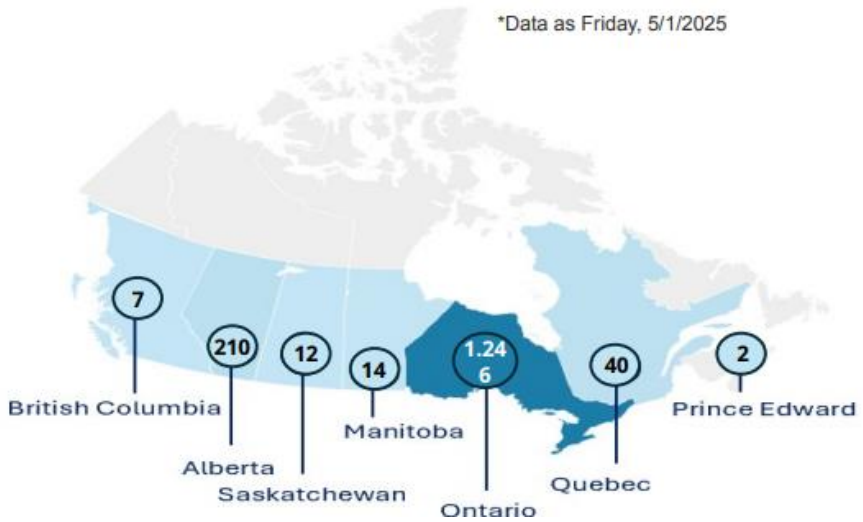
MORBIDITY IN 2025	
PROVINCE	CASES
ONTARIO	1,246* (+223)
ALBERTA	210 (+40)
MANITOBA	14 (+1)
BRITISH COLUMBIA	7 (+1)
SASKATCHEWAN	12
QUEBEC	40
PRINCE EDWARD ISLAND	2
TOTAL	1,531 (+270)

* From October 18, 2024 to April 23, 2025, Ontario has reported a total of 1,020 measles cases (884 confirmed, 136 probable) associated with this outbreak occurring in 15 public health units

2025 US Measles Update – Yale School of Public Health

CANADA OUTBREAK:

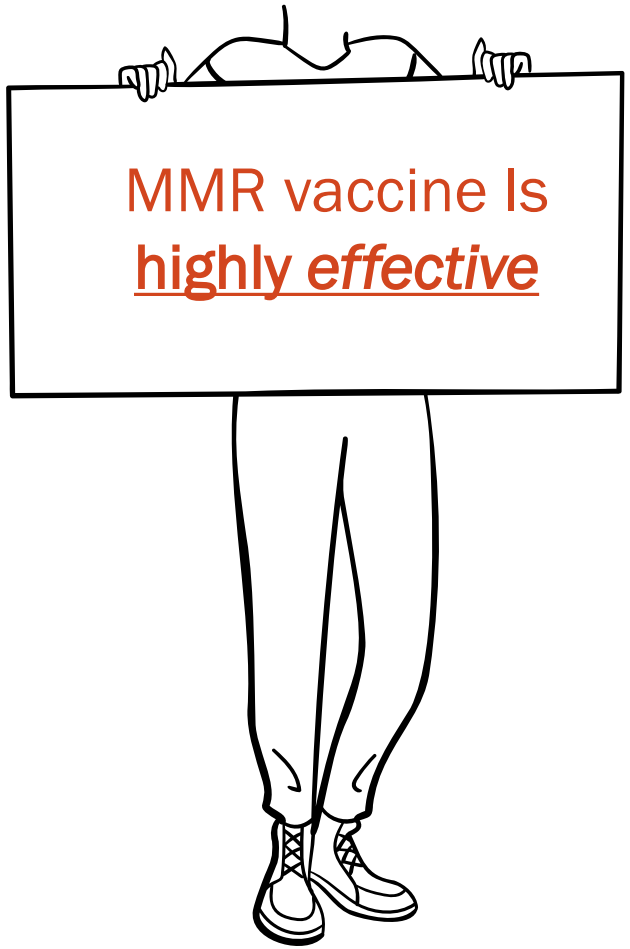
- An ongoing outbreak of measles in Ontario has been traced back to a large gathering in New Brunswick last fall that was attended by guests from Mennonite communities. On October 18, 2024, exposure to a travel-related case in New Brunswick led to measles cases in Ontario. **The Ontario outbreak continues to escalate**.
- **Alberta is seeing a large number of cases since Easter.**
- Manitoba has also reported measles cases related to this outbreak.
- New Brunswick declared their outbreak over on 1/7/2025.
- Quebec declared its outbreak on 4/22/2025 after no new cases in 32 days.



- Quebec had 40 cases and declared its outbreak was over on 4/22/25 after no new cases in 32 days
- Vermonters traveling to Quebec might consider confirming evidence of measles immunity prior to travel

Measles

- Measles was declared eliminated in the United States in 2000
- U.S. MMR coverage among kindergarteners is now below the 95% coverage target
- Global measles activity is increasing, meaning more chances of an unvaccinated person infected with measles abroad returning to the United States



Vermont Department of Health Measles Resources

Measles Media Campaign (March/April 2025)

Measles Messaging Toolkit for Schools and Child Care Facilities (updated March 2025)

Measles | Vermont Department of Health

Autism & Vaccines

History of myth: Wakefield study

1998: Andrew Wakefield (gastroenterologist) and colleagues published a study

- Sample size for study was 12 children
- No controls
- Relied on parental recall and beliefs

1998: Experts find "no evidence to indicate any link" between MMR vaccine and bowel disease or autism

2010: Study retracted by publisher

2010: Wakefield has license revoked for "serious professional misconduct"

2011: Determined to be fraudulent

Public Health and Scientific Community's Response

Study	Location, Sample Size	Findings
Madsen et al., 2002	Denmark, 537,000+ children	No difference in autism rates between vaccinated and unvaccinated children.
Andrews et al., 2004	UK, 500,000+ children	No link between MMR and autism, even in high-risk children.
Uchiyama et al., 2006	Japan, 900+ children	No difference in autism between those who received MMR vaccine and those who did not (MMR vaccine only used between 1989-1993 in Japan)
DeStefano et al., 2013	U.S., CDC study, 1,000+ children	No increased autism risk from MMR vaccine
Taylor et al., 2014	Meta-analysis, 10 studies, 1.2M+ children	No association between autism and MMR vaccine
Jain et al., 2015	U.S., 95,000+ children	MMR vaccine not associated with increased risk of autism, regardless of whether older siblings has autism.
Uno et al., 2015	Japan, 400+ children	Autism rates continued to rise even after MMR was discontinued, disproving causation.
Hviid et al., 2019	Denmark, 650,000 + children	MMR vaccine does not increase risk for autism, nor does it trigger autism in susceptible children.

Bakke, R. (April 23, 2024). Pediatric Vaccine Conversations: Addressing Common Concerns. https://www.youtube.com/watch?v=1KCv-jdSKH8

Thimerosal

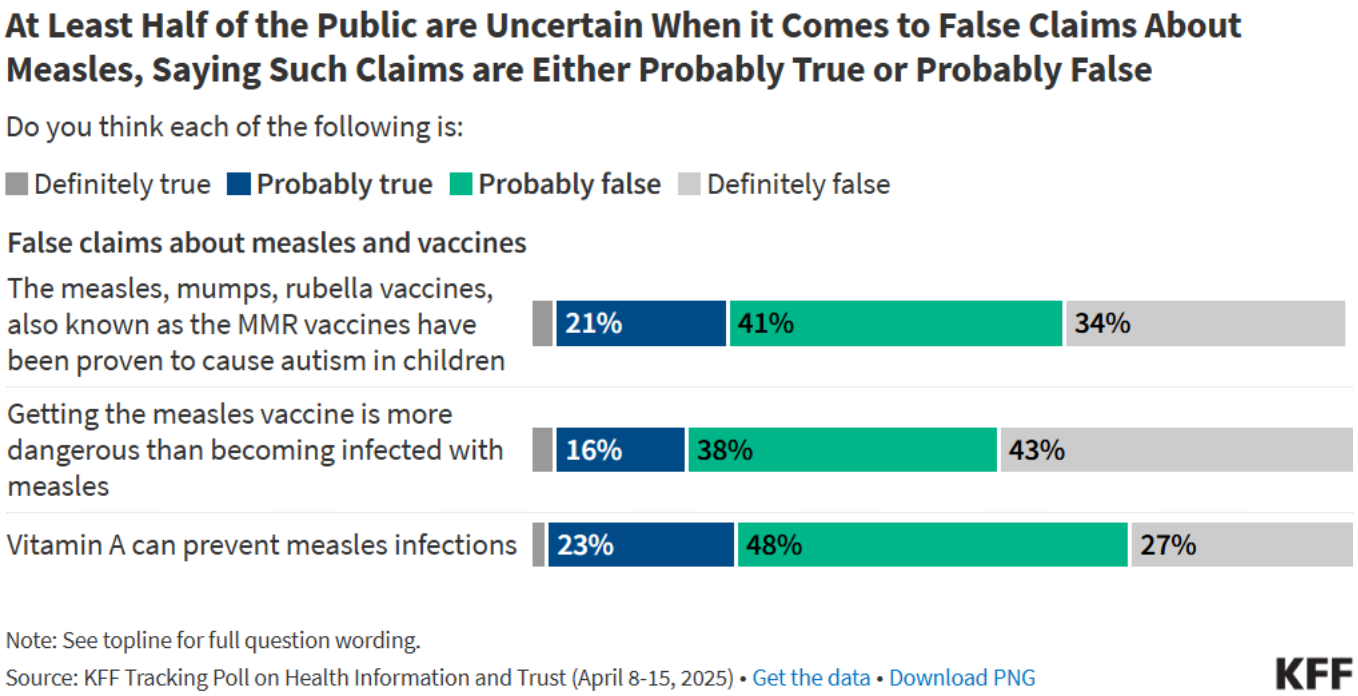
- Thimerosal is a vaccine additive to prevent contamination of vaccines.
  - Thimerosal is a different type of mercury that does not stay in the body.
  - Has been used safely in vaccines since the 1930s.
- Thimerosal has not been used in vaccines for children since 2011.
  - Thimerosal is still used in some multi-dose flu vaccines; help parents identify single-dose flu options if desired.
- Many studies have been conducted examining thimerosal-containing vaccines and autism with no harm found.
  - In 2004, after reviewing over 200 scientific studies, IOM concluded studies “consistently provided evidence of no association between thimerosal-containing vaccines and autism”

For more about thimerosal and vaccines:

Thimerosal and Vaccines | Vaccine Safety | CDC

Vaccine Ingredients: Thimerosal | Children's Hospital of Philadelphia

In the News: MMR Vaccines and Autism



The Washington Post
https://www.washingtonpost.com › ... › vaccine-skeptic-hhs-rfk-immuni...

Vaccine skeptic hired to head federal study of immunizations and autism

Mar 25, 2025 · A vaccine skeptic who has long promoted false claims about the connection between immunizations and autism has been tapped by the federal government to conduct a critical study of possible links ...

ABC News
https://abcnews.go.com › Health › cdc-study-vaccines-autism-despite-s...

CDC to study vaccines and autism, despite several studies already ...

Mar 8, 2025 · The Centers for Disease Control and Prevention (CDC) will study whether vaccines cause autism, despite numerous existing studies already showing there is no link.

[Public Perception of Measles Vaccines and Unsubstantiated Treatment Claims — The Monitor | KFF]

How often are your families raising concerns about vaccines and autism?

1 – Not at all

2 – Occasionally

3 – Frequently

4 – All the time

Tips for Success: Navigating Parent Conversations

- Approach with empathy and respect.
- Create a vaccine-positive culture in your office.
  - Everyone is confident in their role in promoting vaccines.
  - Resources and education available for families and staff.
- Allow time and space for decision.
- Utilize motivational interviewing techniques
- Utilize a preemptive education approach whenever possible.

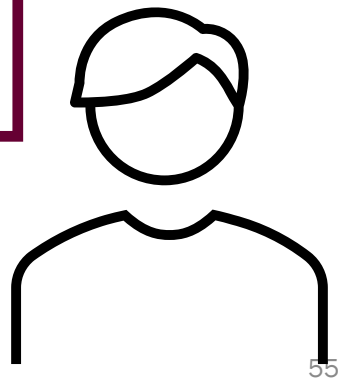
Skill/Concept	Purpose	Example
Open Questions	Learn about their values and concerns	"What are your concerns about the vaccine?"
Affirmations	Highlight strengths	"You're the kind of person who thinks things through."
Reflections	Convey empathy and understanding	"On one hand you're unsure about the vaccine, and on the other hand you want your child to have as much protection as possible."
Emphasizing Autonomy	Acknowledge and respect their decision-making power	"This really is up to you."

Resource: Provider Guide: Working with Vaccine Hesitancy

Role Play Example

Today your child is due for vaccines to protect against hepatitis A, measles, mumps, rubella and varicella. I'll have the nurse get those ready to administer as soon as we are finished.

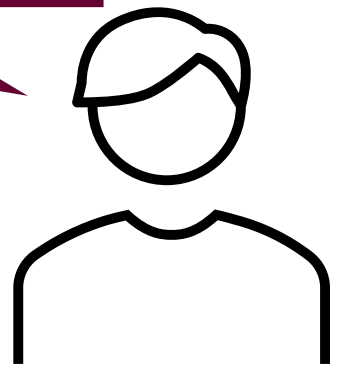
Wait, isn't that measles and mumps vaccine the MMR vaccine? I did some reading before the appointment, and I don't think I want to do that today.



Role Play Example

Yes, the MMR vaccine is the best protection for children against measles, mumps and rubella. Are you willing to talk more about what you read?

Well, yeah, I have read that MMR vaccine might cause autism. I don't want to take any chances.

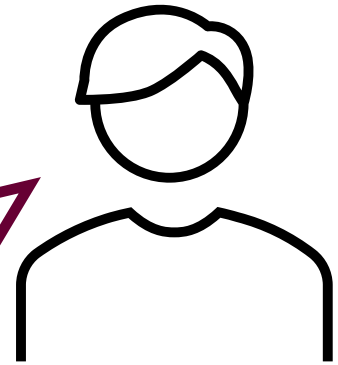


I completely understand why this would be concerning, and it is clear you want to make the best decision for your child. Many studies have been completed that have found no relationship between MMR vaccines and autism.

Role Play Example

I want to reassure you that claims about vaccines causing autism are not true and the MMR vaccine is the best defense against protecting your child against measles, mumps and rubella which are serious diseases. Some children do have mild side effects to the vaccine, like fever or pain where the vaccine is administered. Decades of research have shown the MMR vaccine is safe and severe reactions are extremely rare – much rarer than the complications from measles itself.

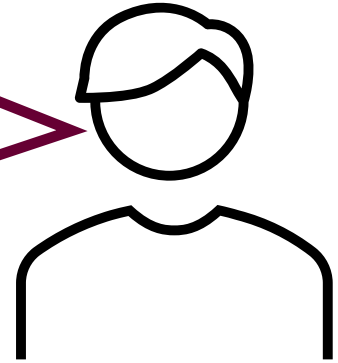
I don't know. I've read so much about autism and vaccines, and my friend's kid was diagnosed with autism shortly after being vaccinated. Also, I read the CDC is studying vaccines and autism. It just doesn't feel safe.



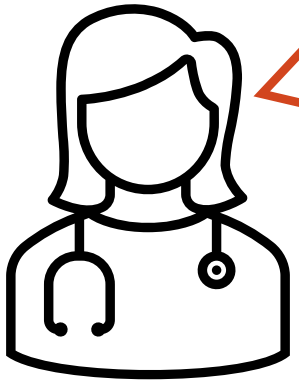
Role Play Example

That makes sense. It can be overwhelming to make these choices when there is so much conflicting information. My goal isn't to pressure you, and I want to make sure you have all the facts and information to make the best decision for your child. If you are interested, I can show you some of the actual research and safety data so you can review it yourself. We can plan to discuss this again at your child's next appointment.

I think I'd like to see that. Making the right decision is really important to me.

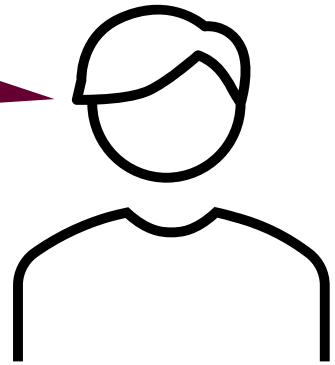


Role Play Example



I appreciate how much thought you're putting into this. I will have the nurse provide the resources we discussed. You may call the office with any questions you have between now and our next appointment in three months. I'm happy to answer them and have continued discussion.

Thank you. We will see you at the next visit.



Role Play Example Recap

- Provider asked for consent to have additional conversation
- Parents concerns were validated
- No pressure conversation
- Reputable resources shared
- Open conversation fosters trusting relationship

* Also consider discussing risks of measles infection vs. risk of vaccine side effects

How confident are you in your ability to navigate conversations with parents about autism and vaccines?

- Not confident
- Somewhat confident
- Confident
- Very confident

Which of the following resources do you need to better navigate conversations with parents regarding autism and vaccines?

- I do not need any resources
- Additional training for me or my team
- Pamphlets
- Posters
- Videos for waiting room and/or portal
- Scripts for me and/or my staff
- Other – provide detail

Vaccines and Autism Resources

Print Materials:

- Vaccine and Autism: What You Should Know Q&A | Children's Hospital of Philadelphia | Spanish version
- Q&A Thimerosal | Spanish version
- The Facts about Vaccine Safety: What You Should Know | Vaccine Education Center at Children's Hospital of Philadelphia | Spanish version
- Childhood_Vaccinations_Fact_Sheet.pdf

Videos:

- Do Vaccines Cause Autism? – YouTube
- Is the MMR Vaccine Safe? - YouTube

Other Resources:

- Statement: National Disability Groups Unite to Protect Lives and Dispel Vaccine Myths in the Autism Community | Autism Society
- Pediatric Vaccine Conversations: Addressing Common Concerns – YouTube
- Provider Guide: Working with Vaccine Hesitancy
- Are Vaccines Safe? - Vaccinate Your Family
- Vaccine Adverse Events: Separating Myth from Reality | AAFP
- The Truth About Autism and Vaccines - Vaccinate Your Family

Save The Date

2025
Immunization & Infectious Disease Conference
Vermont

Wednesday, May 21 | Hotel Champlain, Burlington

The Power of Community Partnerships:
Strengthening Public Health Together

Join us to learn about the latest in infectious disease and immunizations!

This conference is ideal for primary care providers, school nurses, public health professionals, pharmacists, and more.

Learn more at HealthVermont.Gov/IZIDConference

2025 Immunization and Infectious Disease Conference Agenda Highlights

- Plenary from National Foundation for Infectious Disease (NFID) Medical Director
- Breakout sessions:
  - Back to Vax, two parents that self-identify as former anti-vaxxers
  - Vaccine Confidence
  - Immunization Program 101
  - Immunization Registry/Immunization Data
- Full Agenda

Registration closes on Monday May 12th

Register Here

Questions and Open Conversation

VERMONT
DEPARTMENT OF HEALTH

Thank you!

Let's stay in touch

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