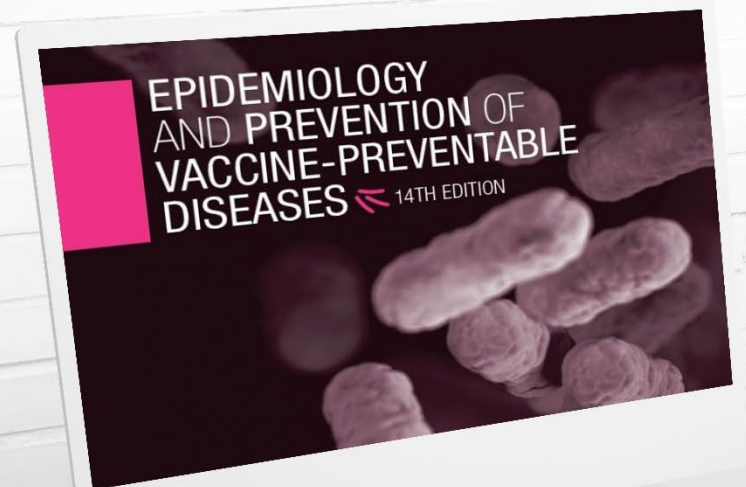


General Best Practices for Immunization, Part 2

Pink Book Web-on-Demand Series

July 11, 2024

Andrew Kroger, MD, MPH
Medical Officer
Immunization Services Division





Learning Objectives

- Describe the fundamental principles of the immune response.
- Describe immunization best practices.
- Describe an emerging immunization issue.
- For each vaccine-preventable disease, identify those for whom routine immunization is recommended.
- For each vaccine-preventable disease, describe characteristics of the vaccine used to prevent the disease.
- Locate current immunization resources to increase knowledge of team's role in program implementation for improved team performance.

Continuing Education Information

- To claim continuing education (CE) for this course, please follow the steps below by July 2, 2026.
- Search and register for course **WD4810-071124** in **CDC TRAIN**.
- Pass the post-assessment at 80%.
- Complete the evaluation.
- Visit “Your Learning” to access your certificates and transcript.
- If you have any questions, contact **CDC TRAIN** at train@cdc.gov or CE Coordinator, Melissa Barnett, at MBarnett2@cdc.gov

CDC TRAIN

[HOME](#) [COURSE CATALOG](#) [CALENDAR](#) [RESOURCES](#) [HELP](#)



Disclosure Statements

- In compliance with continuing education requirements, all planners and presenters must disclose all financial relationships, in any amount, with ineligible companies during the previous 24 months as well as any use of unlabeled product(s) or products under investigational use.
- CDC, our planners, and content experts, wish to disclose they have no financial relationship(s) with ineligible companies whose primary business is producing, marketing, selling, reselling, or distributing healthcare products used by or on patients.
- Content will not include any discussion of the unlabeled use of a product or a product under investigational use.
- CDC did not accept financial or in-kind support from any ineligible company for this continuing education activity.

Disclosure Statements

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

General Best Practices for Immunization

- Timing and spacing
- Contraindications and precautions
- Preventing and managing adverse reactions to immunization
- Vaccine administration
- Storage and handling
- Altered immunocompetence
- Special situations
- Vaccination records
- Vaccination programs
- Vaccine information sources

Contraindications and Precautions

- **Contraindication**

- A condition in a recipient that increases the risk for a serious adverse reaction
- Action: Do **not** give the vaccine dose.

- **Precaution**

- A condition in a recipient that might increase the risk for a serious adverse reaction, might cause diagnostic confusion, or might compromise the ability of the vaccine to produce immunity
- Action: **Defer** the vaccine dose.

1

Screening

Screening

- **Specific questions intended to identify contraindications or precautions to vaccination.**
- **Use of a standardized form will facilitate effective screening.**
- **Screening must occur at every vaccination encounter (not just before the first dose).**
- **The following questions are written from the perspective of the pediatric visit, but can be adjusted for an adult visit.**



Screening Questions

- **Is the child sick today?**
- **Does the child have an allergy to any medications, food, latex, or any vaccine?**
- **Has the child had a serious reaction to a vaccine in the past?**

Screening Questions

- **Has the child had a seizure, brain, or nerve problem?**
- **Has the child had a long-term problem with heart, kidney, lung (including asthma), no spleen, cochlear implant, spinal fluid leak, regular aspirin or salicylate medication, metabolic disease (such as diabetes), or a blood disorder?**
- **Has the child had a history of intussusception?**

Screening Questions

- Does the child have cancer (e.g., leukemia), HIV/AIDS, or any other immune system problem?
- Has the child taken prednisone, other steroids, or anticancer medications, or had radiation treatments in the past 3 months?
- Has the child taken medications for rheumatoid arthritis, Crohn's disease, or psoriasis?
- Has the child had Multisystem Inflammatory Syndrome in children (MIS-C)?
- Has the child had myocarditis or pericarditis?

Screening Questions

- **Has the child received a transfusion of blood or blood products, or been given a medicine called “immune (gamma) globulin” in the past year?**
- **Is the child/teen pregnant or is there a chance they could become pregnant during the next month?**
- **Has the child received vaccinations in the past 4 weeks?**

Screening Checklist for Contraindications to Vaccines for Children and Teens

PATIENT NAME _____

DATE OF BIRTH / /
month / day / year

For parents/guardians: The following questions will help us determine which vaccines your child may be given today. If you answer "yes" to any question, it does not necessarily mean your child should not be vaccinated. It just means additional questions must be asked. If a question is not clear, please ask your healthcare provider to explain it.

	yes	no	don't know
1. Is the child sick today?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Does the child have allergies to medicine, food, a vaccine component, or latex?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Has the child had a serious reaction to a vaccine in the past?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Does the child have a long-term health problem with heart, lung (including asthma), kidney, liver, nervous system, or metabolic disease (e.g., diabetes), a blood disorder, no spleen, a cochlear implant, or a spinal fluid leak? Are they taking regular aspirin or salicylate medication?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. For children age 2 through 4 years: Has a healthcare provider told you that the child had wheezing or asthma in the past 12 months?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. For babies: Have you ever been told the child had intussusception?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Has the child, a sibling, or a parent had a seizure; has the child had a brain or other nervous system problem?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Has the child ever been diagnosed with a heart condition (myocarditis or pericarditis) or have they had Multisystem Inflammatory Syndrome (MIS-C) after an infection with the virus that causes COVID-19?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Does the child have an immune-system problem such as cancer, leukemia, HIV/AIDS?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. In the past 6 months, has the child taken medications that affect the immune system such as prednisone, other steroids, or anticancer drugs; drugs to treat rheumatoid arthritis, Crohn's disease, or psoriasis; or had radiation treatments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Does the child's parent or sibling have an immune system problem?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. In the past year, has the child received immune (gamma) globulin, blood/blood products, or an antiviral drug?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Is the child/teen pregnant?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Has the child received vaccinations in the past 4 weeks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Has the child ever felt dizzy or faint before, during, or after a shot?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Is the child anxious about getting a shot today?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FORM COMPLETED BY _____ DATE _____

FORM REVIEWED BY _____ DATE _____

Did you bring your immunization record card with you? yes no

It is important to have a personal record of your child's vaccinations. If you don't have one, ask the child's healthcare provider to give you one with all your child's vaccinations on it. Keep it in a safe place and bring it with you every time you seek medical care for your child. Your child will need this document to enter day care or school, for employment, or for international travel.



FOR PROFESSIONALS www.immunize.org / FOR THE PUBLIC www.vaccineinformation.org

www.immunize.org/catg.d/p4060.pdf
Item #P4060 (12/15/2023)



Scan for PDF

Invalid Contraindications

- Disease exposure
- Mild illness or convalescence
- Preterm birth
- Breastfeeding
- Allergy to products not present in vaccine or allergy that is not severe (e.g., anaphylactic)
- Antibiotic therapy
- Pregnant person in the household
- Family history of adverse events after vaccination
- Tuberculin skin testing

Invalid Contraindications

- **Mild illness**
 - Vaccinate with
 - Low-grade fever
 - Upper respiratory infection
 - Otitis media
 - Mild diarrhea

Household Contacts and Pregnancy

- **Susceptible household contacts of pregnant people:**
 - Should receive all recommended vaccines, including MMR, varicella, and rotavirus vaccines if indicated
 - Can receive either non-live influenza vaccine or LAIV

Invalid Contraindications

- **Preterm birth (less than 37 weeks)**
 - Generally, infants and children should be immunized according to chronologic age (not gestational age)
 - Use full recommended dose
 - Birth weight and size not factors but, as with all rules, there are exceptions (HepB, nirsevimab)

Family History of Adverse Events or Medical Conditions

- A family history of adverse events after vaccination or medical conditions is generally not a contraindication.
- A family history of a congenital immunosuppressive condition is a temporary contraindication to MMR and varicella vaccines.
 - Requires screening to assure the condition is not inherited prior to receipt of MMR and varicella vaccines
- Family history can be a precaution.
 - Example: Family history of seizures is a precaution to MMRV.



Knowledge Check

A healthy child who lives in a household with a pregnant woman should be administered measles-mumps-rubella (MMR) vaccine.

- A. True
- B. False



Answer

A healthy child who lives in a household with a pregnant woman should be administered measles-mumps-rubella (MMR) vaccine.

A. True



B. False

2

Vaccine Safety

Comparison of 20th Century Annual Morbidity and Current Morbidity: Vaccine-preventable Diseases

Disease	20th Century Annual Morbidity [†]	2023 Reported Cases ^{††}	Percent Decrease
Smallpox	29,005	0	100%
Diphtheria	21,053	2	>99%
Measles	530,217	47	>99%
Mumps	162,344	429	>99%
Pertussis	200,752	5,611	97%
Polio (paralytic)	16,316	0	100%
Rubella	47,745	3	>99%
Congenital Rubella Syndrome	152	0	100%
Tetanus	580	15	97%
<i>Haemophilus influenzae</i>	20,000	27*	>99%

[†] JAMA. 2007;298(18):2155-2163

^{††} Centers for Disease Control and Prevention. National Notifiable Diseases Surveillance System, Weekly Tables of Infectious Disease Data. Atlanta, GA. CDC Division of Health Informatics and Surveillance. Available at:

https://wonder.cdc.gov/nndss/nndss_weekly_tables_menu.asp?mmwr_year=2020&mmwr_week=53. Available at: Weekly statistics from the National Notifiable Diseases Surveillance System (NNDSS). (cdc.gov). Data submitted through Dec 31, 2023; accessed on Jan 24, 2024; diphtheria and polio case counts reported by CDC Program. * *Haemophilus influenzae* type b (Hib) < 5 years of age. An additional 12 cases of Hib are estimated to have occurred among the 257 notifications of *Haemophilus influenzae* (< 5 years of age) with unknown serotype.

Importance of Vaccine Safety

- Vaccines have a long history of successfully protecting people and communities against infectious diseases.
- FDA regulates vaccines to make sure they are safe and effective.
- CDC provides clinical guidance for vaccine use.
- Before a vaccine can be approved, it must go through years of testing to show it is safe, effective, and its benefits outweigh the risks.
- Once a vaccine is approved for use, FDA and CDC continue to monitor its safety.

What is “Safe”..What is “Effective”?

- No vaccine is 100 percent safe.
- No vaccine is 100 percent effective.

Pre-clinical Vaccine Safety Studies

- Laboratory
- Animals



Prelicensure Human Studies

- Phase I, II, III trials
- Phase I trials – 20-100 individuals (safety)
- Phase II trials – several hundred (dose ranging, immunogenicity, safety)
- Phase III trials (safety, efficacy) usually include a control group that receives a placebo.
- Common adverse reactions are identified.
- Most Phase III trials include 2,000 to 5,000 participants.
- Largest recent Phase III trial was REST (rotavirus) – around 70,000 infants

Post-licensure Vaccine Safety Monitoring

- Identify rare adverse reactions – after vaccine administered to millions of persons
- Monitor increases in known adverse reactions—identify risk factors for reactions
- Identify vaccine lots with increased rates of reactions

The Vaccine Life Cycle

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

NDA

NEW DRUG
APPLICATION

VACCINE

DEVELOPMENT

CDC + FDA
Safety
Monitoring
Begins

BASIC
RESEARCH

DISCOVERY

PRE-
CLINICAL
STUDIES

IND SUBMITTED

PHASE 1
20-100
Participants

PHASE 2
100-300
Participants

PHASE 3
300-3000
Participants

CLINICAL TRIALS

NDA/BLA SUBMITTED

FDA
REVIEW

FDA APPROVAL OF 1 NEW VACCINE

ACIP
REVIEW

ACIP
RECOMMENDATION

POST-APPROVAL
MONITORING +
RESEARCH

PHASE 4
Thousands of Participants

Safety is Part of Every Vaccine

<https://www.cdc.gov/vaccinesafety/ensuringsafety/history/index.html>

3

Federal Vaccine Safety Monitoring

VAERS is the nation's early warning system for vaccine safety



VAERS

Vaccine Adverse Event Reporting System

Primarily a safety signal detection and hypothesis generating system

<http://vaers.hhs.gov>



VAERS

VAERS accepts all reports from everyone, regardless of the plausibility of the vaccine causing the event or the clinical seriousness of the event.

Key Strengths

- Can rapidly detect potential safety problems
- Can detect rare adverse events

Key Limitations

- Inconsistent quality and completeness of information
- Generally, cannot determine cause and effect

Limitations of VAERS Database

	Adverse event	No adverse event
Individual vaccinated	Vaccinated with adverse event and reported to VAERS	Vaccinated no adverse event
Individual not vaccinated	Not vaccinated with adverse event	Not vaccinated no adverse event

VAERS only contains partial data in pink cell (incomplete population data)

Not able to calculate rates of occurrence of adverse events

Not able to determine increased risk for adverse events

Which Adverse Events Should be Reported to VAERS?

- **Required reporting for health care providers¹:**
 - Any adverse event listed by the vaccine manufacturer as a contraindication to further doses of the vaccine
 - Any adverse event listed in the VAERS Reportable Events Table² following vaccination that occurs within the specified time period after vaccination
- **Healthcare providers are encouraged to report any clinically significant or unexpected adverse events (AEs) following any vaccination.**
- **With the COVID-19 vaccination program, vaccines under emergency use authorization have different reporting requirements.**

¹ National Childhood Vaccine Injury Act

² The Reportable Events Table reflects what is reportable by law (42 USC 300aa-25) to the Vaccine Adverse Event Reporting System (VAERS).

https://vaers.hhs.gov/resources/VAERS_Table_of_Reportable_Events_Following_Vaccination.pdf

VAERS Reporting Form

- VAERS reporting methods

- Option 1: online reporting tool (preferred)
- Option 2: writable PDF form combined with electronic document upload capability

VAERS Vaccine Adverse Event Reporting System
www.vaers.hhs.gov

Adverse events are possible reactions or problems that occur during or after vaccination. Items 2, 3, 4, 5, 6, 17, 18 and 21 are **ESSENTIAL** and should be completed. Patient identity is kept confidential. Instructions are provided on the last two pages.

INFORMATION ABOUT THE PATIENT WHO RECEIVED THE VACCINE (Use Continuation Page if needed)

1. Patient name: (first) _____ (last) _____
 Street address: _____
 City: _____ State: _____ County: _____
 ZIP code: _____ Phone: () _____ Email: _____

2. Date of birth: (mm/dd/yyyy) / / 3. Sex: Male Female Unknown
 4. Date and time of vaccination: (mm/dd/yyyy) / / Time: _____
 5. Date and time adverse event started: (mm/dd/yyyy) / / Time: _____
 6. Age at vaccination: _____ Years _____ Months 7. Today's date: (mm/dd/yyyy) / /
 8. Pregnant at time of vaccination?: Yes No Unknown
 If yes, describe the event, any pregnancy complications, and estimated due date if known in item 18)

9. Prescriptions, over-the-counter medications, dietary supplements, or herbal remedies being taken at the time of vaccination:

10. Allergies to medications, food, or other products:

11. Other illnesses at the time of vaccination and up to one month prior:

12. Chronic or long-standing health conditions:

INFORMATION ABOUT THE PERSON COMPLETING THIS FORM

13. Form completed by: (name) _____
 Relation to patient: Healthcare professional/staff Patient (yourself)
 Parent/guardian/caregiver Other: _____
 Street address: _____
 City: _____ State: _____ ZIP code: _____
 Phone: () _____ Email: _____

14. Best doctor/healthcare professional to contact about the adverse event: Name: _____ Phone: () _____ Ext: _____

INFORMATION ABOUT THE FACILITY WHERE VACCINE WAS GIVEN

15. Facility/clinic name: _____
 Fax: () _____
 Street address: _____
 City: _____ State: _____ ZIP code: _____
 Phone: () _____

16. Type of facility: (check one)
 Doctor's office, urgent care, or hospital
 Workplace clinic
 Public health clinic
 Nursing home or senior living facility
 School or student health clinic
 Other: _____
 Unknown

WHICH VACCINES WERE GIVEN? WHAT HAPPENED TO THE PATIENT?

17. Enter all vaccines given on the date listed in item 4: (Route is HOW vaccine was given. Body site is WHERE vaccine was given) Use Continuation Page if needed Dose number in series

Vaccine (type and brand name)	Manufacturer	Lot number	Route	Body site	Dose number in series

18. Describe the adverse event(s), treatment, and outcome(s), if any: (symptoms, signs, time course, etc.)

19. Medical tests and laboratory results related to the adverse event(s): (include dates)

20. Has the patient recovered from the adverse event(s)? Yes No Unknown

21. Result or outcome of adverse event(s): (check all that apply)
 Doctor or other healthcare professional office/clinic visit
 Emergency room/department or urgent care
 Hospitalization: Number of days (if known) _____
 Hospital name: _____
 City: _____ State: _____
 Prolongation of existing hospitalization (vaccine received during existing hospitalization)
 Life threatening illness (immediate risk of death from the event)
 Disability or permanent damage
 Patient died - Date of death: (mm/dd/yyyy) / /
 Congenital anomaly or birth defect
 None of the above

ADDITIONAL INFORMATION

22. Any other vaccines received within one month prior to the date listed in item 4: Use Continuation Page if needed Dose number in series Date Given

Vaccine (type and brand name)	Manufacturer	Lot number	Route	Body site	Dose number in series	Date Given

23. Has the patient ever had an adverse event following any previous vaccine?: (if yes, describe adverse event, patient age at vaccination, vaccination dates, vaccine type, and brand name)
 Yes _____ No Unknown

24. Patient's race: American Indian or Alaska Native Asian Black or African American Native Hawaiian or Other Pacific Islander
 White Unknown Other: _____

25. Patient's ethnicity: Hispanic or Latino Not Hispanic or Latino Unknown 26. Immuniz. prog. report number: (Health Dept use only) _____

COMPLETE ONLY FOR U.S. MILITARY/DEPARTMENT OF DEFENSE (DoD) RELATED REPORTS

27. Status at vaccination: Active duty Reserve National Guard Beneficiary Other: _____ 28. Vaccinated at Military/DoD site: Yes No

FORM FOIA VAERS 2.0 (1) (2) **CLAYTON**

VAERS Additional Information

- **Instructions for reporting to VAERS:** <https://vaers.hhs.gov/reportevent.html>
- **Additional assistance:**
 - Email at info@vaers.org
 - Phone at 1-800-822-7967



Knowledge Check

The Vaccine Adverse Event Reporting System (VAERS) can be used to establish a causal association between a vaccine and an adverse event.

- A. True
- B. False



Answer

The Vaccine Adverse Event Reporting System (VAERS) can be used to establish a causal association between a vaccine and an adverse event.

A. True

B. False ←

Post-Licensure Vaccine Safety Activities

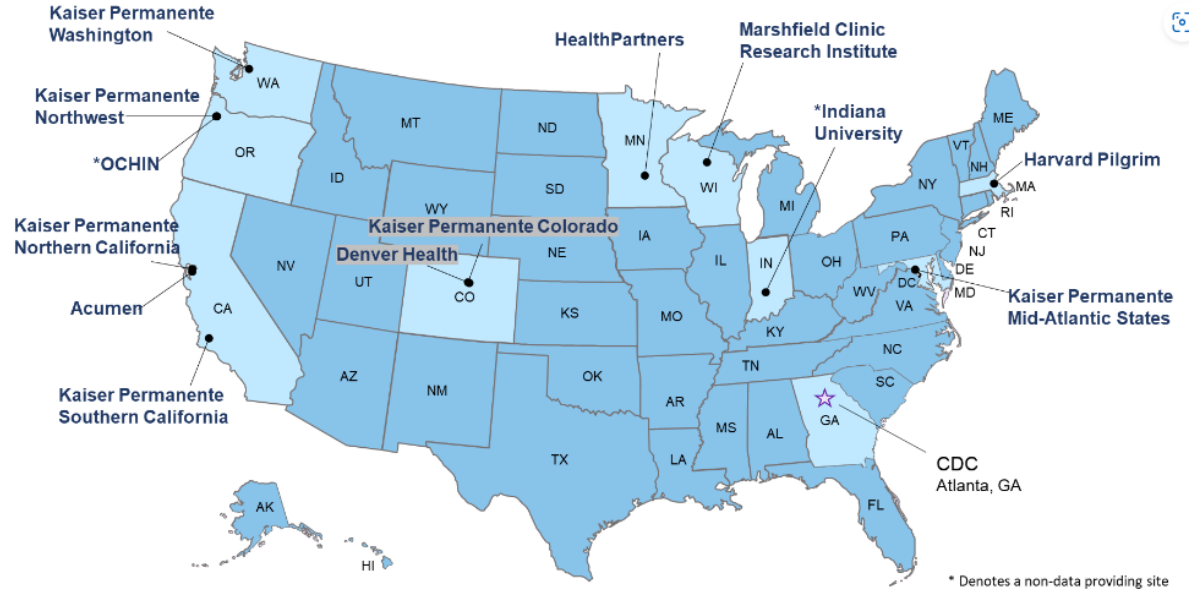
- **Phase IV trials**
 - ~10,000 participants
 - Studies safety and effectiveness over longer time period
- **Vaccine Safety Datalink (VSD)**
- **Clinical Immunization Safety Assessment Project (CISA)**
- **V-safe**



VSD

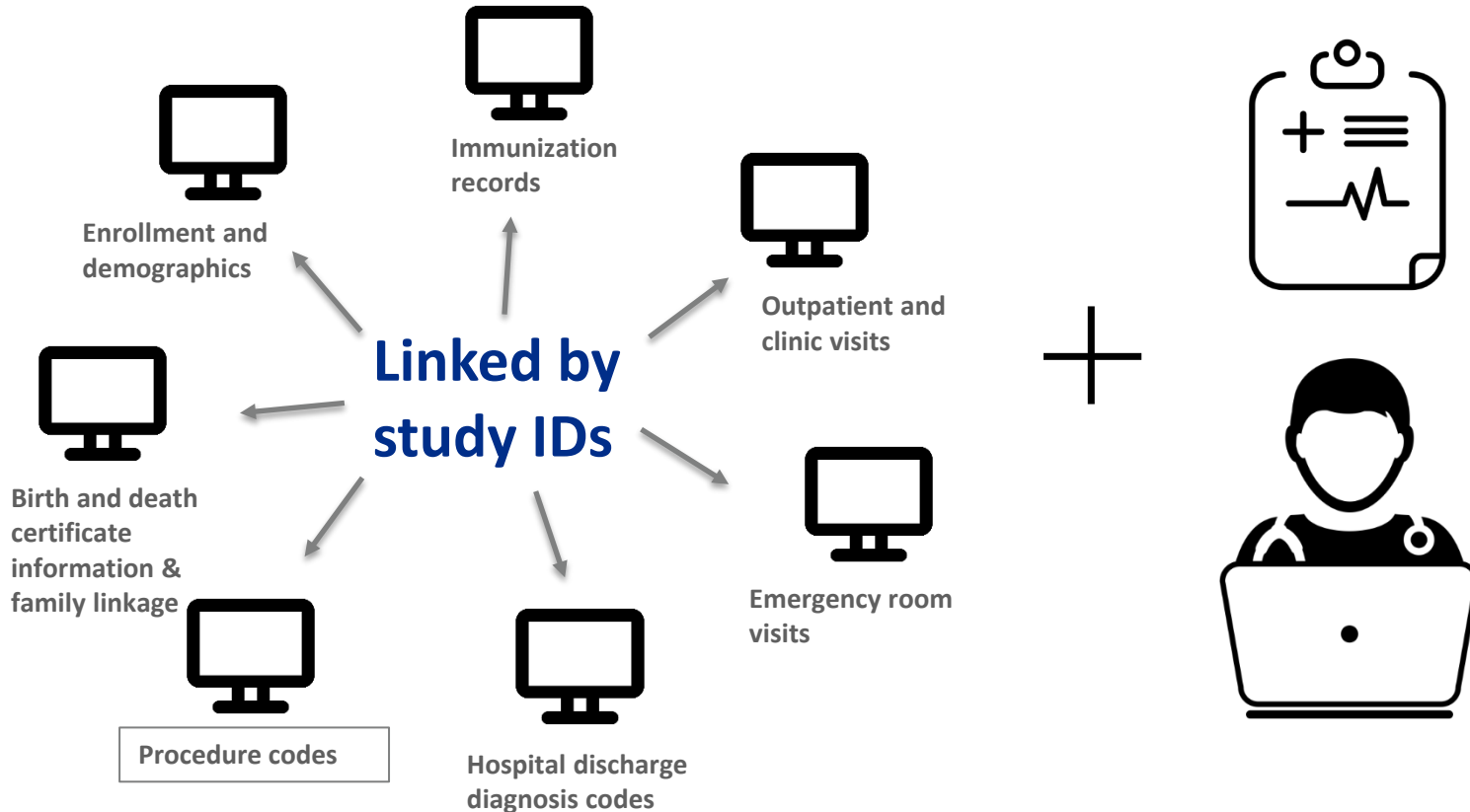
Vaccine Safety Datalink

Sites that do not provide data are denoted with an asterisk(*).



- 13 participating integrated health care organizations

VSD Electronic Files + Chart Review

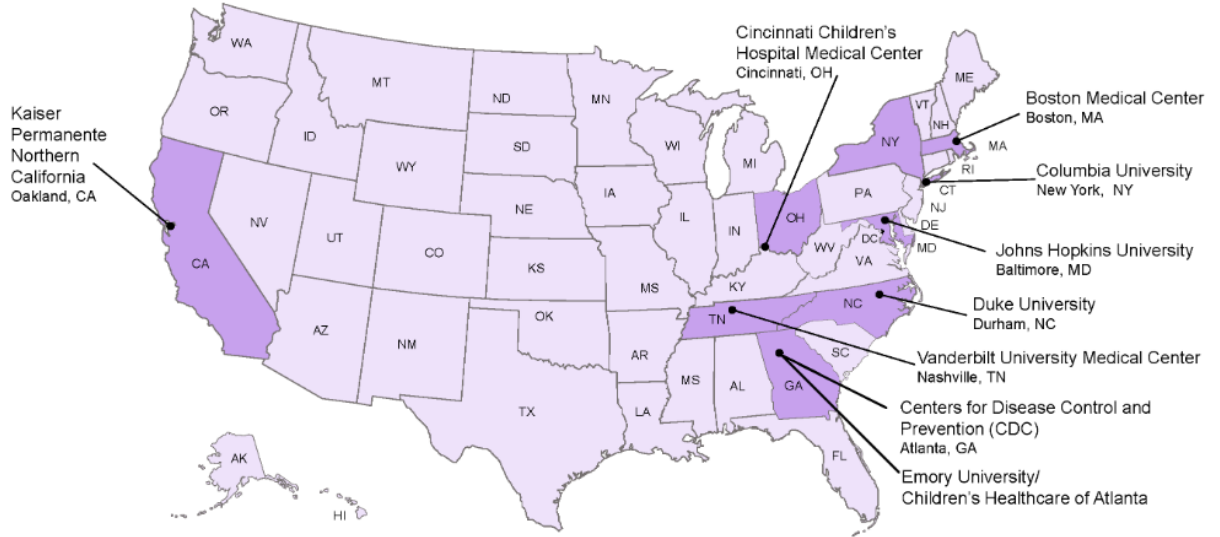




CISA

Clinical Immunization Safety Assessment (CISA) Project

8 participating medical
research centers with
vaccine safety experts



- Clinical consult services*
CISAEval@cdc.gov
- Clinical research



V-safe



- V-safe is a vaccine safety monitoring system that lets vaccination recipients share with CDC how they feel after getting a participating vaccine.
- Originally launched in December 2020 to monitor the safety of COVID-19 vaccines.
- V-safe sends personalized and confidential health check-ins via text messages or emails.
- Currently, 2023-2024 updated COVID-19 and RSV vaccines are being monitored in V-safe.

National Vaccine Injury Compensation Program

- Established by National Childhood Vaccine Injury Act (1986)
- “No fault” program
- Covers all routinely recommended childhood vaccines
- Vaccine Injury Table
 - <https://www.hrsa.gov/sites/default/files/hrsa/vaccine-compensation/vaccine-injury-table.pdf>

The screenshot shows the HRSA website for the National Vaccine Injury Compensation Program. At the top, there is a navigation bar with the HRSA logo and a search bar. Below the navigation bar, there is a main heading for the National Vaccine Injury Compensation Program. A sidebar on the left lists various links such as 'About the Program', 'Covered Vaccines', and 'Who Can File a Petition'. A prominent yellow box highlights 'COVID-19 claims' with a message about filing requests for benefits. At the bottom, a blue box promotes 'Electronic filing now available for HRSA Injury Compensation Programs' with an illustration of a laptop and a document.

Health Resources & Services Administration

HRSA
Health Resources & Services Administration

Call or Text the Maternal Mental Health Hotline

Bureaus and Offices | Newsroom | Contact HRSA | Recursos en español

Home | Grants | Loans & Scholarships | Data Warehouse | About HRSA

Home » National Vaccine Injury Compensation Program

VICP Home

- About the Program
- Covered Vaccines
- Who Can File a Petition
- How to File a Petition
- Vaccine Injury Compensation Data
- Frequently Asked Questions
- Resources
- Advisory Commission on Childhood Vaccines (ACCV)

National Vaccine Injury Compensation Program

COVID-19 claims

For claims associated with the COVID-19 vaccine or other COVID-19 related countermeasures, please file your Request for Benefits with the [Countermeasures Injury Compensation Program](#).

Electronic filing now available for HRSA Injury Compensation Programs

Visit Injury Compensation Program's New Site!

The Provider's Role

- **Immunization providers can help ensure the safety and effectiveness of vaccines through proper:**
 - Vaccine storage and administration
 - Timing and spacing of vaccine doses
 - Screening for contraindications and precautions
 - Management of adverse reactions
 - Reporting to VAERS
 - Benefit and risk communication

Benefit and Risk Communication

- Opportunities for questions should be provided before each vaccination.
- Vaccine information statements (VISs)
 - The National Childhood Vaccine Injury Act (Federal law) requires VISs be provided to the patient, parent, or their legal representative before each dose of vaccine.
 - Required for public and private providers
- For vaccines covered under Emergency Use Authorization (EUA) (e.g., COVID-19 vaccines for children 6 months through 11 years) FDA requires that recipients or their caregivers receive Fact Sheets, which have content similar to VISs, are developed by the vaccine manufacturer, and are approved by FDA.
- CDC provides English versions at [Vaccine Information Statement | Current VISs | CDC](#) and [Translations | Immunize.org](#)

Continuing Education Information

- To claim continuing education (CE) for this course, please follow the steps below by July 1, 2026.
- Search and register for course **WD4810-071124** in **CDC TRAIN**.
- Pass the post-assessment at 80%.
- Complete the evaluation.
- Visit “Your Learning” to access your certificates and transcript.
- If you have any questions, contact **CDC TRAIN** at train@cdc.gov or CE Coordinator, Melissa Barnett, at MBarnett2@cdc.gov



E-mail Your Immunization Questions to us



NIPINFO@cdc.gov

Thank You From Atlanta!

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

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

