Manual and Resources
Providers 2024

Texas Department of State Health Services
Immunizations Section

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Section 1
Operations Manual for Providers

Introduction

The Texas Department of State Health Services (DSHS) Immunization Section prepared the Immunization Quality Improvement for Providers (IQIP) Operations Manual for use by Texas Vaccines for Children (TVFC) program providers and associated partners. Consultations on the policies in this manual are conducted routinely with the Centers for Disease Control and Prevention (CDC), DSHS, and other organizations.

The purpose of this manual is to consolidate IQIP policies and information into one source document for TVFC providers. Content includes information on the IQIP process, technical assistance guidance, and DSHS specific policy guidance.

Throughout the year, the DSHS Immunization Section will distribute new policies to TVFC providers. During the annual update of this manual, all previous policies from the prior year will be incorporated. This document serves as a companion document to further explain the required activities included in the "Program Evaluation" chapter of the Texas Vaccines for Children and Adult Safety Net (TVFC/ASN) Programs Operations Provider Manual.

Immunization Quality Improvement for Providers (IQIP) Background and Overview

Background

The Federal VFC program was created by the Omnibus Budget Reconciliation Act of 1993. The program was officially implemented in October 1994. VFC funds were awarded to state/local jurisdictions to conduct quality assurance reviews (QARs or VFC visits), which were formal site visits to assess VFC- enrolled providers' compliance with the requirements of the VFC program, beginning in 1995. In the same year, the Senate instructed the CDC to "ensure that all states receiving Section 317 immunization funds, conduct annual provider assessments in all public clinics using the CDC-approved methodology, "one which later evolved into a program known as "Assessment, Feedback, Incentives, and eXchange" (AFIX). The assessment visits were implemented in public-sector clinics to improve immunization practices and vaccination coverage.

In 1999, the National Vaccine Advisory Committee (NVAC) recommended that all immunization providers, both public and private, should have their vaccination coverage assessed annually and that private providers should be assisted in this effort by state and local health departments. This recommendation provided support to expand implementation of AFIX to private provider settings. In 2000, the Task Force on Community Preventive Services completed a review of immunization-focused quality improvement (QI) literature and "strongly recommended" assessment and feedback (key components of the AFIX process) in the Guide to Community Preventive Services (Community Guide). The separate VFC and AFIX initiatives were combined in 2000 to allow the programs to achieve a broader reach among both public and private providers. That year, supplemental funds were awarded to 37 awardees to support a combined VFC-AFIX initiative. A 2011 update of the task force's review concluded that assessment and feedback remained effective interventions for improving vaccination coverage.

Recommendations from the CDC scientific and programmatic staff in 2017– 2018, resulting from operational research and an internal evaluation of the AFIX program, focused on the need to refine the CDC's approach to provider- level immunization QI efforts. Recommendations also focused on the need to scale such efforts to function within the boundaries of constraints faced by the CDC and awardee immunization programs as well as the current health care environment.
Those recommendations resulted in the transition from AFIX to IQIP.

IQIP Program

IQIP is an immunization quality improvement program for health-care providers enrolled in the TVFC Program. The purpose of IQIP is to promote and support the implementation of provider-level quality improvement strategies. IQIP strategies are designed to support health-care providers in identifying opportunities to increase vaccine uptake in adherence with the
Advisory Committee on Immunization Practices (ACIP)-recommended routine immunization schedule by improving immunization service delivery and ensuring providers are:

- Aware of and knowledgeable about their vaccine coverage and missed opportunities to vaccinate.
- Motivated to try new immunization service delivery strategies and incorporate changes into their current practices.
- Capable of sustaining changes and improvements to their vaccination delivery services.
- Able to use available data from the Immunization Information System (IIS) and/or Electronic Health Record (EHR) to improve services and coverage.

The core quality improvement strategies of the IQIP program will support Texas Vaccine for Children (TVFC) providers by focusing on:

- Facilitate Return for vaccination.
- Leveraging the reporting functionality of the statewide immunization registry, ImmTrac2.
- Giving a strong vaccine recommendation (including emphasis on HPV vaccine for providers with adolescent patients).
- Strengthening vaccination communications.

Using the IQIP process, TVFC-enrolled providers will be assessed on immunization delivery practices and will collaborate with the DSHS TVFC Quality Assurance Contractor (TMF) IQIP consultant to identify strategies to enhance their immunizations workflow to improve vaccine uptake. Vaccination coverage is measured at or near the time of an initial contact (site visit) to establish baseline performance and again one year later to evaluate progress. Technical assistance and support are given via telephone calls at two and six-month intervals to aid providers in staying on course with their strategy implementation plans (SIPs). At the end of 12 months, a final discussion of SIP progress and sustainability of practice changes occurs.

Site Visit 	• Previsit preparation • Assess provider immunization workflow • Review assessment reports and set coverage goals • Discuss/select QI strategies and provide technical assistance • Establish action items for the Strategy Implementation Plan (SIP) • Enter data into IQIP Database
Two month check-in 	• Prepare by reviewing synopsis and notes from the site visit • Review SIP and discuss implementation status • Identify barriers and provide technical assistance • Establish new action items for updated SIP, if necessary • Enter data into IQIP Database
Six month check-in 	• Prepare by reviewing synopsis and notes from the two month visit • Review SIP and discuss implementation status • Identify barriers and provide technical assistance • Establish new action items for updated SIP, if necessary • Enter data into IQIP Database
12 month follow up	• Prepare by reviewing synopsis and notes from the six month visit • Review SIP and discuss implementation status • Identify barriers and provide technical assistance • Establish new action items for updated SIP, if necessary • Enter data into IQIP Database • Send provider high-level summary, including selected strategies, over and final SIP; encourage continued efforts

Figure 1: IQIP Cycle

Texas Vaccines for Children (TVFC) Program

The TVFC program provides low-cost vaccines to eligible children from birth through 18 years of age. The mission of this program is to remove barriers to immunizations by allowing private providers to immunize eligible patients in their communities at little to no cost to the parent. Today there are more than 3,000 Texas providers enrolled in TVFC. The TVFC program enables over 4.3 million Texas children to have access to immunizations. This is accomplished through a network of support provided by DSHS and with assistance from PHRs and contracted LHDs. These organizations function as Responsible Entities (REs) to ensure compliance with state and federal requirements in their jurisdiction.

ImmTrac2

Texas uses ImmTrac2 as the statewide immunization registry, which IQIP leverages to assess vaccine coverage data. DSHS offers ImmTrac2 at no cost to all Texans. The registry is secure and confidential, and safely consolidates and stores immunization records from multiple sources in one centralized system. Texas law requires written consent by individuals to participate in the registry. Written or electronic consent for ImmTrac2, is required for an individual who is 17 years of age or younger and must be obtained once for participation. A written consent of the individual's parent or guardian must be submitted to DSHS. After written consent is submitted, the individual's immunization information will be included in the registry until the individual is 26 years of age. If written consent is not collected during the immunization visit, the individual's immunization administration will not be accounted for when vaccination coverage rates are assessed.

Access to the registry records is for those who have authorization. Authorized organizations include health-care providers, schools, and public health departments. The registry is part of the initiative to increase vaccine coverage across Texas.
ImmTrac2 Registry Education

All TVFC providers receiving a site visit will receive IQIP and ImmTrac2 education resources. These education materials have been developed to provide guidance on how to improve reporting of vaccination administrations into ImmTrac2, and best practices to increase childhood and adolescent vaccination coverage rates at the provider site.

ImmTrac2 Resource Packet

All TVFC Providers will receive an ImmTrac2 resource packet and hands-on training during their scheduled IQIP visit. The packet will include the following guidance documents:

- ImmTrac2 Data Quality Guide
- ImmTrac2 Texas Immunization Provider Summary (TIPS) Report Guide
- Guide to Reminder/Recall Report
- Creating a List of Active Clients with the Ad Hoc List Report
- ImmTrac2 Brochures

ImmTrac2 Data Quality Guide

The ImmTrac2 Texas Immunization Summary (TIPS) Report Guide is a report which includes the provider's registered organization information listed in ImmTrac2, an overall summary of user activity, online activity, and data exchange activity for the previous month. This data will assist the provider in identifying how many records are being reported to ImmTrac2, accepted, and rejected monthly. Please reference the document at www.dshs.texas.gov/immunizations/providers/forms.

Guide to Reminder Recall Report

The Guide to Reminder Recall Report can be generated in ImmTrac2 to help the provider increase immunization levels in their practice. This report gives step-by-step guidance on how to create lists of patients who are due or overdue for immunizations. The reminder recall system can also create and print mailing labels.

Creating a List of Active Clients with the Ad Hoc List Report

All patients assigned to the provider's organization in ImmTrac2 are included in the initial assessment of the coverage assessment rates. An Ad Hoc List Report in ImmTrac2 allows for providers to review patients and determine which ones are considered active. For the patients no longer seen at the provider site, providers can de-activate patients in ImmTrac2. This guidance document assists providers with defining filters for specific clients and choosing a sort order for the report to show inactive or MOGE (moved or gone elsewhere).

ImmTrac2 Customer Service Team

The ImmTrac2 Customer Service team will work with providers to reset passwords and provide guidance on how to generate the TIPS Report, Patient
Active/Inactive List, and Reminder Recall reports in ImmTrac2. For further assistance, please contact the ImmTrac2 Customer Service Team at 800-348-9158, option 1, or email at ImmTrac2@dshs.texas.gov.

ImmTrac2 Inter-Operability Team

The ImmTrac2 Inter-Operability Team works with providers to ensure accurate exchange of medical records into the state registry. They serve as direct support to the provider, and will work diligently to assist in identifying, addressing, and resolving technical issues in collaboration with the provider and EHR vendor. Over 12 months, a representative from this team will work closely with the provider to resolve reporting issues. Contact information for the ImmTrac2 Inter-Operability Team is 800-348-9158, option 3, or email at ImmTracMU@dshs.texas.gov.

IQIP Site Visit

Provider selection

The TVFC program is required to initiate IQIP site visits on 25% of the CDC- defined IQIP candidate TVFC-enrolled providers annually. The exact number is determined by the CDC using the TVFC provider data in Provider Education, Assessment, and Reporting System (PEAR). In addition, the TVFC program continues other IQIP activities with providers already engaged in the process.

Providers are selected based on the following criteria:

- TVFC enrollment facility type (Private provider, FQHC, etc.)
- Time since last IQIP Cycle
- Vaccination coverage rates, which are prioritized into high and low categories.
- TVFC enrollment patient population as reported in the TVFC database (Syntropi)

Overview

By signing the TVFC Program Agreement, the signing clinician agrees to allow DSHS or DSHS quality assurance (QA) contractors to conduct site visits at least every other year at their site.

The IQIP Site Visit involves a goal setting discussion with the TVFC Provider and the site reviewer. IQIP requires the presence of at least one of the provider's TVFC points of contact: Primary Vaccine Coordinator, Backup Vaccine Coordinator, or Signing Clinician (PVC, BVC, and/or SC) and any individuals who can make process changes at the provider location. A core component of this visit is to focus on assessing provider-level vaccination coverage rates using the data reported to ImmTrac2. During the IQIP site visit, staff at the facility will receive a SIP to include quality improvement strategies, ImmTrac2 resources, and instructions on action items to be implemented at the facility. Check-in activities will occur by phone or virtual meetings at two months, six months, and 12 months by the Texas DSHS Quality Assurance and Improvement (QAI) team IQIP consultant. At 12 months, the provider's coverage assessment rates will be re-evaluated, and the data will be documented in the IQIP Database. Once the IQIP portion of the site visit is completed, the site reviewer will transition into the TVFC Compliance portion.

Assessing Provider Immunization Workflow

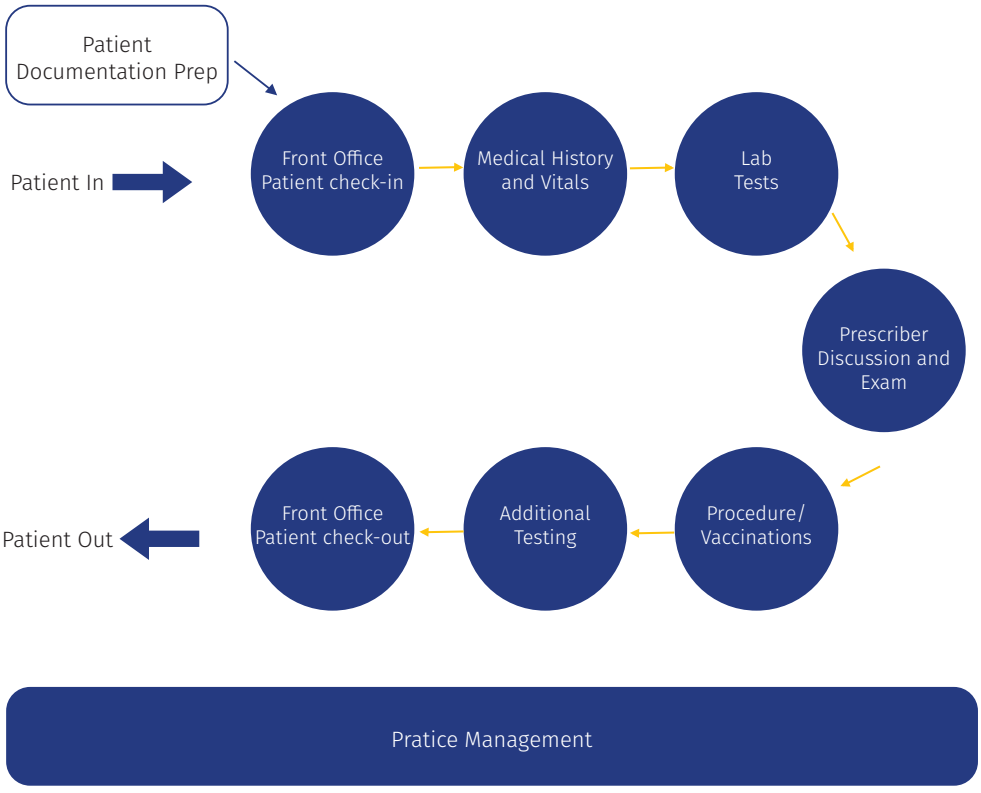
The IQIP Site Visit will begin with a discussion about the provider's immunization workflow. The conversation should involve the provider describing each step of their immunization workflow from the moment the patient enters the clinic through the administration of the vaccines, documentation on the patient's medical record, and scheduling of the next immunization visit.

An SIP will be developed in collaboration between the provider point of contact and the TMF consultant to outline the quality improvement strategies selected, supporting action- items, and check-in activities.

Childhood and adolescent vaccination coverage rates will be presented by the consultant at the initial IQIP visit and 12 month check-in, and coverage goals will be agreed upon for the provider's SIP. Vaccination coverage rates are discussed in more detail in the Vaccine Coverage Rate Reports section on page 15.

Vaccination Workflow Assessment Tool

IQIP
IMMUNIZATION QUALITY IMPROVEMENT FOR PROVIDERS



Points to consider:

1. Does that location have a vaccination policy for patients? How is it shared with patients?
2. Who reviews the patient's vaccination history and determines needed vaccines? When is this done? What source is used? (IIS or EHR?)
3. Who discusses vaccines with the patient/parents? When is this done?
4. Is adherence to the ACIP schedule and the importance of vaccination promoted by all staff and visible in all areas of the clinic?
5. Which staff can play a part in making or reinforcing a strong vaccine recommendation?
6. When are vaccination data documented in IIS or EHR?
7. When and by whom are the due dates for future vaccination discussed?
8. When and by whom is the next vaccination appointment made? Are there patient reminders before the next visit?
9. How is the vaccination policy and vaccine services promoted using all possible communication channels?

IQIP Immunization Champion

During the IQIP site visit, an Immunization Champion is highly encouraged to be identified to participate in the initial IQIP site visit, and to take the lead on immunization activities within their clinics. This individual will be responsible for developing and improving clinic policies, implementing the strategies selected in the SIP, training and educating staff, and staying up to date on vaccine recommendations. During the visit, the IQIP Consultant should reference the Immunization Champion resource document to lead discussions during this portion of the visit. Once the Immunization Champion is identified, the contact information for this person should be collected and documented in the IQIP Database.

Preparing for the IQIP Site Visit

Providers will receive a scheduling call and a site visit confirmation letter before the visit which includes details about the site visit date, time, and approximately how long it will take. On the day of the site visit, the provider should provide adequate workspace for the TMF IQIP consultant to meet with one of the provider's TVFC points of contact, PVC, BVC, and/or SC. It is recommended a prescribing physician and the designated IIS contact person be present to be informed of recommended improvements identified during the IQIP visit. WiFi should also be made available for the consultant to document site visit activities. Lastly, providers should have ready access to their Secure File Transfer Protocol (SFTP) portal at the time of visit to assist in timely data pulls for the consultant.

The following documents will be made available to the consultants by DSHS TVFC program monthly to share with the provider during the visit:

- Childhood and adolescent vaccination coverage rates
- Texas Immunization Provider Summary (TIPS) Report

Initial IQIP Site Visit Process

During the site visit with providers, consultants will:

I. Initiate the site visit with introductions, purpose of the visit, and overview of the IQIP process.
II. Review vaccination coverage rates and vaccination policies for patients.
III. Discuss of the role of immunization champion.
IV. Review and assess provider vaccination workflow in relation to the IQIP strategies.
V. Review assessment reports to identify opportunities for improvement.
Discuss and select IQIP strategies.
    a. Facilitate return for vaccination.
    b. Leverage IIS Functionality to support immunization practice.
    c. Give a strong vaccine recommendation.
    d. Strengthen vaccine communications.
VI. Develop action items, which will combine to form the Strategy Implementation Plan.
VII. Wrap up by discussing next steps and establishing tentative dates for the two and six month check-ins and 12 month check-ins.

Check-in Activities

The provider's two month, six month, and 12 month check-in dates will be scheduled at the initial site visit. The check-in activity will be conducted by TVFC IQIP consultants via phone. Consultants will check-in with the provider to see how well their SIP is working and provide additional technical assistance to aid in provider progress. At 12 months, another check-in call will be conducted by consultants to reassess the provider's childhood and adolescent vaccination coverage assessment rates. After the 12 month check-in is completed, the provider's IQIP cycle will be finished for the year.

Additional technical assistance between check-ins is available to providers through their regular RE.

During the two, six, and 12 month check-ins, consultants will:

I. Contact each provider by phone no later than 10 days from the tentative check-in date outlined during the site visit.

II. Discuss the Texas Immunization Provider Summary (TIPS) Report with the provider.

III. Review the implementation plan with the selected strategies and document the progress as communicated by the provider.

IV. Provide further technical assistance and action items for the next check-in. Review information thoroughly with the provider to ensure a clear understanding of guidance documents.

V. Notify provider of next check-in activity date.

VI. If this is the provider's 12 month check-in, consultants will:

   a. Insert and discuss the most recent vaccination coverage rates as provided by DSHS.

   b. Discuss any improvements and inform provider of the outcome of the SIP.

   c. Send an electronic copy of the IQIP Synopsis Report to the provider contact person.

Vaccination Coverage Rate Reports

IQIP coverage assessment rates help providers monitor, evaluate, and select strategies to improve the providers of their performance in vaccinating pediatric patients on time and in adherence to the ACIP-recommended routine schedule. Vaccine coverage rates are required to be entered in the IQIP Database at the initial site visit and 12 month check-in. Record pulls will not be conducted at the provider office during an IQIP site visit.

Vaccination coverage rates will be evaluated based on the vaccine administrations reported to ImmTrac2 for the provider's active patients. Active patients are those who the provider has a responsibility for vaccinating. Interpretation of coverage rates may be complicated by including inactive patients for whom the provider no longer holds the responsibility for vaccination.

Texas Department of State Health Services (DSHS) Texas Health and Safety Code 161.007 – 161.009 requires all medical providers to report all immunizations administered to clients who are younger than the age of 18 to ImmTrac2 within 30 days of administration of vaccine.

During the initial site visit, providers are given ImmTrac2 resources to address creating a list of active/inactive patient lists. It is imperative staff at the provider office learn how to properly maintain their ImmTrac2 data. Consultants should advise a provider when selecting "Leverage IIS Functionality to improve immunization practice "IQIP strategy and incorporate routine data maintenance into the Strategic Improvement Plan (SIP) is mandatory. If the provider improves ImmTrac2 data during the IQIP cycle, then a comparison of initial coverage to 12 month coverage will be affected by the changes in data quality.

IQIP is designed to evaluate on-time vaccination and assess childhood patient vaccination coverage at two years of age, and adolescent patients at 13 years of age. Provider vaccination coverage rates are determined based on all the immunization records reported into ImmTrac2. To ensure providers are in accordance with Texas Health and Safety Code 161.007 – 161.009, the vaccination coverage rates will communicate two messages:

1. How well the provider's EHR is at reporting vaccine administrations into the statewide registry
2. How successful the provider is at vaccinating their patient population on-time according to the ACIP vaccination schedule.

Coverage rate assessments are viewed by the age of the cohorts for the TVFC IQIP program.

The vaccine series and each individual antigen is utilized to make this percentage determination. The review of assessment reports during the site visit is intended to help identify opportunities for improvement in processes and workflow. Nearly all providers have room to increase aggregate vaccination coverage for their practice. Baseline coverage for some doses may be lower than others. Recognition and discussion of vaccination performance gaps during the site visit can help the IQIP consultant and provider staff tailor action items and technical assistance to areas of greatest need.

Data in this report reflects immunizations given on or before the last day of the month and records accepted into ImmTrac2 as of the day the data was run. Coverage rates reflect valid doses received on or before the assessment age (Second or 13th year birthday) according to the IQIP's measurement for each vaccine type. Valid doses are those that meet the 2020 ACIP recommendations for minimum age and minimum interval.

Childhood vaccine measurements: four valid doses of DTaP, three valid doses of IPV, one valid dose of MMR, UTD for Hib, UTD for HepB, one valid dose of Varicella, UTD for PCV13. Hib, HepB, and PCV15 or PCV20 call for an up to date (UTD) calculation to reflect varying requirements for numbers of doses needed, including ACIP catch-up schedules. 4:3:1:U U:1:U series coverage rates are also calculated. No. age-eligible patients assessed (denominator): 2-year-olds (consented clients 24 through 35 months-old with at least one valid dose in ImmTrac2 administered on or before they turn 2). Adolescent vaccine measurements: one valid dose of Tdap, one valid dose of MCV4, two doses (UTD) of HPV, one dose of HPV (initiated series). No. age-eligible patients assessed (denominator): 13-year-olds (consented clients 13 years old with at least one valid dose in ImmTrac2 administered on or before they turn 13.)

Cohort	Age	Vaccine Series
Childhood	24 months	4:3:1:3:3:1:4 four DTaP three Polio one MMR UTD Hib three Hepatitis B one Varicella UTD PCV
Adolescent	13 years of age	one Tdap one MCV UTD HPV one HPV?

*Figure 7: *UTD = Up to date*

Please Note: There may be some discrepancies regarding the initial rates pulled due to issues with EHR systems reporting vaccine administrations to ImmTrac2. Action-items outlined to support the Leveraging the IIS functionality strategy will help resolve these issues within a 12 month time frame.

Vaccination Coverage Goals

Default vaccination coverage goals will be populated in the IQIP database based on the ImmTrac2 immunization coverage rates entered into the database by the consultant.

The coverage goals include a suggested percentage based on initial coverage rates within a 12-month period. Recommend the default coverage goals to the provider, and if agreed upon, enter the suggested amounts into the SIP in the Database. If the default coverage goals are not agreed upon, they can be modified in the IQIP database.

In the tables below, IQIP database logic is displayed for childhood and adolescent age group coverage goals.

Table: Logic for suggested 12-month childhood coverage goals	
Initial Coverage	Suggested 12-month coverage goal
0% to less than 80%	Increase by 10 percentage points
80% to less than 85%	Increase to 90%
85% to less than 90%	Increase by 5 percentage points
90% to less than 95%	Increase to 95%
95% and greater	Maintain initial percentage

Table: Logic for suggested 12-month adolescent coverage goals	
Initial Coverage	Suggested 12-month coverage goal
0% to less than 70%	Increase by 10 percentage points
70% to less than 75%	Increase to 80%
75% to less than 90%	Increase by 5 percentage points
90% to less than 95%	Increase to 95%
95% and greater	Maintain initial percentage

Figure 8: This table shows the parameters utilized by the TVFC IQIP Site Reviewer when setting program goals for increasing their clinics coverage goals for the ACIP-recommended vaccines per patient population served

IQIP Website

Additional information about IQIP can be found on the DSHS Immunization Section website. The webpage can be accessed at www.dshs.texas.gov/immunizations/providers/quality-assurance.

IQIP Functional Inbox

Email all questions or inquiries to the IQIP functional inbox at IQIP@dshs.texas.gov

Please Note: The Texas IQIP Program Operations Manual for Providers will continue to undergo changes as we assess and adjust program implementation. Updates will be announced, and policy documents will be revised and edited as needed.

IMMUNIZATION QUALITY IMPROVEMENT FOR PROVIDERS

TEXAS Health and Human Services | Texas Department of State Health Services

IQIP at a Glance For providers

IQIP is CDC's national, Vaccines for Children (VFC) provider-level immunization quality improvement program. IQIP promotes and supports implementation of provider-level strategies designed to increase on-time vaccination of children and adolescents.

IQIP strategies

Facilitate return for vaccination
Leverage IIS functionality to improve immunization practice
Give a strong vaccine recommendation
(emphasize HPV vaccine if provider has adolescent patients)
Strengthen vaccination communications
Custom strategy based on state or local public health priorities

IQIP Process IQIP is a 12-month process where public health representatives and VFC providers collaborate to identify QI strategies to increase vaccine uptake by improving and enhancing vaccination workflow.

1

Site visit
Provider's vaccination workflow is observed, and initial coverage is reviewed
QI strategies are selected
Technical assistance is provided by the IQIP consultant
Action items are chosen for strategy implementation plan

2

Two and six month check-ins
Progress toward strategy implementation is reviewed
Technical assistance is provided by the IQIP consultant
Strategy implementation plan is updated

3

12-month follow-up

- Progress toward strategy implementation is reviewed
  Technical assistance is provided by the IQIP consultant
  Year-over-year coverage change is reviewed

Section 3
IQIP Strategies for Providers

Description of IQIP Core Strategies for Providers

Immunization Quality Improvement for Providers (IQIP) promotes and supports the implementation of provider-level strategies designed to help increase on-time vaccination of children and adolescents. The IQIP core strategies call for quality improvement activities that focus on improvements to the vaccination workflow. IQIP supports both the implementation and improvement of these core strategies. If the practice already uses one of these strategies, IQIP can help to advance the efforts within that strategy.

Facilitate Return for Vaccination

Making vaccination more accessible by expanding practice hours available for appointments, allowing walk-in vaccination appointments, and ensuring the next vaccination appointment is scheduled before the patient leaves the office, are a few examples that can support parents in keeping their children on time for vaccination. Reminder and recall systems can also help reduce the likelihood of missed appointments.

Questions To Consider

How does your practice maintain accurate patient contact information? Are staff verifying and updating patient contact information at each appointment to support scheduling and reminder/recall efforts?

What steps does your practice take to prevent missed opportunities? Does staff routinely screen patients for vaccine eligibility at each visit regardless of visit type (e.g., sick visit, well-child, sports physicals, etc.); generate lists of patients that have upcoming appointments to view vaccines due using various technologies via EHR, IIS, or scheduling software platforms; and maintain accurate vaccination records?

Does your scheduling protocol ensure that appointments are scheduled for all future vaccines needed? Are you scheduling the next appointment (e.g., well-child visit, nurse-only, etc.) before the patient leaves the office, either in the exam room or at check-out; scheduling the next vaccination visit and the next well-child visit to occur the same day whenever possible; offering various types of appointments (e.g., nurse-only appointments, vaccination-only clinic days, etc.) where vaccinations can be administered?

How do you inform parents of future vaccine dates? Does staff give parents a copy of their current immunization record and a list of future recommended vaccines with precise due dates?

Does your practice implement reminder and recall systems? Are you using multiple methods (e.g., a combination of text messages, portal messages, emails, postcards, phone calls, etc.) to remind patients of upcoming appointments?

Leverage the Immunization Information System (IIS) to Improve Immunization Practice

Providers and patients can benefit from a well-maintained immunization information system (IIS). The IIS can provide consolidated vaccination records, forecast upcoming due dates to assist with scheduling, and send reminders for upcoming appointments. The IIS also helps providers to manage vaccine inventory and to self-monitor vaccination coverage to identify areas for improvement.

Questions To Consider

How does your practice maintain accurate patient contact information? Are you verifying and updating patient contact information in the IIS at each appointment to support scheduling, reminder, and recall efforts?

Are you routinely reporting to the IIS? Are you reporting all historical and administered vaccination data to the IIS to support complete, up-to-date patient records, vaccination recommendations, and coverage?

How often does your practice assess patient immunization status? Do clinicians assess immunization status in the IIS for patient active/inactive status and doses due at every patient encounter, including drop-ins and sick visits?

How is a patient's vaccination status communicated among staff during their visit? Do you use a prompt system to notify staff when vaccinations are due for every patient encounter, including drop-ins and sick visits?

How often does your practice attempt to bring patients without appointments back to the office for due or overdue vaccinations? Do staff routinely generate patient line lists to identify patients not up-to-date and overdue to determine future due dates for vaccines? Does your practice use reminder and recall functionality to communicate with patients about appointments (e.g., future well-child, vaccination-only, and follow-up sick appointments)?

How often does your practice assess its vaccination performance, and how? Does your practice generate practice-level coverage reports at regularly scheduled intervals for single vaccines and combination series for various age cohorts?

Give a Strong Vaccine Recommendation

(include HPV vaccine if the provider has adolescent patients)

On-time vaccination depends on parents choosing to vaccinate their children, and providers play a critical role in leading parents to that decision. Parents usually consider their child's healthcare professional one of the most trusted vaccine information sources. This IQIP strategy focuses on the provider-parent and provider-patient discussion. Selection of this strategy can support your clinic with training and resources focused on the evidence-based presumptive (or "announcement") approach for vaccine recommendation.

Questions To Consider

Do you use evidence-based methods when recommending vaccines? Do prescribers use effective communication approaches (e.g., presumptive language, bundling approach, sandwiching recommendations, etc.) when recommending vaccines?

Do you recommend all vaccines for which the patient is eligible? Do prescribers prevent missed opportunities by recommending all vaccines when they are due and recommending multiple vaccines simultaneously if the ACIP schedule indicates the patient is due for more than one vaccine at the time of the visit?

What approaches do you use to build trust with parents? Do you seek to understand the concerns behind parents' questions before responding? Willingness to listen and acknowledge parents' concerns plays a role in developing trust.

How do you ensure you are reaching all parents and patients equally? Does your practice take actions to reduce disparities / promote vaccine equity by training prescribers to recognize the diversity within their community and acknowledge the systemic, cultural, and historical reasons some patients may have low confidence in vaccines?

How do you stay current on the latest ACIP-recommendations? Do prescribers receive routine training to prepare for and focus on the vaccination discussion with parents on the current ACIP Recommended Routine and Catch-Up Immunization Schedules?

Strengthen Vaccination Communications

This strategy highlights the importance of promoting vaccination and helping providers increase positive messaging about vaccination to their patients. The strategy includes developing, reviewing, and disseminating the provider's patient vaccination policy. The strategy also includes other approaches to vaccination messaging, such as posting flyers and posters throughout the site and including vaccine-related content in emails, mailings, website content, and social media posts.

Questions To Consider

Does your practice have a vaccination policy for patients? How does staff share and promote your practice-wide vaccination policy with all new and existing patients (e.g., including new patient packets, displaying the policy in waiting areas and exam rooms)? How does your clinic promote the importance of on-time vaccination to new and existing patients?

What reliable information about vaccines do you provide to parents and patients? What materials do you share to promote vaccinations above and beyond the required vaccine information sheets (VIS)? What resources do you provide to parents and patients that explain vaccination or address common concerns about vaccines?

How do you communicate your support of vaccination outside your practice? Do you have a website or utilize social media platforms? How can you incorporate positive vaccine messaging into these platforms?

How does your staff respond if parents or patients express vaccine hesitancy? Would staff benefit from training on common myths and misconceptions and how to respond to them?

The Interconnectedness of IQIP Core Strategies

Though they emphasize different aspects of a provider's routine vaccination workflow, the best practices associated with the four core IQIP strategies often overlap. For example, a well-maintained IIS helps to inform a strong vaccine recommendation, and it also helps to ensure that subsequent visits are scheduled to complete each vaccine series on time. Similarly, when a practice has a clear vaccination policy that all patients are aware of, it makes it easier for providers to give a strong recommendation in the exam room and stress the importance of scheduling the next vaccination appointment before the patient leaves. When selecting and implementing these QI strategies, it is essential to consider how they intersect and depend upon staff engagement across the practice.

Section 4
Immunization Champion

What does an immunization champion do?

- Immunization champions take the lead on immunization promotion activities in their clinics.
- By demonstrating leadership, collaboration, and advocacy, they ensure that the children in their care receive all the recommended vaccines on time.

Why be an immunization champion?

- Children rely on the champions in their lives to keep them safe and healthy.

Who can be an immunization champion?

- These champions may be physicians, nurses, or other health care professionals. Here are ways you can be an immunization champion in your clinic

Facility Processes

- Develop and guide the implementation of procedures that support on-time vaccination of every child seen.
- Routinely assess procedures to ensure vaccination workflow continues to support the practice's vaccination policy and on-time vaccination.
- Conduct workshops in which clinic staff discuss barriers to vaccinating patients on time and ways to improve.

Training and Education

- Display Advisory Committee on Immunization Practices (ACIP) recommendations throughout the clinic.
- Train staff quarterly on ACIP recommendations, minimum ages and intervals, and contraindications.
- Ensure all office staff can accurately answer parent and/or patient vaccine-related questions or refer them to the appropriate resource.
- Work with staff to make sure they are comfortable addressing common parent and/or patient concerns or hesitancy about vaccines.
- Observe staff during vaccination visits and provide feedback.

Immunization Documentation

- Routinely check to ensure the clinic is reporting vaccinations and immunization status to the immunization information system (IIS) in a timely manner.
- Perform spot checks for completeness and accuracy of clinic immunization records.
- Regularly check patients' active/inactive status in the IIS and update if necessary.

Communications

- Stay up to date on vaccine recommendations and immunization quality improvement.
- Develop and propose social media posts. Research vaccine content to add to website.
- Make sure all vaccination promotion materials reflect current recommendations.
- Stay up to date on facility- or provider-level vaccination coverage. Share and discuss results routinely with staff, working together to evaluate progress and identify performance gaps.
- Update clinic staff on status of key immunization performance measures (e.g., missed opportunities, staff knowledge of vaccine recommendations, IIS data quality, etc.).

Section 5
ImmTrac2 Data Quality Guide

1. Logging in with the Wrong Org Code

Users who are associated to multiple organizations could potentially log into ImmTrac2 with the wrong Org Code. This could add immunizations to an organization that did not administer the vaccine.

- **How Do I Know If I Am Associated to Multiple Organizations?**

  After successfully logging into ImmTrac2 you will see the Manage Access screen. A user may be associated to multiple organizations. See Figure 1 – User in Multiple Organizations in which a user is associated to four different organizations.

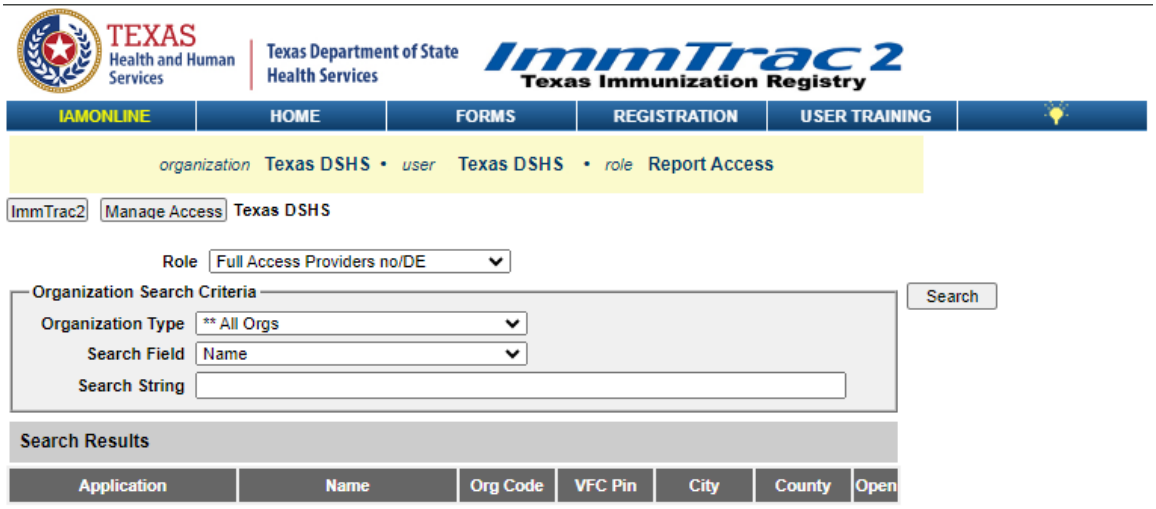


Figure 1 – User in Multiple Organizations

- **How Do I Know If I Am Logged into the Correct Organization?**

  The yellow banner at the top of the screen (see Figure 2 - Logged into Correct Organization) displays the organization name that you are currently logged in under, the name of the user, and the user's role.

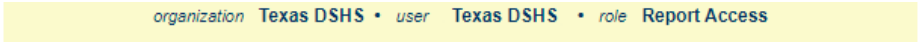


Figure 2 - Logged into Correct Organization

- **How Can I Switch Between Organizations While Logged into ImmTrac2?**

  On the Manage Access screen, select "ImmTrac2" for the organization which you would like to add immunizations on behalf of. See Figure 3 – Switch Between Organizations.

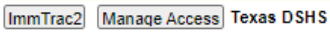


Figure 3 – Switch Between Organizations

2. Client Status Not Updated

Some reports generated from ImmTrac2 will only include clients that are listed as 'Active' with the organization (for example, the Reminder/Recall report). IMPORTANT: To ensure the accuracy of these reports, be sure to update the status of clients that are no longer associated to your practice.

- **How Do Clients Become 'Active' with an Organization?**

  Each new client added to ImmTrac2 is automatically 'Active' with that organization. This applies for clients added online as well as clients added through data exchange.

  When a historical or current immunization is added to a client's record. This includes updates that occur online as well as through data exchange.

  A client can also be manually flagged as 'Active' online on the 'Edit Client' screen under the Organization Information tab. See Figure 4 – Active Status.

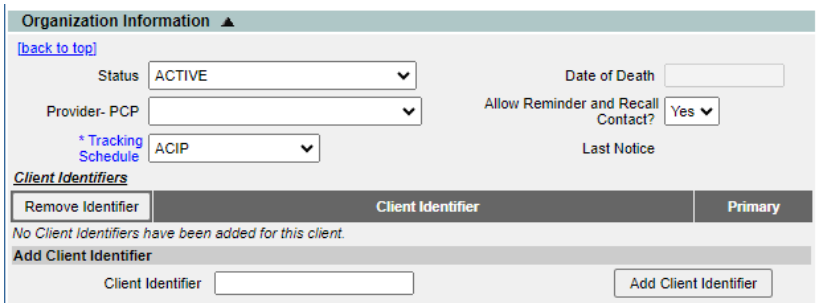


Figure 4 – Active Status

- **How Do Clients Become 'Inactive' with an Organization?**

  A client can be manually flagged as 'Inactive' online on the 'Edit Client' screen under the Organization Information tab. See Figure 5 – Inactive Status.

  Clients can also be flagged as 'Inactive' through data exchange. For additional information please feel free to contact your Electronic Health Records (EHR) vendor or the ImmTrac2 Interoperability Team toll free at 800-348-9158 or email ImmTracMU@dshs.texas.gov.

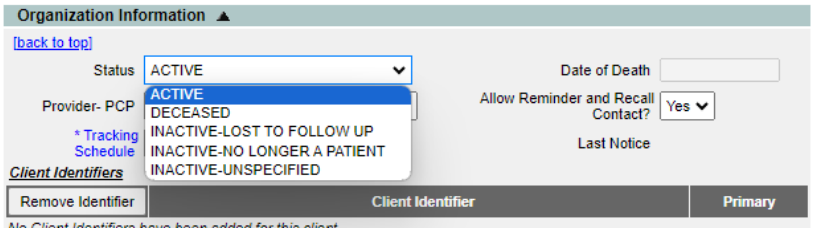


Figure 5 – Inctive Status

- **Other Considerations**

  Only users associated to your organization can update the status of a client in ImmTrac2.

  Clients can be flagged as 'Active' for multiple ImmTrac2 organizations. Which means they may show up as 'Active' for multiple organizations.

4

3. No Consent on File

The most common reason why client records are rejected from ImmTrac2 is due to no consent on file. For immunization records to be stored in ImmTrac2, the parent, legal guardian, or managing conservator must complete an ImmTrac2 Minor Consent Form for their child. Adults must complete the ImmTrac2 Adult Consent form. These forms can be found online by going to www.dshs.texas.gov/immunizations/public/forms. See Figure 6 – Forms.

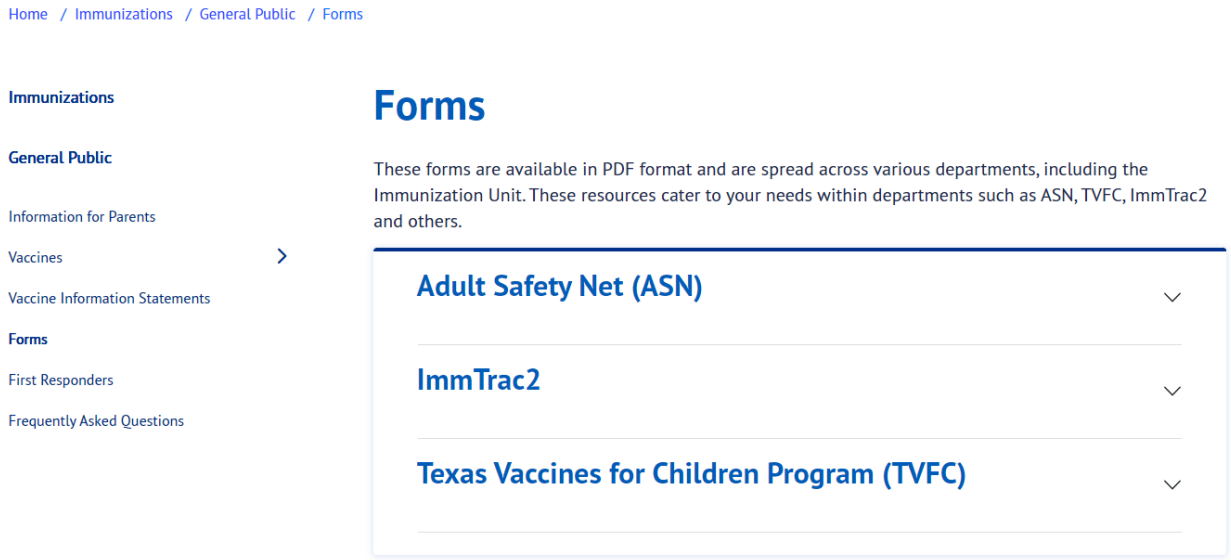


Figure 6 – Forms

Select the second option ImmTrac2 and look for the applicable ImmTrac form. See Figure 7 - List of forms.

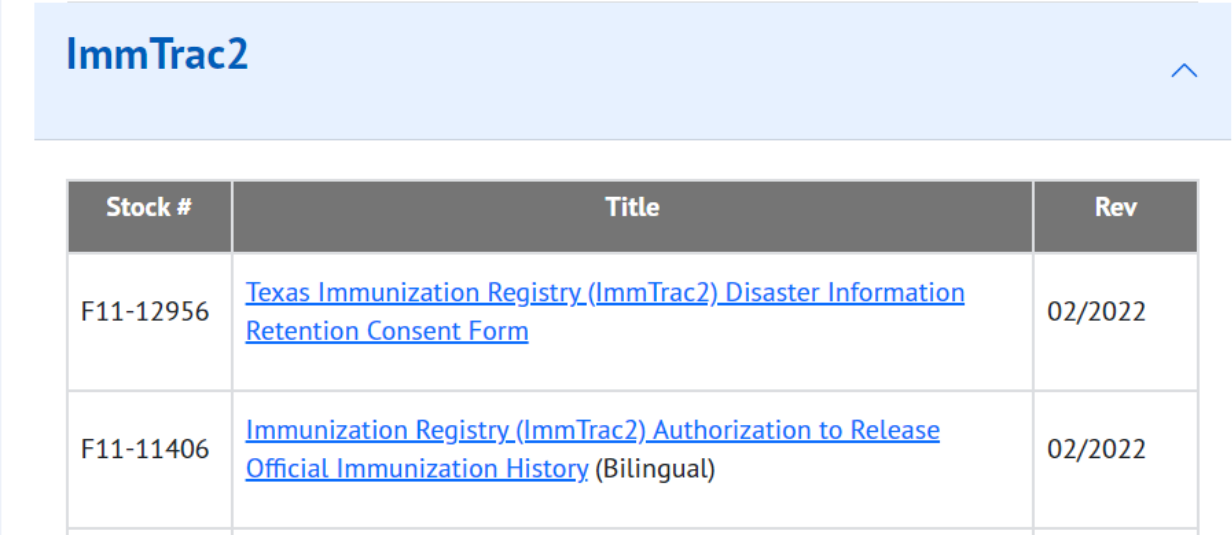


Figure 7 – List of Forms

4. Incorrect Organizational Parent/Child Relationship

NOTE: This pertains only to organizations that exchange data electronically with ImmTrac2.

All client information and immunization data are submitted through the 'parent-site' on behalf of themselves and all sub-sites (child-sites) within a provider organization. See Figure 9 – Parent-Child Hierarchy.

Figure 9 – Parent-Child Hierarchy

If an organization is a stand-alone site, their data will transmit directly to the registry.

- If a sub-site (child-site) within a provider group is not correctly associated to the parent organization in ImmTrac2, their data will not be sent to ImmTrac2.
- It is also important for the parent-site to include which sub-site administered the vaccine within the data exchange file otherwise the parent-site will be documented as administering the vaccine.

NOTE: It is not uncommon for EHR systems to only list the parent-site as the submitter and as the administering provider. If reports generated in ImmTrac2 are not reflecting the correct administering provider, please contact your EHR vendor for support.

- **How can I see the parent/child relationship in ImmTrac2?**

1. Select 'registration/renewal' at the top of the screen (see Figure 10 – Registration/Renewal tab).

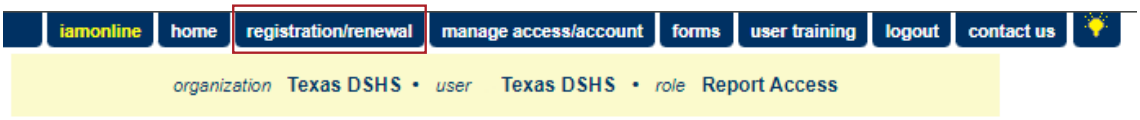


Figure 10 – Registration/Renewal tab

2. Select 'Manage Renewals' hyperlink (see Figure 11 – Manage Renewals link).

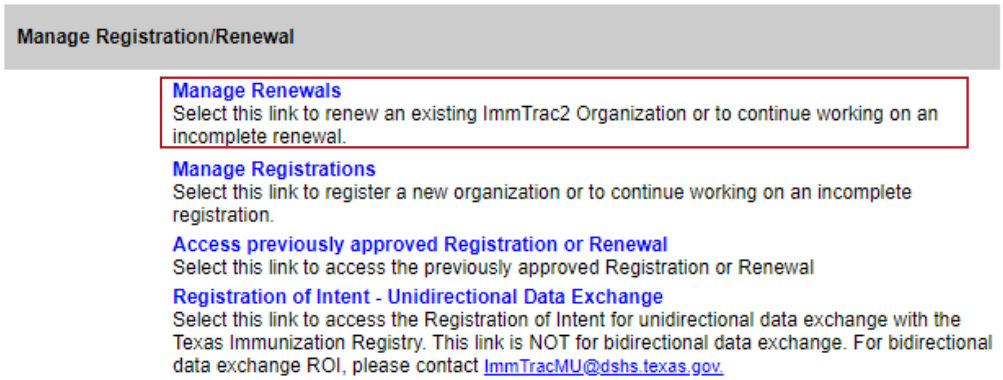


Figure 11 – Manage Renewals link

6

- **What does a child-view look like?**

  The example below is what it looks like from a sub-site, Org Code ABCD0002. The parent-site will appear on top and the child-sites below the parent. Child-sites will only be able to view their organization and their parent-site. See Figure 12 – Child-Site View.

Renewals:

When submitting a renewal for an existing organization, please review the information in each section of the application and make any necessary changes or updates. To save your progress and return at a later time to complete the renewal process, select "Save Progress and Exit". To continue working on an incomplete renewal, click the "Incomplete Renewal" link below.

Applications that are left inactive for more than 14 calendar days will be deleted and a new application must be started and saved.

Organization Name	Org Code	Site Agreement Expiration Date	Application Status	Last Edited By	Application Expires
Parent org	ABCD0001	10/26/2023		John Doe	
Child org 1	ABCD0002	06/23/2025	Click to Renew	John Doe	

Figure 12 – Child-Site View

- **What Does a Parent-Site View Look Like?**

  The example below is from a parent-site, Org Code ABCD0001. The parent-site will appear on top and the child-sites below the parent. Parent-sites will be able to view their organization as well as all child-sites below them. See Figure 13 – Parent Site View.

Renewals:

When submitting a renewal for an existing organization, please review the information in each section of the application and make any necessary changes or updates. To save your progress and return at a later time to complete the renewal process, select "Save Progress and Exit". To continue working on an incomplete renewal, click the "Incomplete Renewal" link below.

Applications that are left inactive for more than 14 calendar days will be deleted and a new application must be started and saved.

Organization Name	Org Code	Site Agreement Expiration Date	Application Status	Last Edited By	Application Expires
Parent org	ABCD0001	10/26/2023		John Doe	
Child org 1	ABCD0002	06/23/2025	Click to Renew	John Doe	
Child org 2	ABCD0003	11/30/2022	Click to Renew	John Doe	
Child org 3	ABCD0004	12/14/2022	Click to Renew	John Doe	
Child org 4	ABCD0005	12/14/2022	Click to Renew	John Doe	

Figure 13-Parent-Site View

5. Contact Information

For more information and support with data exchange, contact the Texas Immunization Registry Interoperability Team.

Email: ImmTracMU@dshs.texas.gov
Phone: 800-348-9158, press Option 3

Section 6
Guide to the Reminder/Recall Report

Contents

Summary

The Reminder/Recall Report generates client notices, which include letters, cards, mailing labels, and client listings. Reminder and recall notices can be generated for each client if the following conditions in the client record are met:

- The client status is “Active” in the Client Information section for your organization.
- The “Allow Reminder and Recall Contact?” indicator in the Client Information section is “Yes.”
- The client has complete address information listed in the Address Information section.

4

Generate Reminder/Recall Report

See Figure 1: Generate Reminder/Recall Report

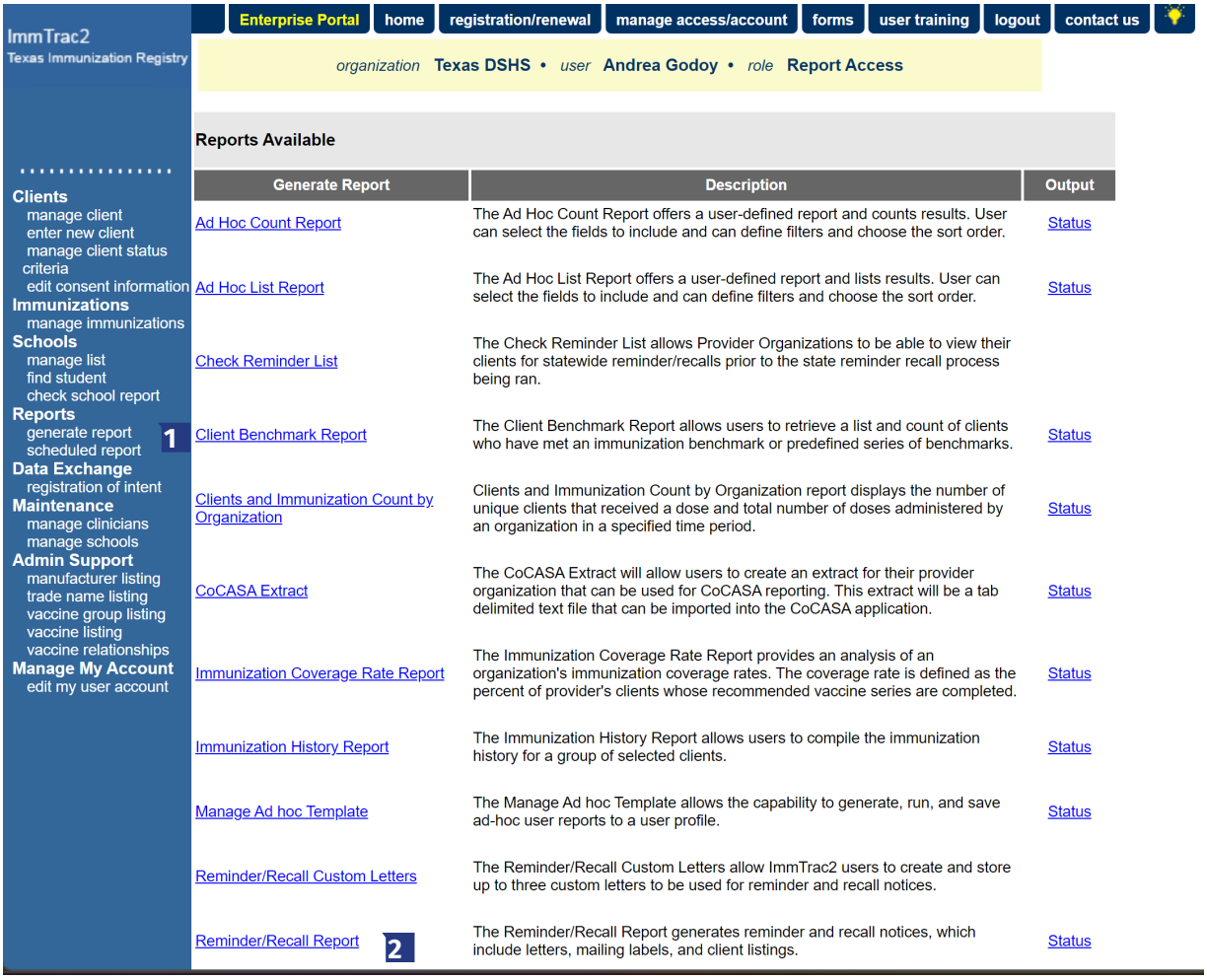


Figure 1: Generate Reminder/Recall Report

To generate the Reminder/Recall Report, follow the steps below.

1. Click the Generate Report option from the menu panel.

2. Select the Reminder/Recall Report.

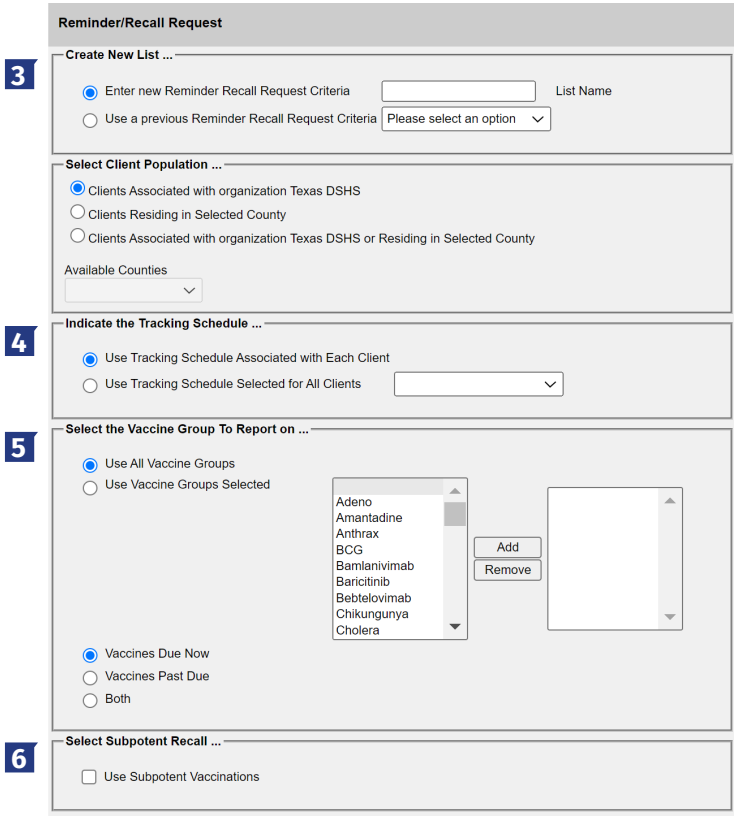


Figure 2: Generate Reminder/Recall Report Part 2

3. Set the Request Criteria: The Create New List Section gives users the option of selecting saved reminder recall request criteria or creating a new reminder recall request.

- Enter new Reminder Recall Request Criteria: Selecting the radio button and supplying a list name will generate a new reminder recall request report that can be generated as a report or saved as a template and later generated as a report.
- Use a previous Reminder Recall Request Criteria: Selecting the “Use a previous Reminder Recall Request Criteria” radio button and selecting a list name displays that template’s criteria. Once the criteria displays, users can edit the criteria from the previous list before generating the report.

4. Indicate the Tracking Schedule: Choose which set of recommended immunizations and corresponding dates will be compared to each client’s immunization history.

5. Select the Vaccine Group to Report on: Choose which vaccines will be included in the report by selecting a vaccine and clicking the Add button. Also select which vaccines to include, vaccines that are Due Now, Past Due, or Both.

6. Selecting Subpotent Recall: This filter will show the clients with Sub-potent vaccinations recorded.

7. Selecting a School or Primary Care Provider: This filters the clients who have been assigned to the selected school or physician.

6

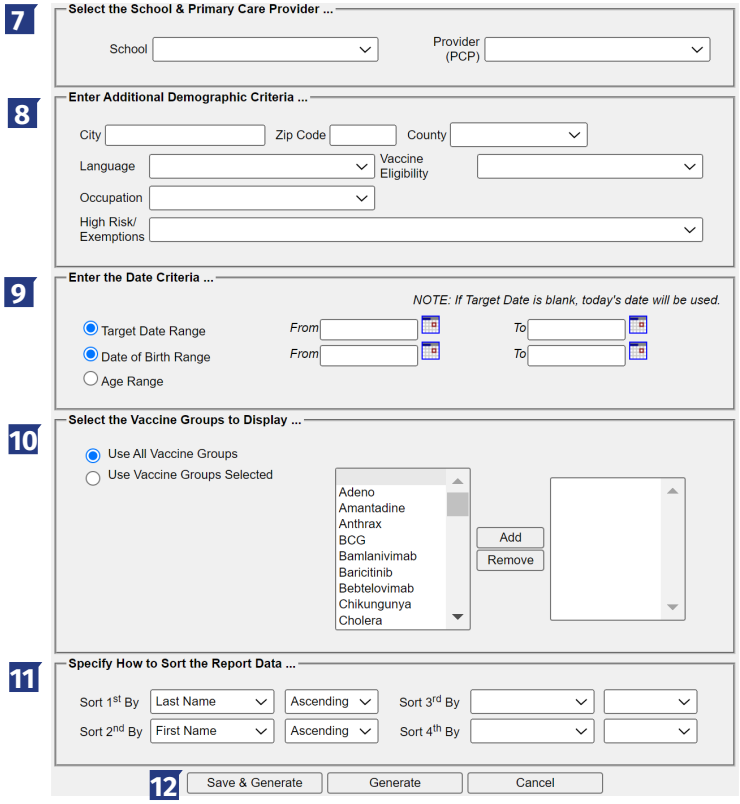


Figure 3: Generate Reminder/Recall Report Part 3

8. Enter Additional Demographic Information: Entering and/or selecting these options allows filtering of clients whose records match specific demographic information.

9. Enter the Date criteria: Select a Date Range to filter clients.

- Target Date – Entering a target date range will return clients who are due now, are past due, or will be due for the selected vaccine within the specified date range.
- Birth Date - Entering a birth date range will return clients who were born between the dates entered.
- Age Range - Entering an age range will return clients whose age falls between the dates entered.

10. Select Vaccine Groups to Display: Selecting Vaccine Groups to display will filter for the vaccine groups that display on the report as being recommended. By default, all vaccine groups that are due now or past due display on the report.

11. Specify How to Sort the Report Data: Allows a choice of sorting options. The default is last name in ascending order, then first name in ascending order.

12. Click the Save & Generate button to save the request criteria and to generate the report.

- If previous Reminder Recall Request Criteria was selected, this will save any changes made to template.
- Click the Generate button to generate the report and not save as a template or save changes to the criteria list.
- Click the Cancel button to return to the Generate Reports screen.

Reminder Request

Status Screen See Figure 4: Status Screen.

Once the reports are generated the Reminder Request Status screen displays. This screen will only retain one report at a time, and as new reports are generated the previous report will no longer be accessible. The status indicates the percentage of completion for the report. Periodically click on Refresh to update the completion percentage information. The time it will take for the report to generate will depend upon the number of clients associated with the provider organization.

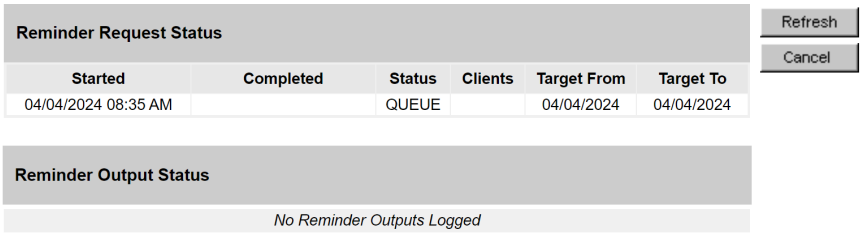


Figure 4: Status Screen

This screen will also display all the reminder output options that were generated for the specific report.

1. When redirected to the Reminder Request Status screen, click the Refresh button until the status is 100%.

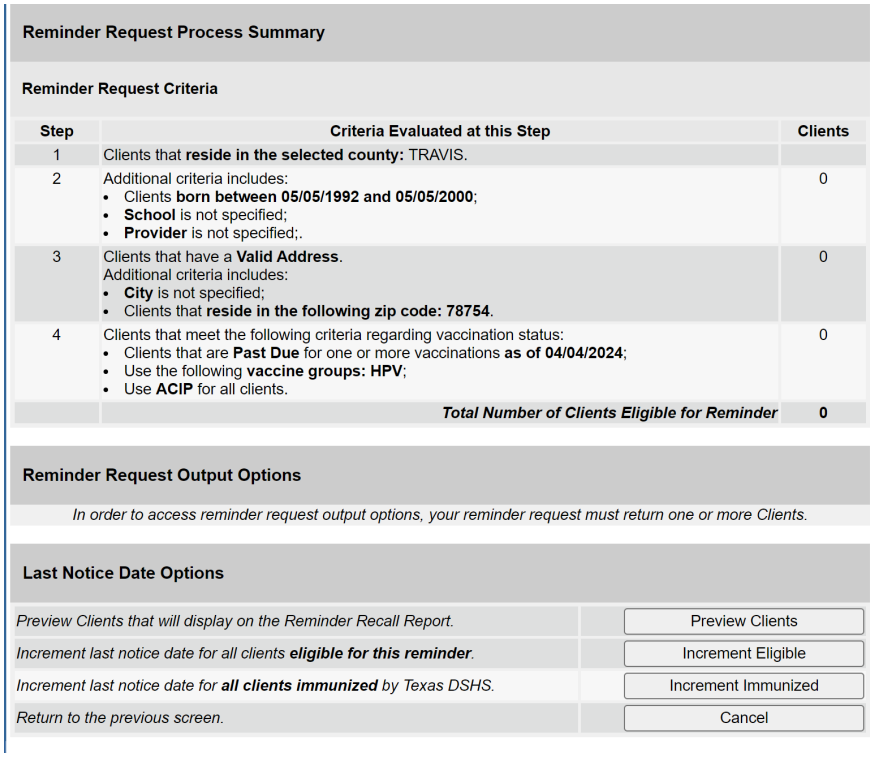
2. When the report is ready, click on the blue hyperlink to go to the Reminder Request Process Summary screen.

Note: The report will run in the background similar to other reports, allowing users to exit ImmTrac2 or work on other ImmTrac2 tasks until it completes. To go to the Reminder Request Status screen, click on “generate report” on the menu panel and click the “Status” link next to the Reminder/Recall Report link.

Reminder Request Process Summary Screen

The Summary screen is broken up into three sections: Reminder Request Criteria, Reminder Request Output Options, and Last Notice Date Options. From the Summary screen, users can create various reminder output options.

Reminder Request Criteria: This section lists the number of clients involved in the search and the criteria used to define the search. The Total Number of Clients Eligible for Reminder at the bottom of the screen is dependent upon the search criteria and is narrowed down by each criteria step. See Figure 5: Reminder Request Criteria.



Reminder Request Process Summary

Reminder Request Criteria

Step	Criteria Evaluated at this Step	Clients
1	Clients that **reside in the selected county:** TRAVIS.	
2	Additional criteria includes: • Clients **born between 05/05/1992 and 05/05/2000**; • **School** is not specified; • **Provider** is not specified;.	0
3	Clients that have a **Valid Address**. Additional criteria includes: • **City** is not specified; • Clients that **reside in the following zip code: 78754**.	0
4	Clients that meet the following criteria regarding vaccination status: • Clients that are **Past Due** for one or more vaccinations **as of 04/04/2024**; • Use the following **vaccine groups: HPV**; • Use **ACIP** for all clients.	0
	Total Number of Clients Eligible for Reminder	**0**

Reminder Request Output Options

In order to access reminder request output options, your reminder request must return one or more Clients.

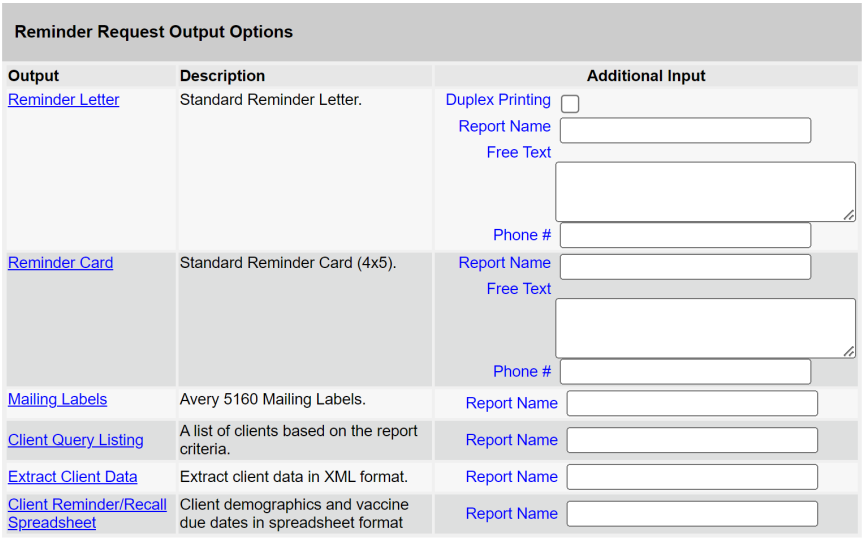
Last Notice Date Options

Preview Clients that will display on the Reminder Recall Report.	Preview Clients
*Increment last notice date for all clients **eligible for this reminder**.*	Increment Eligible
*Increment last notice date for **all clients immunized** by Texas DSHS.*	Increment Immunized
Return to the previous screen.	Cancel

Figure 5: Reminder Request Criteria

Reminder Request Output Options: This section lists the various reminder output options available, including both standard outputs and custom outputs. See below and see also Figure 6: Reminder Request Output Options.

- Output – This column displays the types of reports that can be produced. These reports are described in detail in the table below. Clicking the Hyperlink in the Output column will generate the report that was selected.
- Description - This column provides a brief description of the output option.
- Additional Input - This column displays options for including additional information on the output report and defining a report:
  - Report Name: Enter the Name to describe the output report.
  - Free text: Enter in text that will appear on the report.
  - Phone number: Enter in the phone number that will appear on the output report.



Reminder Request Output Options

Output	Description	Additional Input
Reminder Letter	Standard Reminder Letter.	Duplex Printing ☐ Report Name Free Text Phone #
Reminder Card	Standard Reminder Card (4x5).	Report Name Free Text Phone #
Mailing Labels	Avery 5160 Mailing Labels.	Report Name
Client Query Listing	A list of clients based on the report criteria.	Report Name
Extract Client Data	Extract client data in XML format.	Report Name
Client Reminder/Recall Spreadsheet	Client demographics and vaccine due dates in spreadsheet format	Report Name

Figure 6: Reminder Request Output Options

Reminder Letter

The letter output option allows users to generate a standard form letter to the parent/guardian for each client returned on the query. The letter allows room at the top for the organization's letterhead. The body of the letter includes the client's immunization history, recommended immunizations, and due dates. There are up to two lines for free text and/or a telephone number. To generate Reminder Letter, follow the steps below (see Figure 7: Generate Reminder Letter Steps 1-2):

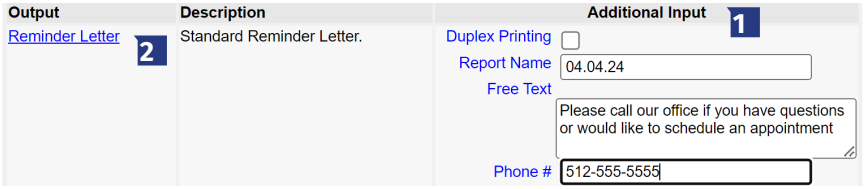


Figure 7: Generate Reminder Letter

1. Under the Additional Input column, there are options to enter the following:

- Duplex printing – printing on both sides.
- Report Name - if a Report Name is not indicated, the report will simply be named Reminder Letter on the Reminder Report Status screen with the date it was generated. Enter up to 20 characters in this field.
- Free Text - include a maximum of 400 characters in this field. This information will be displayed as the closing for each letter.
- Phone - the telephone number is presented in the closing for each letter.

2. Click the Reminder Letter hyperlink.

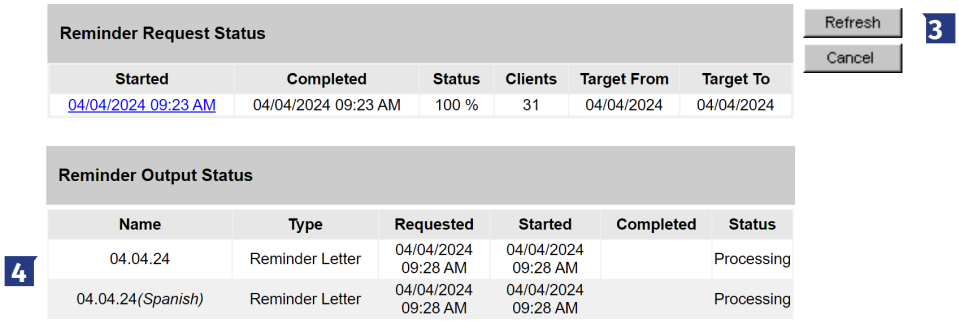


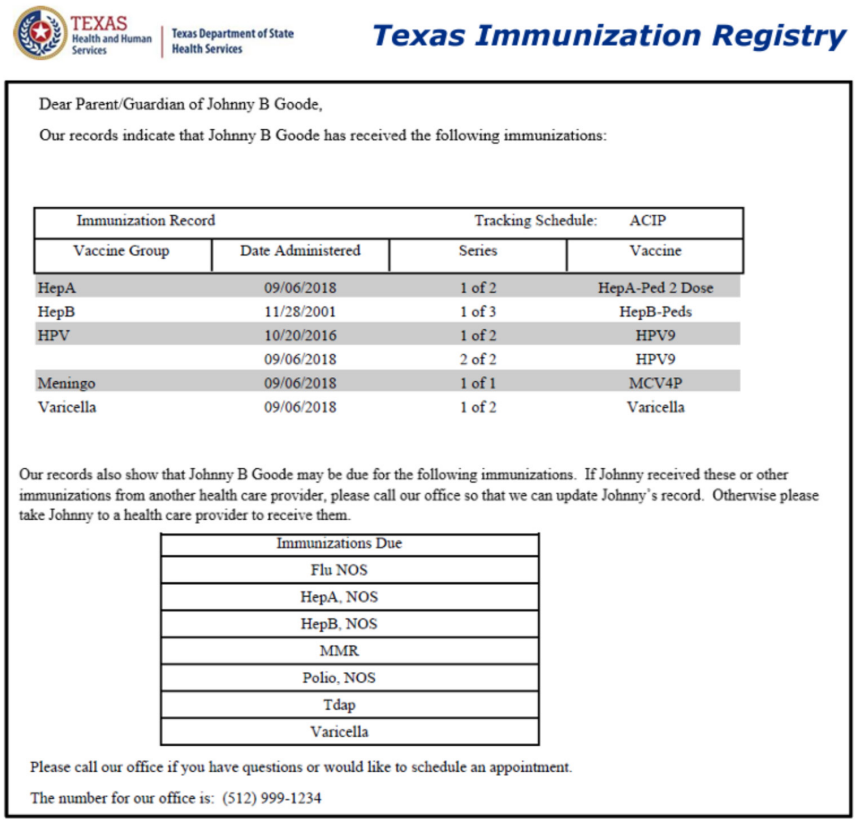
Figure 8: Generate Reminder Letter

3. Users are redirected back to the Reminder Request and Output Status screen. If needed, click the Refresh button until the status is "Ready." See Figure 8: Generate Reminder Letter Steps 3 and 4.

4. The Reminder Letter will be listed at the top of the Output Status section as an active hyperlink available in both English and Spanish.

- For clients who have selected Spanish as their "Language Spoken" option in the Client Information tab of their client's record, the Reminder Letter will be output in Spanish.

- Click on the Reminder Letter hyperlink to view or print the letters in a PDF file. See Figure 9: Reminder Letter Example.



TEXAS Health and Human Services | Texas Department of State Health Services

Texas Immunization Registry

Dear Parent/Guardian of Johnny B Goode,

Our records indicate that Johnny B Goode has received the following immunizations:

Immunization Record		Tracking Schedule:	ACIP
Vaccine Group	Date Administered	Series	Vaccine
HepA	09/06/2018	1 of 2	HepA-Ped 2 Dose
HepB	11/28/2001	1 of 3	HepB-Peds
HPV	10/20/2016	1 of 2	HPV9
	09/06/2018	2 of 2	HPV9
Meningo	09/06/2018	1 of 1	MCV4P
Varicella	09/06/2018	1 of 2	Varicella

Our records also show that Johnny B Goode may be due for the following immunizations. If Johnny received these or other immunizations from another health care provider, please call our office so that we can update Johnny's record. Otherwise please take Johnny to a health care provider to receive them.

Immunizations Due
Flu NOS
HepA, NOS
HepB, NOS
MMR
Polio, NOS
Tdap
Varicella

Please call our office if you have questions or would like to schedule an appointment.

The number for our office is: (512) 999-1234

Figure 9: Reminder Letter Example

Reminder Card

The Reminder Card output option allows users to generate a standard reminder card for the parent/guardian for each client returned on the query. The card allows room at the top for a greeting. The body of the card includes the client's recommended immunizations and due dates. There are up to two lines for free text and/or a telephone number.

To generate Reminder Cards, follow the steps below (see Figure 10: Generate Reminder Card and Figure 11: Generate Reminder Card).

1. Under the Additional Input column, users have the option of entering:

    a. Report Name - If a Report Name is not indicated, the report will simply be named "Reminder Card" on the Reminder Report Status screen with the date it was generated. Enter up to 20 characters in this field.

    b. Free Text - Includes a maximum of 400 characters in this field. This information will be displayed as the closing for each card. c. Phone - The telephone number is presented in the closing for each of the card.

2. Click the Reminder Letter hyperlink.

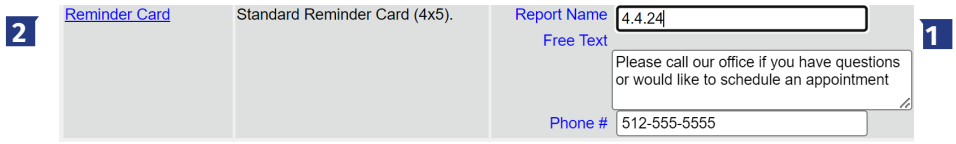


Figure 10: Generate Reminder Card

3. Users are redirected back to the Reminder Request and Output Status screen, and if needed click the Refresh button until the status is "Ready."

4. The Reminder Card will be listed at the top of the Output Status section as an active hyperlink available in both English and Spanish. Click on the Reminder Card hyperlink to view or print the letters in a PDF file.

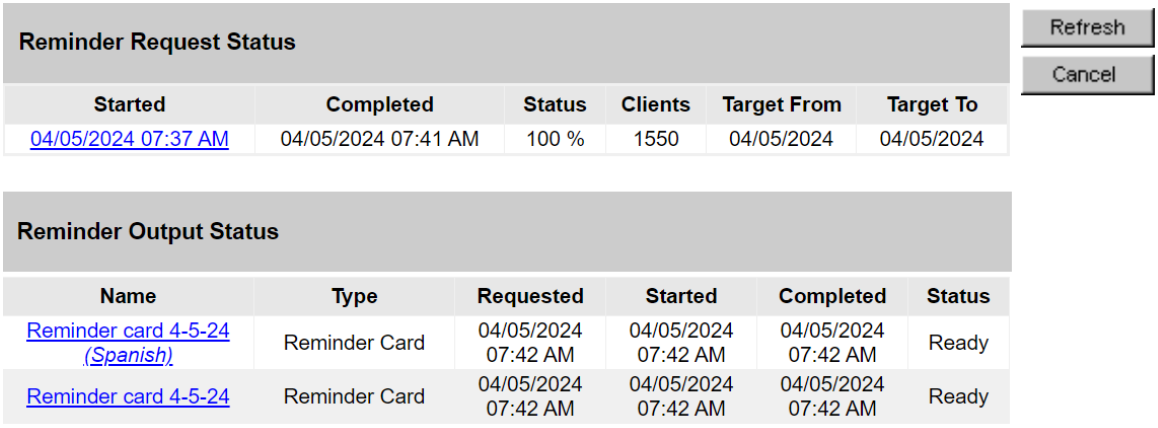
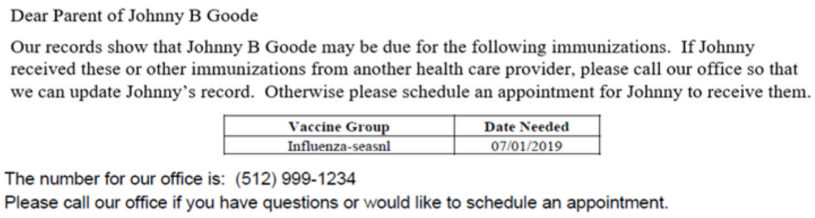


Figure 11: Generate Reminder Card

See Figure 12: Generate Reminder Card Example.



Dear Parent of Johnny B Goode

Our records show that Johnny B Goode may be due for the following immunizations. If Johnny received these or other immunizations from another health care provider, please call our office so that we can update Johnny's record. Otherwise please schedule an appointment for Johnny to receive them.

Vaccine Group	Date Needed
Influenza-seasnl	07/01/2019

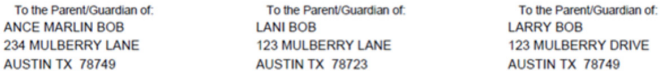
The number for our office is: (512) 999-1234
Please call our office if you have questions or would like to schedule an appointment.

Figure 12: Generate Reminder Card Example

Mailing Labels

The labels output option produces 30 labels per screen on Avery Mailing Labels #5160.

See Figure 13: Generate Reminder Mailing Labels Example.



To the Parent/Guardian of:
ANCE MARLIN BOB
234 MULBERRY LANE
AUSTIN TX 78749

To the Parent/Guardian of:
LANI BOB
123 MULBERRY LANE
AUSTIN TX 78723

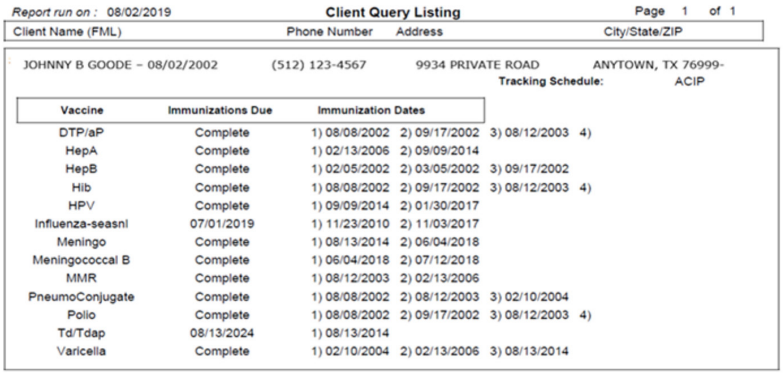
To the Parent/Guardian of:
LARRY BOB
123 MULBERRY DRIVE
AUSTIN TX 78749

Figure 13: Generate Reminder Mailing Labels Example

Client Query

Listing The Client Query Listing displays contact information for those clients identified as being due/overdue in the Reminder/Recall output in a report format. This report lists every client that was returned in the report query process.

See Figure 14: Client Query Listing Example.



Report run on : 08/02/2019 **Client Query Listing** Page 1 of 1

Client Name (FML)	Phone Number	Address	City/State/ZIP
JOHNNY B GOODE – 08/02/2002	(512) 123-4567	9934 PRIVATE ROAD	ANYTOWN, TX 76999-

Tracking Schedule: ACIP

Vaccine	Immunizations Due	Immunization Dates
DTP/aP	Complete	1) 08/08/2002 2) 09/17/2002 3) 08/12/2003 4)
HepA	Complete	1) 02/13/2006 2) 09/09/2014
HepB	Complete	1) 02/05/2002 2) 03/05/2002 3) 09/17/2002
Hib	Complete	1) 08/08/2002 2) 09/17/2002 3) 08/12/2003 4)
HPV	Complete	1) 09/09/2014 2) 01/30/2017
Influenza-seasnl	07/01/2019	1) 11/23/2010 2) 11/03/2017
Meningo	Complete	1) 08/13/2014 2) 06/04/2018
Meningococcal B	Complete	1) 06/04/2018 2) 07/12/2018
MMR	Complete	1) 08/12/2003 2) 02/13/2006
PneumoConjugate	Complete	1) 08/08/2002 2) 08/12/2003 3) 02/10/2004
Polio	Complete	1) 08/08/2002 2) 09/17/2002 3) 08/12/2003 4)
Td/Tdap	08/13/2024	1) 08/13/2014
Varicella	Complete	1) 02/10/2004 2) 02/13/2006 3) 08/13/2014

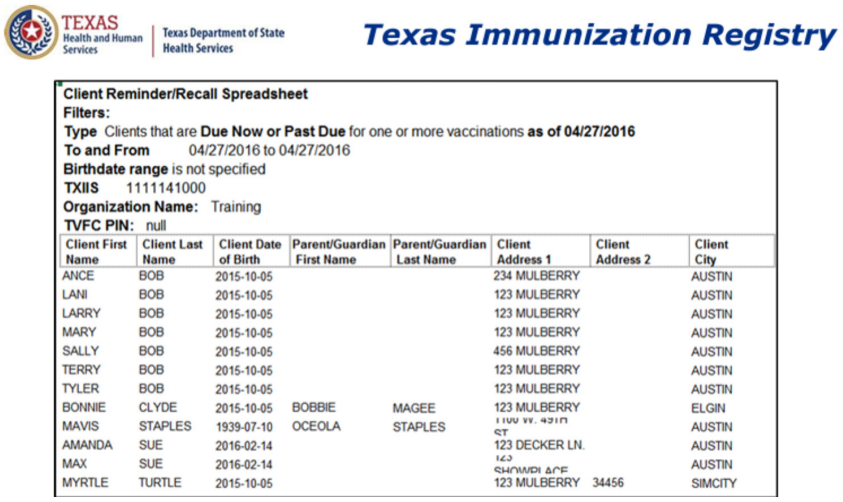
Figure 14: Client Query Listing Example

Extract Client

Data The Client Extract Data displays in an XML format and contains every client and their demographic information that was returned in the report query process.

Client Reminder/Recall Spreadsheet

The Client Extract Data displays client demographic information, immunization history, and recommendations for those clients identified as being due/overdue in the Reminder/Recall output in an Excel spreadsheet. This report lists every client that was returned in the report query process. See Figure 15: Reminder/Recall Spreadsheet Example.


TEXAS Health and Human Services | Texas Department of State Health Services

Texas Immunization Registry

Client Reminder/Recall Spreadsheet
Filters:
Type Clients that are **Due Now or Past Due** for one or more vaccinations **as of 04/27/2016**
To and From 04/27/2016 to 04/27/2016
Birthdate range is not specified
TXIIS 1111141000
Organization Name: Training
TVFC PIN: null

Client First Name	Client Last Name	Client Date of Birth	Parent/Guardian First Name	Parent/Guardian Last Name	Client Address 1	Client Address 2	Client City
ANCE	BOB	2015-10-05			234 MULBERRY		AUSTIN
LANI	BOB	2015-10-05			123 MULBERRY		AUSTIN
LARRY	BOB	2015-10-05			123 MULBERRY		AUSTIN
MARY	BOB	2015-10-05			123 MULBERRY		AUSTIN
SALLY	BOB	2015-10-05			456 MULBERRY		AUSTIN
TERRY	BOB	2015-10-05			123 MULBERRY		AUSTIN
TYLER	BOB	2015-10-05			123 MULBERRY		AUSTIN
BONNIE	CLYDE	2015-10-05	BOBBIE	MAGEE	123 MULBERRY		ELGIN
MAVIS	STAPLES	1939-07-10	OCEOLA	STAPLES	1100 W. 49TH ST		AUSTIN
AMANDA	SUE	2016-02-14			123 DECKER LN.		AUSTIN
MAX	SUE	2016-02-14			123 SHOWPLACE		AUSTIN
MYRTLE	TURTLE	2015-10-05			123 MULBERRY	34456	SIMCITY

Figure 15: Reminder/Recall Spreadsheet Example.

To generate the Mailing Labels, Client Query Listing, Extract Client Data, and Client Reminder/Recall Spreadsheet, follow the steps below.

See Figure 16: Generate Reminder Output Options Step 1-2.

Note: The reminder output options are generated one at a time.

1. Under the Additional Input column of the table enter a Report Name - if a Report Name is not indicated, the report will simply be named “Mailing Labels” or “Client List”, or “Client XML”, or “Client Reminder/Recall Spreadsheet” on the Reminder Report Status screen with the date and time it was generated. Enter up to 20 characters in each file name field.

2. Click the appropriate Output hyperlink: “Mailing Labels”, “Client Query Listing”, “Extract Client Data”, or “Client Reminder/Recall Spreadsheet”.

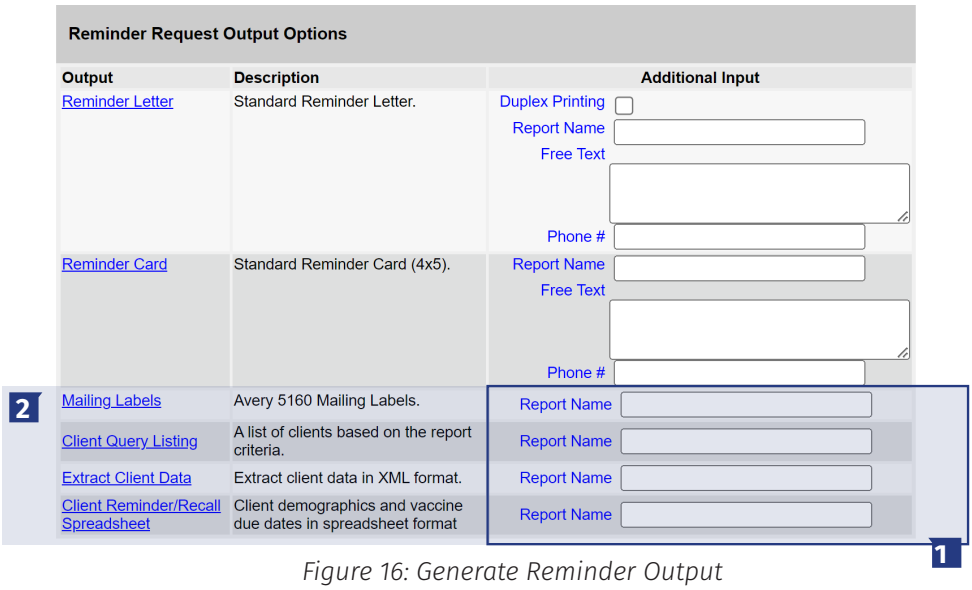


Figure 16: Generate Reminder Output

3. You will be redirected back to the Reminder Request Status and Output Status screen

(See Figure 17: Generate Reminder Output Options Step 3-4). Click the Refresh button until the status is “Ready.”

4. Each reminder output will be listed in the Output Status section as an active hyperlink - click on the applicable option to open the output file.

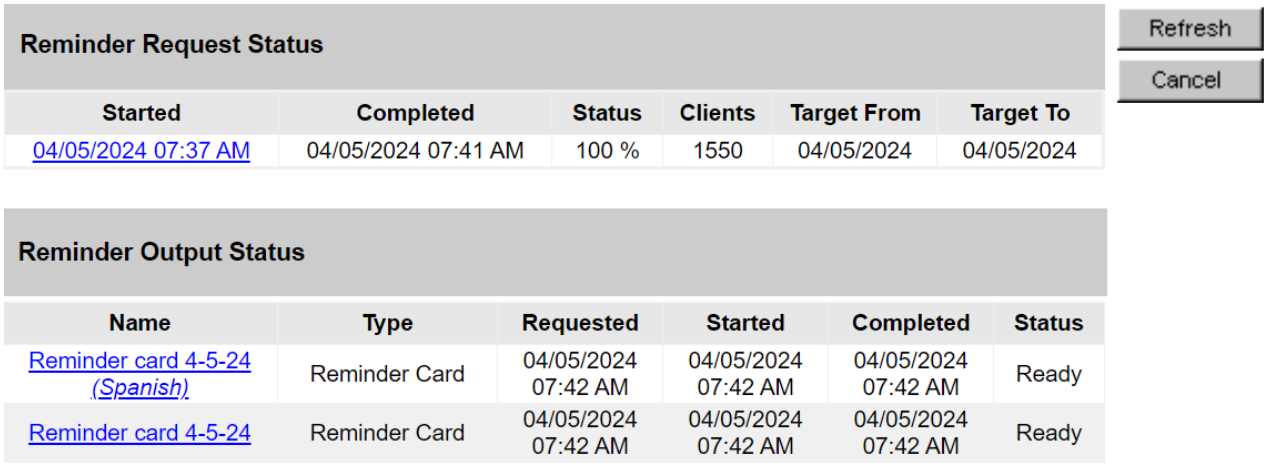


Figure 17: Generate Reminder Output

16

Last Notice Date Options

The Reminder Request Process Summary screen allows users to reset the last notice date, which will affect future reminder/recall notices generated using this information.

See Figure 18: Reminder/Recall Last Notice Date Options.

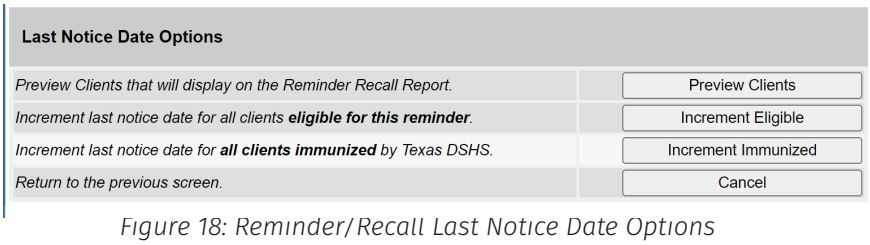


Figure 18: Reminder/Recall Last Notice Date Options

Preview Clients: view a list of clients included in the Reminder Recall Report. This information includes a hyperlink to each client's demographic record. This is the same screen that display if the Check Reminder List is selected from the Generate Report menu option.

Increment Eligible: used to reset the last notice date for all clients eligible for this reminder. The last notice date is viewable on the client's demographic record under the organization information section. Increment Immunized: used to increment the last notice date for all clients immunized by your organization.

Cancel: to return to the Reminder Request Status screen. Custom Letter In addition to the standard letter, ImmTrac2 allows users to create and store up to three custom letters to be used for reminders and recalls. Once a custom letter is created it is available for selection on the Reminder Request Output Option screen for the Reminder Report.

See Figure 19: Reminder Request Output Options.

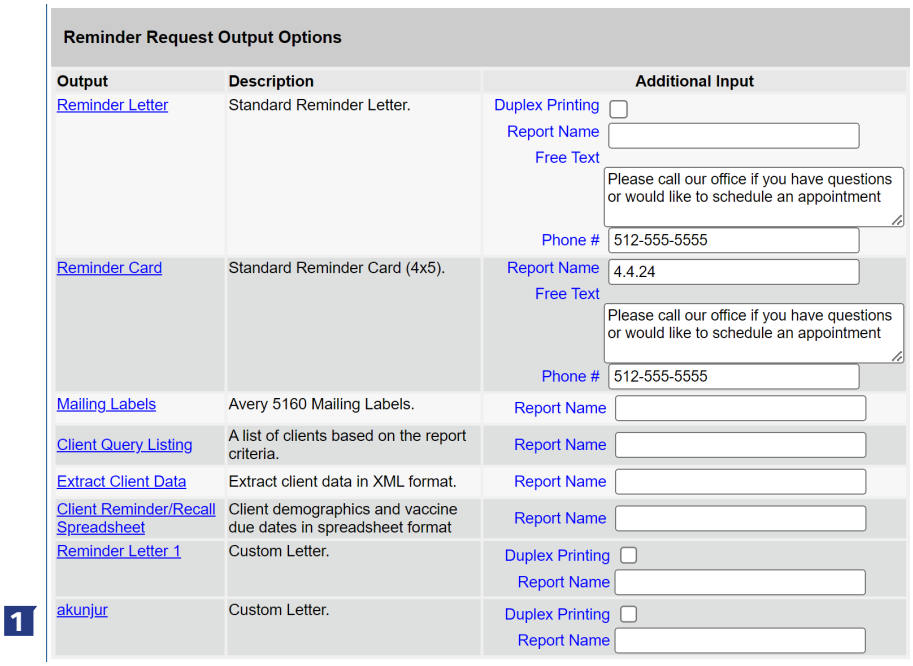


Figure 19: Reminder Request Output Options

Create a New Reminder/Recall Custom Letter

NOTE: One advantage of the Reminder/Recall Custom Letter is that you can choose to not include the client's immunization history in the letter if you do not want to include it. To create Reminder/Recall Custom Letters, follow the steps below.

See Figure 20: Generate Reminder/Recall Custom Letters.

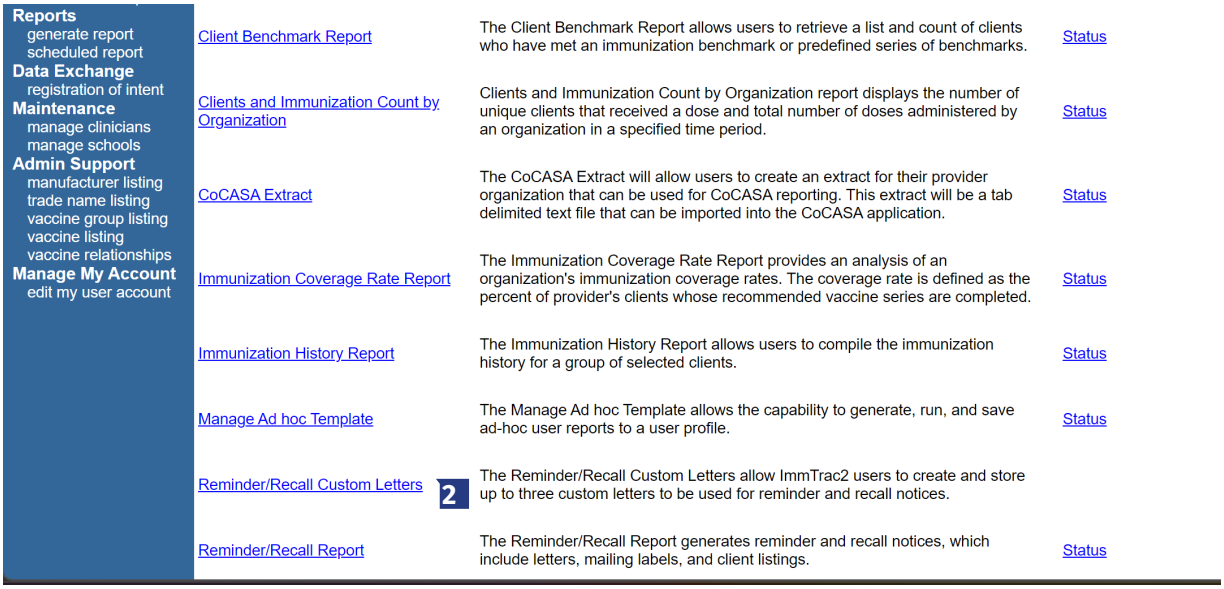


Figure 20: Generate Reminder/Recall Custom Letters

1. Click the Generate Report option from the menu panel.

2. Select Reminder/Recall Custom Letters.

3. On the Reminder/Recall Customer Letter screen, click the New Customer Letter link to begin creating the custom letter. See Figure 21: Reminder/Recall Custom Letters Step 3.

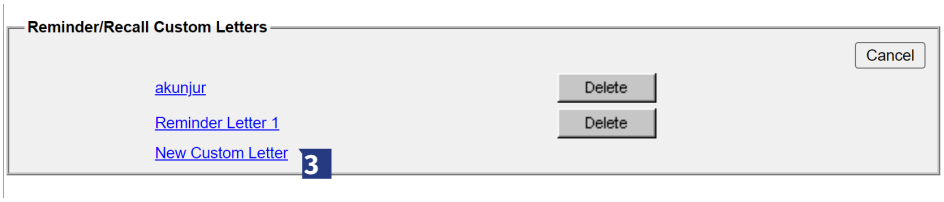


Figure 21: Generate Reminder/Recall Custom Letters

4. Fill out the template using Figure 22: Reminder/Recall Custom Letters Step 4 and also see the Reminder/Recall Custom Letters Options to help complete the customized template.

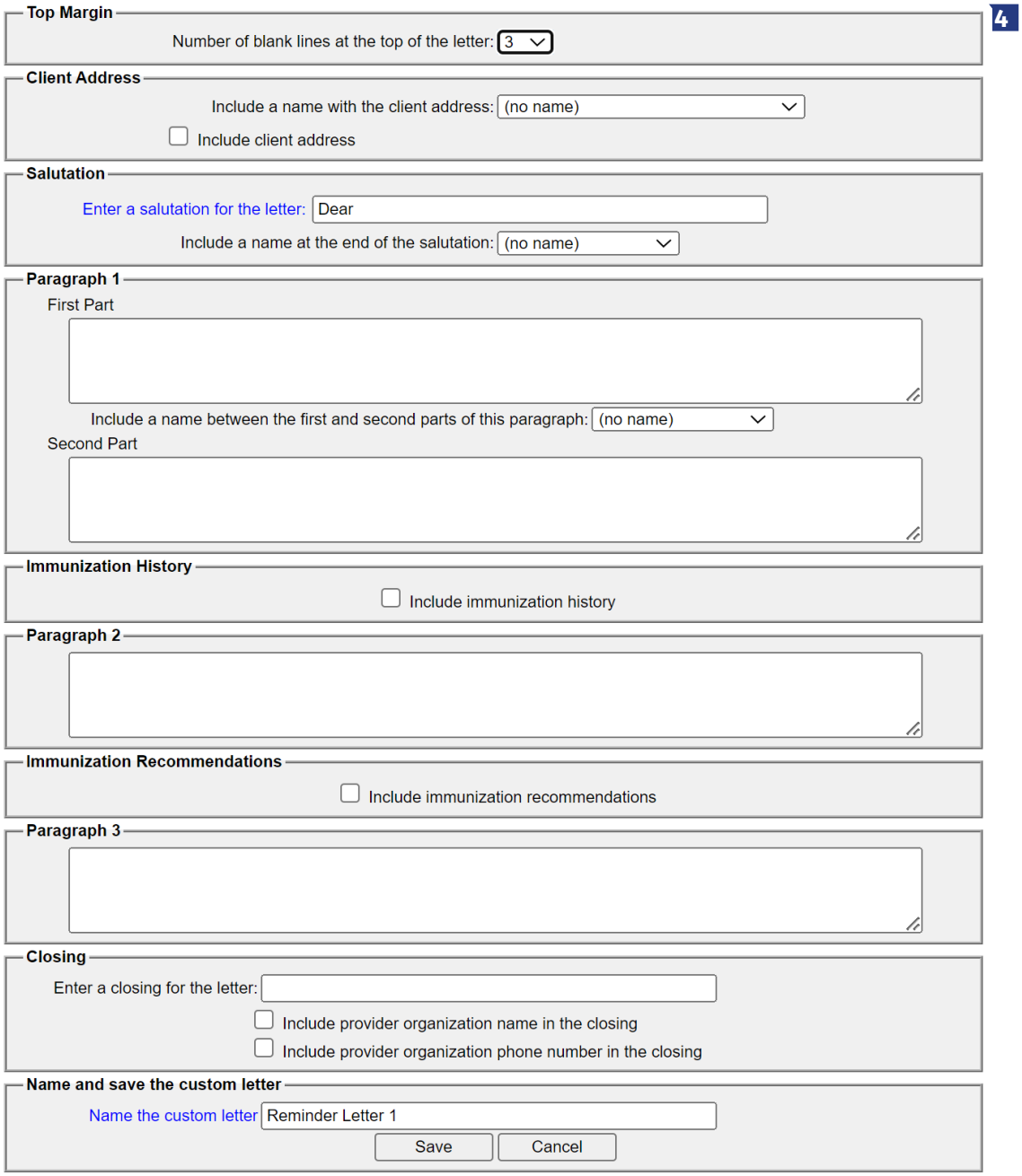


Figure 22: Generate Reminder/Recall Custom Letters

Reminder/Recall Custom Letter options:

- **Top Margin.** From the drop-down list provided, choose the number of blank lines at the top of the letter. These blank spaces will leave room for your office letterhead. This field will default to 3.
- **Client Address.** Check the box to include the client's address at the top of the letter.
- **Salutation.** Enter a greeting in the text box to begin the letter. For example, "Dear" or "Greetings." Use the drop-down arrow to determine if you want to Include a name at the end of the salutation. If "Name" is selected, the name of the client will show up after the salutation. If "Responsible Person" is chosen, the letter will read <salutation> Parent/Guardian of <client name>. For example, "Dean Parent/Guardian of Peggy Sue."
- **Paragraph 1 First Part.** Enter desired text. Enter up to 4,000 characters of text in this field.
- **Paragraph 1 Name Option.** Include a name between the first and second part of this paragraph: Choose the name to appear within the paragraph from the drop-down list. Select either parent/guardian, client name or no name.
- **Paragraph 1 Second Part.** If you chose to enter a name, add the remaining text for the first paragraph in this field.
- **Immunization History Option.** Check the box to include the client's immunization history in the letter. If you do not want to include the client's immunization history in this letter, do not check the box "Include immunization history."
- **Paragraph 2.** Enter desired text. Enter up to 4,000 characters of text in this field.
- **Immunizations Recommended Option.** Check this box to include the immunization needed forecast for the client in the letter.
- **Paragraph 3.** Enter desired text. Enter up to 4,000 characters of text in this field.
- **Closing.** Enter a closing word or statement for the letter in this field. You have the option of checking a box to include the name of the provider organization in the closing, and another option of checking a box to include the phone number of the organization in the closing.

5. Enter the Customer Letter Name, and then Click the Save Figure 23: Reminder/Recall Custom Letters Data Step 5.

- The screen will refresh, but no message displays.
- Click the Cancel button. See button to return to the previous Reminder/Recall Customer Letters screen as seen in step 3, where the newly created letter displays as a hyperlink.

Figure 23: Generate Reminder/Recall Custom Letters

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Edit a Reminder/Recall Custom Letter

To edit an existing Reminder/Recall Customer Letter, follow the steps below.
See Figure 24: Edit Reminder/Recall Custom Letters Step 1.

1. Once you have navigated to the Reminder/Recall Custom Letter screen, click the customer letter link.

Figure 24: Edit Reminder/Recall Custom Letters

2. Update the customer letter data or letter name as needed, and then click the Save button. See Figure 23: Reminder/Recall Custom Letters Data Table for details on each data field.

Figure 23: Generate Reminder/Recall Custom Letters

- The screen will refresh, but no message displays. (Not Shown)
- Click the Cancel button to return to the previous Reminder/Recall Customer Letters screen as seen in step 3. If the letter name was updated, the new name displays.

Delete a Reminder/Recall Custom Letter

To delete an existing Reminder/Recall Customer Letters, follow the steps below.

See Figure 25: Delete Reminder/Recall Custom Letters Steps 1 and 2.

1. Once users have navigated to the Reminder/Recall Custom Letter screen, click the Delete

2. Click the OK button next to the letter to be deleted to delete the Reminder/Recall Custom Letter.

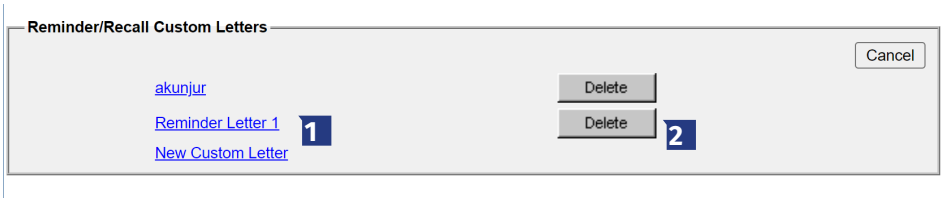
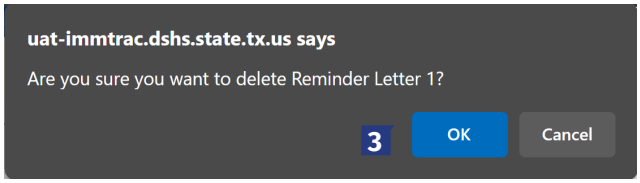


Figure 25: Edit Reminder/Recall Custom Letters



Section 7
ImmTrac2 TIPS Guide

Contents

Section 1: Description of the TIPS Report

The TIPS report provides each registered organization in ImmTrac2 an overall summary of the user activity, online activity, and data exchange activity for the previous month.

Organization Details

See Figure 1: Organization Details.

Figure 1: Organization Details

1. Facility/Organization Name as displayed in ImmTrac
2. TVFC/ASN provider identification number (if applicable).
3. Each organization will be rated based on the user activity, online activity, and data exchange activity (if applicable) for the previous month. Organizations will receive one of the following ratings: Exceeds Expectations, Meets Expectations, or Not Rated.
4. Org Code – Unique identifier for each organization.
5. TX IIS ID – Unique identifier for each organization.
6. Name of the Organization Point of Contact.
7. Email address of the Organization Point of Contact.
8. Expiration date of the ImmTrac2 site agreement.
9. Reporting period for the previous month and displayed as MM/YYYY.

User Activity Details

See Figure 2: User Activity Details.

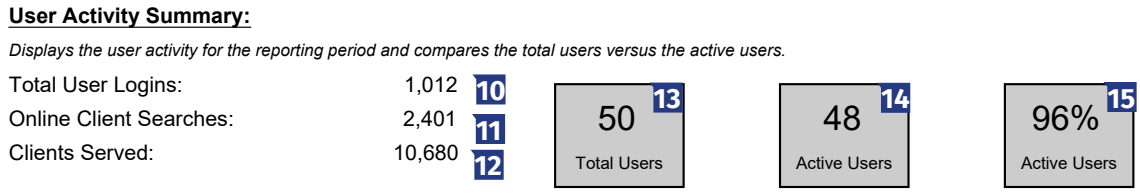


Figure 2: User Activity Details

10. Number of logins during the reporting period by active users (14).
11. Number of online clients searched during the reporting period.
12. Number of active clients associated to the organization.
13. Total number of users associated to the organization.
14. Number of active users associated to the organization.
15. Percentage of active users.

Online Activity Details

See Figure 3: Online Activity Details.

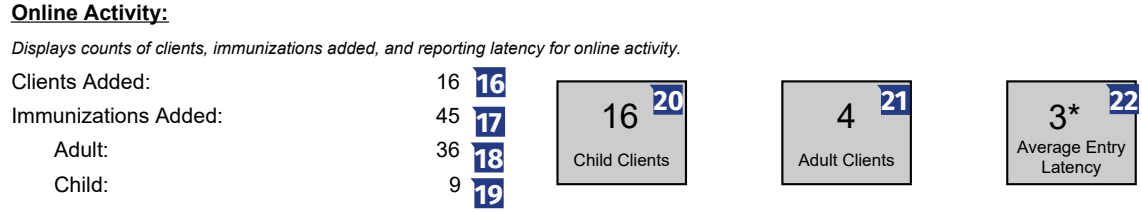


Figure 3: Online Activity Details

16. Total number of clients added online.
17. Total number of immunizations added online.
18. Number of immunizations added online to minors.
19. Number of immunizations added online to adults.
20. Number of minor consents added online.
21. Number of adult consents added online.
22. Average number of days between when an immunization was administered and added online in ImmTrac

Data Exchange Activity Details

See Figure 4: Data Exchange Activity Details.

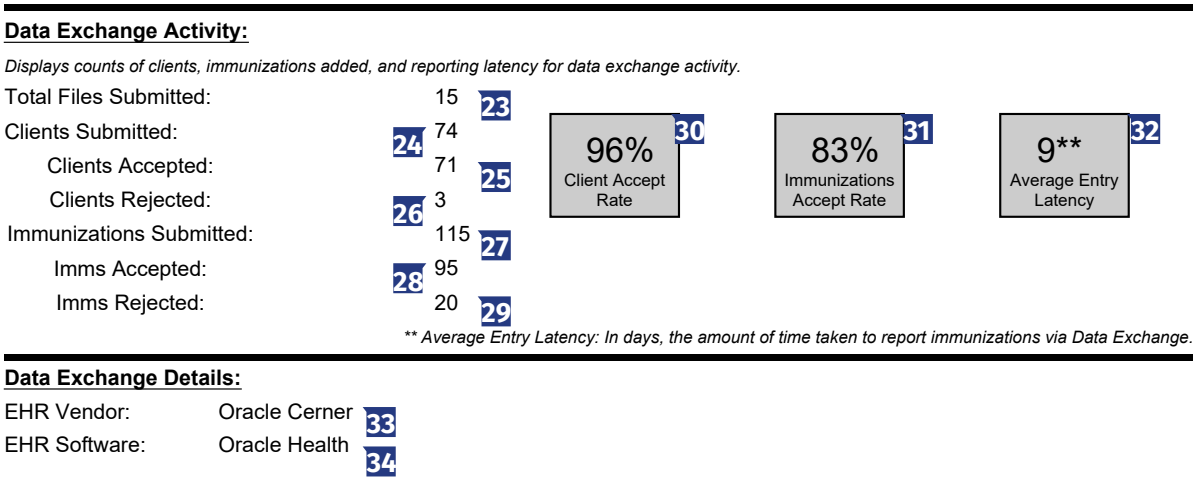


Figure 4: Data Exchange Activity Details

23. Number of data exchange files submitted during the reporting period.
24. Number of client records submitted.
25. Number of client records accepted.
26. Number of client records rejected.
27. Number of immunizations submitted.
28. Number of immunizations accepted.
29. Number of immunizations rejected.
30. Percentage of client records accepted.
31. Percentage of immunizations accepted.
32. Average number of days between when an immunization was administered and added through data exchange.
33. Electronic Health Record (EHR) Vendor as indicated on the Registration of Intent.
34. EHR Software as indicated on the Registration of Intent.

NOTE: Regarding items 24, 25, 26, and 30, if a patient's data is submitted multiple times within a file they will be counted as unique patients, not the same patient. Example: Patient John Smith is reported three times in a file, the system will count John Smith as three clients not as one.

Section 2: How to Generate the TIPS

Report To generate the TIPS report, follow these steps:

1. Log into the appropriate organization in ImmTrac
2. On the left side of the screen, on the menu panel look for “Reports” and click on “generate report”. See Figure 5: Generate Report.

Figure 5: Generate Report

3. In the list of reports available, click on “Texas Immunization Provider Summary (TIPS)”. See Figure 6: Link for Texas Immunization Provider Summary (mockup).

Generate Report	Description	Output
Ad Hoc Count Report	The Ad Hoc Count Report offers a user-defined report and counts results. User can select the fields to include and can define filters and choose the sort order.	Status
Ad Hoc List Report	The Ad Hoc List Report offers a user-defined report and lists results. User can select the fields to include and can define filters and choose the sort order.	Status
Check Reminder List	The Check Reminder List allows Provider Organizations to be able to view their clients for statewide reminder/recalls prior to the state reminder recall process being ran.	
Client Benchmark Report	The Client Benchmark Report allows users to retrieve a list and count of clients who have met an immunization benchmark or predefined series of benchmarks.	Status
Clients and Immunization Count by Organization	Clients and Immunization Count by Organization report displays the number of unique clients that received a dose and total number of doses administered by an organization in a specified time period.	Status
CoCASA Extract	The CoCASA Extract will allow users to create an extract for their provider organization that can be used for CoCASA reporting. This extract will be a tab delimited text file that can be imported into the CoCASA application.	Status
Immunization Coverage Rate Report	The Immunization Coverage Rate Report provides an analysis of an organization's immunization coverage rates. The coverage rate is defined as the percent of provider's clients whose recommended vaccine series are completed.	Status
Immunization History Report	The Immunization History Report allows users to compile the immunization history for a group of selected clients.	Status
Manage Ad hoc Template	The Manage Ad hoc Template allows the capability to generate, run, and save ad-hoc user reports to a user profile.	Status
Reminder/Recall Custom Letters	The Reminder/Recall Custom Letters allow ImmTrac2 users to create and store up to three custom letters to be used for reminder and recall notices.	
Reminder/Recall Report	The Reminder/Recall Report generates reminder and recall notices, which include letters, mailing labels, and client listings.	Status
Texas Immunization Provider Summary	The Texas Immunization Provider Summary (TIPS) allows a user to view a summary of the organization's activity for the previous month.	
Vaccine Eligibility Report	The Vaccine Eligibility Report details the number of clients that were vaccinated by the organization for each vaccine eligibility type for a specified date range.	Status

Figure 6: Link for Texas Immunization Provider Summary (mockup)

NOTE: The TIPS report is generated on the first day of each month and overwrites the previous month’s report.

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8

Section 3: Strategies to Optimize Your TIPS

Rating The following are focus areas to improve your organization's TIPS rating and to ensure that the data in ImmTrac2 is more complete, accurate, and reported in a timely manner.

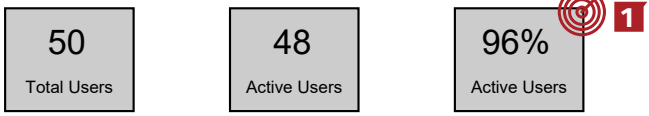
Focus 1: Number of Active Users

Target: At least 75% active users

User Activity Summary:

Displays the user activity for the reporting period and compares the total users versus the active users.

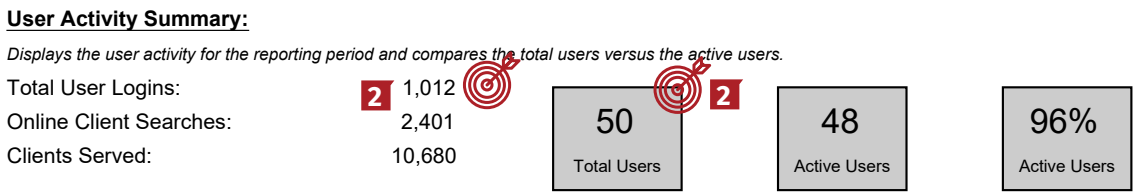
Total User Logins:	1,012
Online Client Searches:	2,401
Clients Served:	10,680



- **Calculation:** The number of Active Users divided by the number of Total Users. An active user is one who has logged into ImmTrac2 within the past 90 days.
- **Target:** Greater than 75% active users.
- **Suggestions:**
  - Disassociate inactive users in your organization. Refer to Section 4: Instructions to Request Adding or Disassociating Users.
  - If adding or disassociating more than five users, please complete a Renewal of your Site Agreement in ImmTrac
- **Note:** Having a high percentage of inactive users is a security risk and asks the question, "Why do these users need access to ImmTrac2?". The Number of Active Users is the starting point for the remaining focus points.

Focus 2: Number of Logins per Active User

Target: Each user logs in at least twice per month

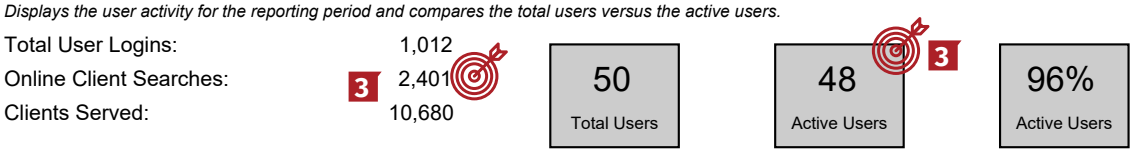


- **Calculation:** The number of Total User Logins divided by the number of Active Users.
- **Target:** Each active user should log into ImmTrac2 twice per month.
- **Suggestions:** Before each patient encounter, users should log into ImmTrac2 to ensure:
  - The client has previously consented and been added to ImmTrac If the client is not found after performing a "smart" search, educate the client on the benefits of the Texas Immunization Registry and give them an opportunity to complete the ImmTrac2 consent form.
  - That client immunization records are up-to-date.
- **Which shots are coming due and/or are past due.**
  - All ImmTrac2 users log in at least twice, including Data Exchange organizations.

Focus 3: Number of Online Client Searches per Active User

Target: Minimum 50 client searches per active user per month

- **Calculation:** The number of Online Client Searches divided by the number of Active Clients Served.
- **Target:** Having a minimum of 50 client searches per active user per month.



- **Suggestions:**
  - Look up client immunization records before each visit. Client searches are preliminary to accessing a client's immunization record. Searches are also prerequisite to adding a new client online.
  - Review the "Benefits of Utilizing TIR Guide".

Focus 4: Number of Immunizations Added per Client

Target: Maximize online immunizations added and data exchange immunizations accepted and number of active clients.

- **Calculation:** The sum of Online Immunizations Added and Data Exchange Immunizations Accepted, divided by the number of Active Clients Served.
- **Target:** Maximize this number.

User Activity Summary:

Displays the user activity for the reporting period and compares the total users versus the active users.

Total User Logins:	1,012
Online Client Searches:	2,401
Clients Served:	10,680

50 Total Users | 48 Active Users | 96% Active Users

Online Activity:

Displays counts of clients, immunizations added, and reporting latency for online activity.

Clients Added:	16
Immunizations Added:	45
Adult:	36
Child:	9

16 Child Clients | 4 Adult Clients | 3* Average Entry Latency

** Average Entry Latency: In days, the amount of time taken to enter an online immunization.*

Data Exchange Activity:

Displays counts of clients, immunizations added, and reporting latency for data exchange activity.

Total Files Submitted:	15
Clients Submitted:	74
Clients Accepted:	71
Clients Rejected:	3
Immunizations Submitted:	115
Imms Accepted:	95
Imms Rejected:	20

96% Client Accept Rate | 83% Immunizations Accept Rate | 9** Average Entry Latency

- **Suggestions:**
  - Use the Creating a List of Active Clients to generate a List of Active Clients.
  - Using the Active Client list to update clients who are no longer under your care:
  - If clients have moved elsewhere or have not been seen for a long time, change their status to “inactive” in the Organization Information tab of the client record.
    See Figure 7: Organization Information – Inactive Status.

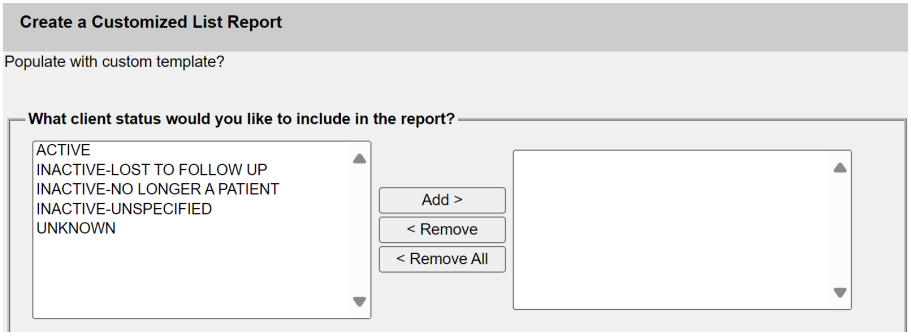
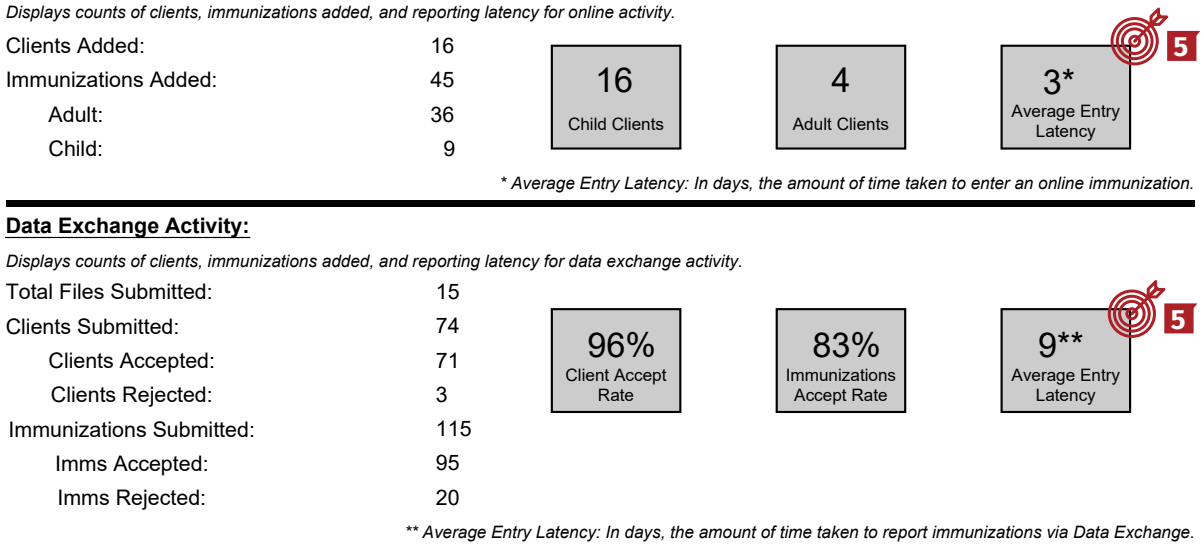


Figure 7: Organization Information – Inactive Status

Focus 5: Average Latency

Target: No more than two days on average between administering an immunization and reporting it,[11] either online or electronically through data exchange.

- **Calculation:** The average of Online Average Entry Latency and Data Exchange Average Entry Latency.
- **Target:** No more than two days on average between administering an immunization and reporting it, either online through the user interface or electronically through data exchange.



- **Suggestions:**
  - Review your organizations procedures for entering immunizations to see what could help get immunizations entered more quickly after they are administered.

Focus 6: Acceptance Rate of Clients and Immunizations Submitted through Data Exchange

Target: 90% or more of the client records and immunization records sent through data exchange are

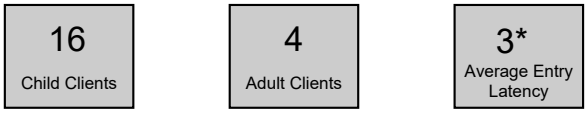
accepted.

- **Calculation:** The average of the Client Accept Rate and the Immunizations Accept Rate, both from data exchange.

Online Activity:

Displays counts of clients, immunizations added, and reporting latency for online activity.

Clients Added:	16
Immunizations Added:	45
Adult:	36
Child:	9

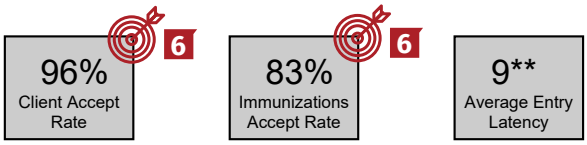


** Average Entry Latency: In days, the amount of time taken to enter an online immunization.*

Data Exchange Activity:

Displays counts of clients, immunizations added, and reporting latency for data exchange activity.

Total Files Submitted:	15
Clients Submitted:	74
Clients Accepted:	71
Clients Rejected:	3
Immunizations Submitted:	115
Imms Accepted:	95
Imms Rejected:	20



*** Average Entry Latency: In days, the amount of time taken to report immunizations via Data Exchange.*

- **Target:** Greater than 90% of client records and immunizations sent through data exchange are accepted.
- **Suggestions:**
  - Contact the Texas Immunization Registry's Interoperability Team at 800-348-9158, option 3, to receive help with your data exchange.
  - Contact your EHR vendor to correct issues resulting in errors.

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Section 4: Instructions to Request Adding or Disassociating Users

Requests

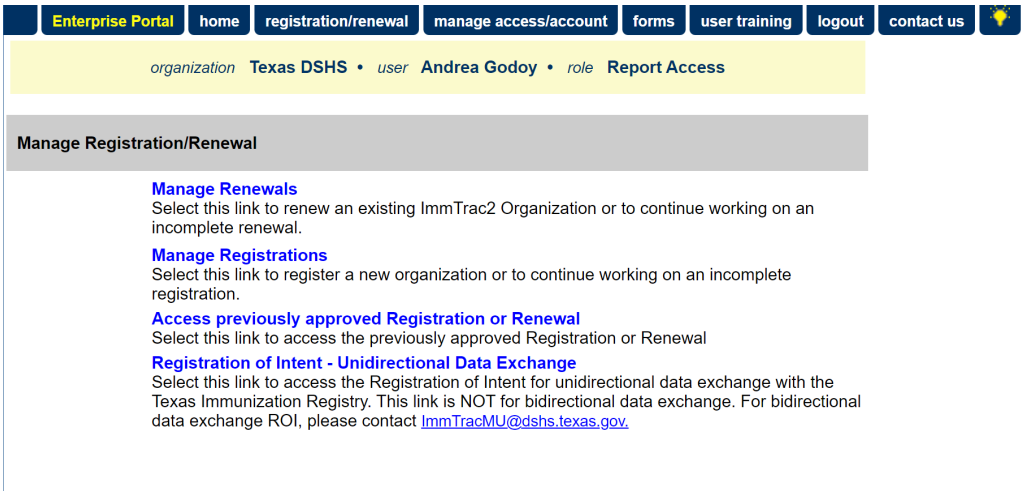
All requests to ADD a new user or DISASSOCIATE a user must be requested by one of the following at the registered organization:

- Organization Point of Contact (POC)
- Primary Registry Point of Contact
- Primary Vaccine Coordinator (listed in ImmTrac2)
- Secondary Vaccine Coordinator (listed in ImmTrac2)

If you aren't sure who these contacts are at your organization, then:

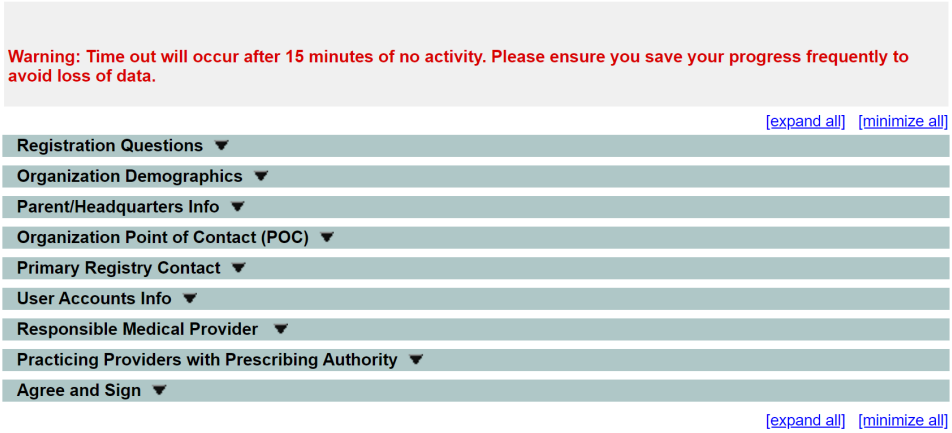
1. Log into the appropriate organization in ImmTrac
2. Click on the "registration/renewal" tab at the top of the ImmTrac2 screen.
3. Click on "Access previously approved Registration or Renewal". See Figure 8: Access Previously Approved Registration or Renewal.

Figure 8: Access Previously Approved Registration or Renewal



4. Then click on the small black triangles to open the "Organization Point of Contact (POC)"

tab and the “Primary Registry Contact” tab. This provides you the names of the individuals serving in these roles. See Figure 9: POC and Primary Registry Contact Tabs.



5. Email requests to ImmTrac2@dshs.texas.gov using the Email Request Instructions and Email Request Template provided below.

More Than Five Users

If you have more than five users to add or disassociate, please submit a renewal of your site agreement and make the updates to the users through the renewal process.

Security Notes

- ImmTrac2 login credentials are assigned to an individual person and must not be shared. Repeated violations may result in loss of access privileges for the individual and/or the organization.
- Each ImmTrac2 user account requires a unique e-mail address so that ImmTrac2 users can reset their own passwords when needed.
- Organization Point of Contacts should carefully consider who needs ImmTrac2 access. Access requests should only be for individuals on a need-to-know and a need-to-have basis. Please do not add more users than what is needed. The more users requested, the longer the user creation process may take.
- Please instruct users at your organization to login as soon as possible. If new user accounts are not accessed within 30 days of creation, the account will be locked. If new user accounts are never accessed within 120 days of creation, they will be deleted.

Email Request Instructions to Add or Disassociate Up to Five Users

- Copy and paste the Email Request Template into an email.
- Add the missing information
  - Organization and Point of Contact Information
  - List of users to be added or disassociated
  - Put an “X” next to the Action Required of either adding or disassociating user.
- Add the subject line: Add-Disassociate Users for [Enter your Organization’s Name].
- Send email to ImmTrac2@dshs.texas.gov.

Email Request Template

Organization and Point of Contact Information
ORGANIZATION NAME:
STREET ADDRESS:
POINT OF CONTACT (POC) FULL NAME:
PHONE NUMBER:
POINT OF CONTACT EMAIL ADDRESS:
ORGANIZATION'S ORG CODE, TX IIS IDnumber (aka PFS IDnumber): (if known)

List of Users to be Added or Disassociated

First User Action Required: Add This User___ Disassociate This User ___
USER FIRST NAME:
USER LAST NAME:
UNIQUE USER EMAIL ADDRESS:
USER JOB TITLE: CLINICIAN / NURSES LICENSE number:
PHONE NUMBER:

Second User Action Required: Add This User___ Disassociate This User ___
USER FIRST NAME:
USER LAST NAME:
UNIQUE USER EMAIL ADDRESS:
USER JOB TITLE:
CLINICIAN / NURSES LICENSE number:
PHONE NUMBER:

Third User Action Required: Add This User___ Disassociate This User ___
USER FIRST NAME:
USER LAST NAME:
UNIQUE USER EMAIL ADDRESS:
USER JOB TITLE:
CLINICIAN / NURSES LICENSE number:
PHONE NUMBER:

Fourth User Action Required: Add This User___ Disassociate This User ___
USER FIRST NAME:
USER LAST NAME:
UNIQUE USER EMAIL ADDRESS:
USER JOB TITLE:
CLINICIAN / NURSES LICENSE number:
PHONE NUMBER:

Fifth User Action Required: Add This User___ Disassociate This User ___
USER FIRST NAME:
USER LAST NAME:
UNIQUE USER EMAIL ADDRESS:
USER JOB TITLE:
CLINICIAN / NURSES LICENSE number:
PHONE NUMBER:

Section 5: Data Exchange Related Information

Focus 1: If Data Exchange Activity is blank

If the TIPS Report shows no data under the Data Exchange Activity, then the organization should review and complete the below qualifications to determine if they are ready to establish a data exchange connection with the registry (i.e., completing the registration of intent).

Registry Status Qualifications

1. Ensure the organization's information is up to date with the registry.
   a. The main headquarters or stand-alone facility is renewed with the registry.
      i. Renewal of location information is required every two years.
   b. All associated facilities are registered as sub-sites of the main organization (i.e., not as a separate or stand-alone facility) with the registry.
      i. If the organization has multiple facilities, each facility that administers immunizations must be registered with the registry. Additionally, they must be properly linked as a sub-site to the main organization.
   c. Organization's staff have active ImmTrac2 user accounts to login to the registry.
      i. Each facility within the organization must have designated staff who have an ImmTrac2 user account.
2. Identify staff at the organization who will be the lead contacts and/or team for establishing and overseeing the data exchange connection with the registry.
   a. Identified staff will collaborate with the registry throughout and after the data exchange connection is established.
   b. Suggested staff include, but not limited to, staff who oversee other types of data exchange for the organization, senior or lead clinical staff, subject matter experts, trainers, or IT support staff. For assistance with ImmTrac2 registrations, renewals or user accounts, contact the Texas Immunization Registry Customer Service at 800-348-915

DATA EXCHANGE QUALIFICATIONS

1. To engage in electronic data exchange, the organization must have an EHR system that meets the registry standards and requirements.

- The organization, through their EHR system, must submit patient and immunization information in Health Level Seven (HL7) 1 Release 5 files to the registry.

    i. Speak with the EHR vendor to confirm the organization's systems are upgraded to send data in this format.

    b. The organization, through their EHR system, must be able to submit batch immunization files to the registry.

    i. Batch files means data is combined into one file that is submitted on a weekly basis. Speak with the EHR vendor to confirm batch HL7 files can be configured.

    c. The organization's patient and immunization data does not have data quality issues or errors. The organization must take and own responsibility of the patient and immunization data it submits as part of establishing a data exchange connection with the registry.

    i. To ensure the organization is submitting great data quality it must identify any data quality errors and correct them timely.

    ii. Speak with the EHR vendor to confirm the organization's systems are configured to the federal and state requirements for data exchange to decrease the likelihood of data quality errors.

Note: The registry verifies that the pre-requisite qualifications have been completed prior to establishing a data exchange connection with the organization (i.e., completing the registration of intent).

Focus 2: Establishing a Data Exchange Connection with the Registry

The following are the steps that must be completed for establishing a data exchange connection with the registry. For data exchange support, contact the Texas Immunization Registry at 800-348-9158, option 3 or email at ImmTrac2@dshs.texas.gov.

STEP 1: IMMTRAC2 REGISTRATION/RENEWAL INFORMATION ORGANIZATIONS MUST:

- Have up to date ImmTrac2 renewal agreements for all facilities registered with ImmTrac2 within their organization.
- Register all facilities not currently registered with ImmTrac2 by completing an ImmTrac2 Site Agreement.

NOTE: Organizations with expired ImmTrac2 site agreements will not be able to proceed with Step 2: Registration of Intent until the agreements are renewed.

HOW TO REGISTER/RENEW INFORMATION

REGISTRATIONS

If the organization is not currently registered with ImmTrac2:

1. Go to the ImmTrac2 website https://immtrac.dshs.texas.gov.
2. Click the 'Registration' tab on the top menu of the site.
3. Click the 'Register' link in the middle of the site to register.
4. Fill in the initial information requested: email address; and Texas Vaccines for Children (TVFC) Pin – if applicable.
5. Complete the registration form.
6. Sign and submit for approval.

RENEWALS

If the organization is currently registered with ImmTrac2 and the information on file is outdated or expired:

1. Login to ImmTrac2
2. Click the 'registration/renewal' tab from the top menu.
3. Click the 'Manage Renewals' link on the page.
4. Complete the renewal form.
5. Sign and submit for approval.

STEP 2: REGISTRATION OF INTENT (ROI)

THE ROI:

- Allows health care entities to inform the registry of their readiness to begin to data exchange;
- Is accessible through ImmTrac2, once logged into the system;
- Can only be submitted by ImmTrac2 users associated to the main headquarters (aka parent organization) or stand-alone facility; and Is processed within two to five business days after it is submitted, the organization receives an Invitation to Onboard (via email) with instructions for establishing connectivity and testing requirements with the registry.

HOW TO COMPLETE THE ROI

1. Login to ImmTrac
2. Click the 'registration/renewal' tab from the top menu.
3. Click the 'Registration of Intent' link from the options listed under the Manage Registration/Renewal information.
4. Respond to the questions.
   - Once the initial two questions have been responded to additional questions will appear.
   - Select the method the organization will report data to the registry.
   - Select the EHR vendor and software used by the organization.
   - Add staff who will be the lead contacts and/or team for establishing and overseeing the data exchange connection with the registry.
   - Select how often the organization will submit data to the registry.
   - Review the organization information that is on file with the registry to ensure all the facilities are listed and accounted for.
5. Complete the registration of intent by clicking the 'Submit' button.

STEP 3: GAINING ACCESS TO DATA EXCHANGE METHODS

As part of establishing a data exchange connection with the registry, the organization is provided access (data exchange credentials) to the registry's data exchange methods which are used to send and receive data. The date exchange credentials are also known as File Transfer Protocol (FTP) credentials.

OVERVIEW

The organization's point of contact, as indicated in ImmTrac2:

Receives the data exchange credentials in a secure email

Is responsible for sharing the data exchange credentials with the organization's EHR vendor.

DATA EXCHANGE CREDENTIALS ARE:

Completely different from the individual ImmTrac2 user accounts

Assigned to the organization, not an individual user

To only be shared with persons responsible for establishing electronic connectivity between the organization and the registry.

FTP INFORMATION

- The organization's point of contact receives a secure email containing the organization's assigned FTP information.
- FTP Username
- FTP Password
- Import Code
- Texas Immunization Information System (TX IIS) Identification (ID)

FTP SPECIFICATIONS

STEP 4: TESTING

Testing Requirements The registry requires all organizations to perform and pass testing to ensure the data exchange is configured to state standards.

- Organizations should use test patients while testing the data exchange connection.
- Any data submitted during testing is not imported to the registry.
    - If real patient data is sent it will not be imported and must be resubmitted once in production. Organization's Responsibilities for Data Exchange

While in test, the organization must:

- Submit test files
- Review the registry's generated data quality assurance reports on the submitted test files
- Correct all data quality errors or issues
- Submit subsequent test files and verify that data quality errors or issues were corrected

Take and own responsibility of the patient and immunization data it submits as part of establishing a data exchange connection with the registry.

TESTING PHASE 1: CONNECTING TO THE REGISTRY

- Connectivity test to ensure the organization properly uses the data exchange credentials to connect to the registry.
- Once successfully connected, the organization must perform user acceptance testing of the patient and immunization information.

TESTING PHASE 2: USER ACCEPTANCE TESTING

- Organizations must submit at least one batch test HL7 file every 30 days until they are promoted to production.
- The test files must depict the volume of data that the organization handles in real-life.
- Failure to submit files within the 30-day time frame may result in removal from the data exchange process.
- Files must be submitted using the required file naming convention: ImportCodeYYDDD.hl7
  - Import Code – represents the provider and identifies the source of the file and is assigned by the registry.
  - YY – identifies the two-digit calendar year.
  - DDD – identifies the three-digit Ordinal Date of the date the file is submitted to the registry.
  - hl7 – is the file extension.

STEPS FOR TESTING

1. Submit batch HL7 file containing patient and vaccination information.
2. Receive an acknowledgment email indicating the file was received.
3. File is analyzed by the registry for any issues.

   a. Various stages of analysis are performed to identify any issues with the file.

   b. If there is a major issue with the file, it will not be processed, and a fatal error email will be sent.

      i. The fatal error(s) will need to be addressed by the organization and their EHR.

      ii. Once the fatal error(s) is addressed, start these steps over.

   c. The registry no longer sends emails about errors for the contents within the batch file.

   d. Organization must work with their EHR vendor on the review, correction and resubmission of the files to the registry.
4. File is processed; typically within two business days of receipt.
5. Data quality reports are generated.

   a. The registry produces reports for the organization to review to identify data quality issues and are found in the FTP account.

   b. Data quality reports include error files and consent notification files.
6. Organization and EHR review the data quality reports.
7. Organization and EHR make corrections to data.

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Section 8 ImmTrac2 Guide to the Ad Hoc List Report

Contents

Getting Started

Purpose

The Ad Hoc List Report offers a user-defined report and lists results for Full-Access Provider users. You can select fields to be displayed in the report, define filters for which clients you wish to include, and choose the sort order for the report, which makes it a good choice for creating a list of active clients.

Recommended Browser

See Figure 1: Icons for Browsers. The recommended browser for ImmTrac2 is Google Chrome. ImmTrac2 does not support Windows 10 Edge. Users may experience issues using ImmTrac2 with Edge on drop-down menus or radio button selection and other functions.

Figure 1: Google Chrome Browser

Getting Started with the Ad Hoc List Report

- Log into the appropriate organization in ImmTrac2. On the left side of the screen, on the menu panel look for “Reports” and click on “generate report”. See Figure 2: Generate Report.

Figure 2: Generate Report

- In the list of reports available, click on “Ad Hoc List Report”. See Figure 3: Ad Hoc List Report.

Figure 3: Ad Hoc List Report.

4

Section 1: Choose Active Clients, Inactive Clients, or Both

The first choice to make is if you want to list active clients or inactive clients (see Figure 4: Select Active or Inactive Clients. To create a list of active clients, click on "Active" and then click the "Add" button, or double-click the "Active" link. The word Active will be moved from the left box to the right box. In this example, do not click on any of the inactive statuses because you want to create a list of active clients.

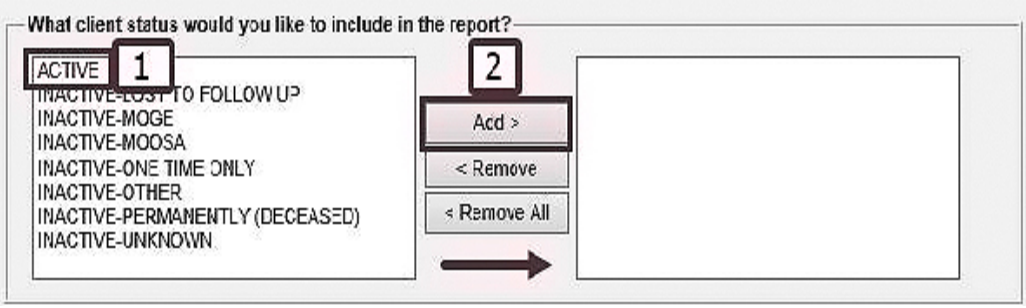

Figure 4: Select Active or Inactive Clients

Note that clients can be active in more than one organization. An example would be if a client in Austin has difficulty getting a COVID-19 immunization but drives to Round Rock or San Antonio and receives the immunization. In that case, the client would still be active in the original organization in Austin, but would also be active in the organization that administered the COVID-19 immunization and entered it into ImmTrac2.

When you search for clients who are active in your organization, you will get clients you gave immunizations to, including clients you normally do not see.

Likewise, if some of your clients went to another organization and received an immunization, the immunizations given by other organizations will be listed on the immunizations that your client received, even though they were not administered by you.

If you look in the client's record and see an immunization that has a "No" in the Owned column for that immunization, then another organization administered that immunization (see Figure 5: Not Owned By Your Organization). You can see which organization administered the immunization by clicking on the word "No".

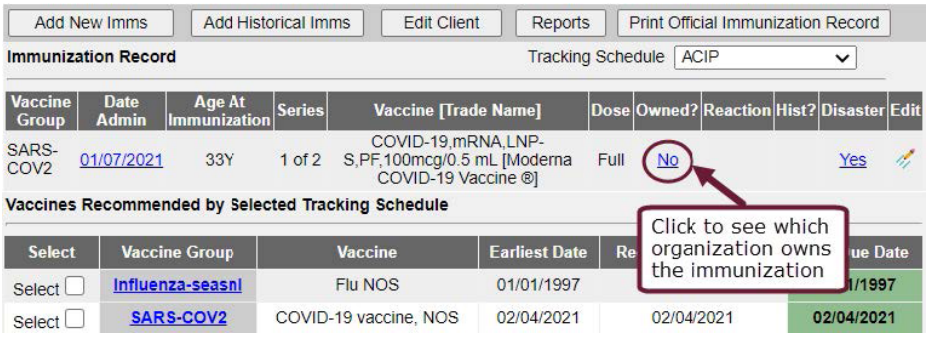

Figure 5: Not owned by your organization

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Section 2: What Items Do You Want to Display?

The second choice to make is which items you want to display on the client listing. See Figure 6: Items to be Displayed on the Report. The window on the left side lists items you can select to be displayed on the report, and the window on the right-side lists items that you have selected to be displayed.

To select an item to display, either double-click on an item in the left window, or click once on the item and then click the “Add” button. After an item has been selected it will be moved to the window on the right.

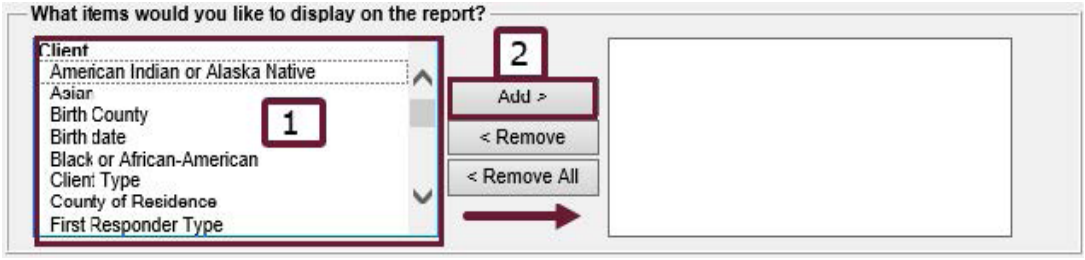

Figure 6: Items to be Displayed on the Report

Some items you might want to display would be First name, Last name, Birth date, Gender, Trade name, Vaccination date, Vaccine. See Figure 7: Example of Selected Items.

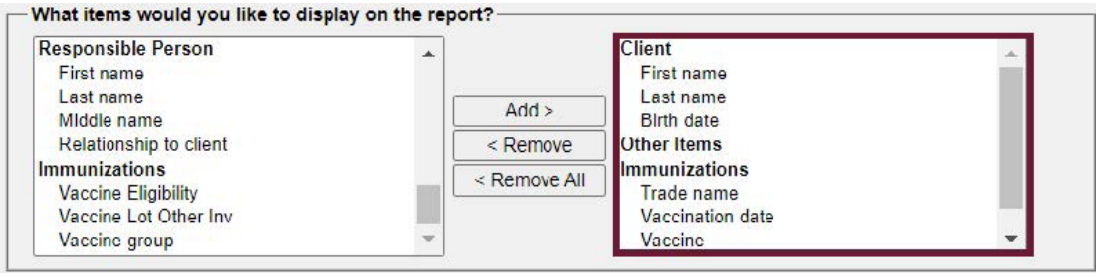

Figure 7: Example of Selected Items

To reverse the selection, either double-click on the item in the right window, or click once on the item and then click the “Remove” button. Clicking “Remove All” will remove all selections and allow you to start over. See Figure 8: Removing Items to be Displayed.

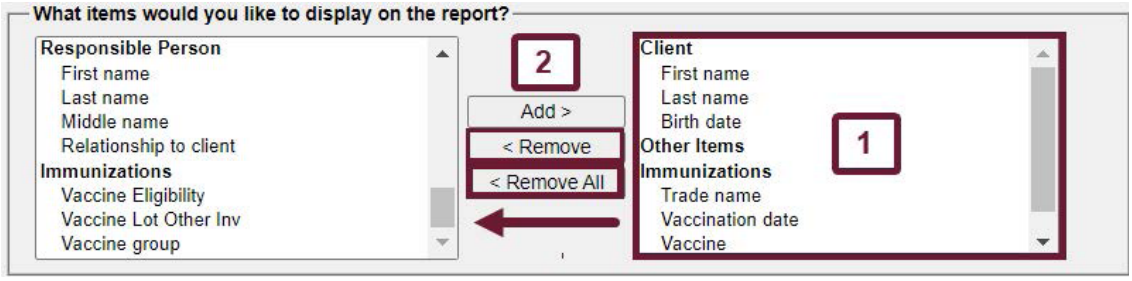

Figure 8: Removing Items to be Displayed

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Section 3: “How would you like the report to be sorted?”

In the third section, choose which item you want the report to be sorted on, and if you want the sort order to be “First-to-Last” or “Last-to-First”. See Figure 9: Choosing How to Sort.

Figure 9: Choosing How to Sort

Note that the list of items to sort on will be the same list that you chose to display in the prior step. In other words, you can’t sort on an item that you didn’t already choose to display.

Section 4: "How would you like to filter the data?"

You don't have to enter anything in the third section if you do not want to filter the data you have already chosen. Here's how you build a filter (see Figure 10: Building a Filter):

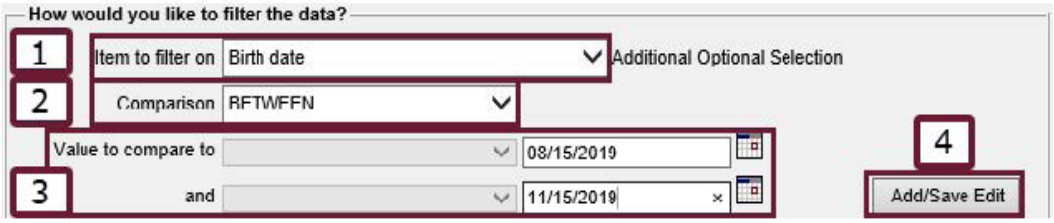


Figure 10: Building a Filter

- Step 1: Choose an item to filter on from the drop-down list. In this example "Birth date" was chosen.
- Step 2: Choose a comparison. The options you have for comparisons depend on the item you chose in step 1. In this example, the comparison options are "before", "Equals", "Not equal to", "After", Between", "Is", and "Is Not".
- Step 3: Select values. In this example, the data is set to select clients whose birthday lies between 8/15/2019 and 11/15/2019.
- Step 4: Click the "Add/Save Edit" button to add this edit to the filter. See Figure 10: Generating the Report for the next steps:

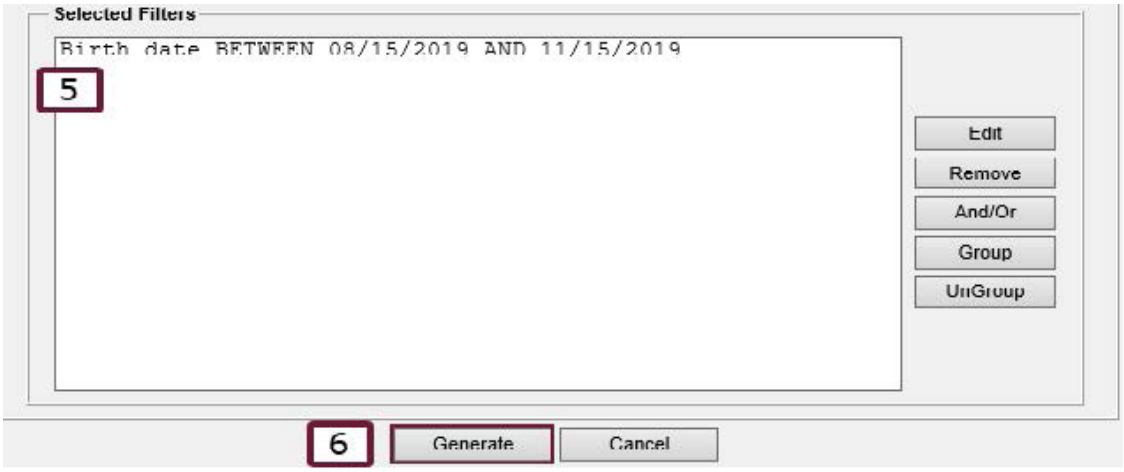


Figure 11: Generating the Report

- Step 5: Note that the filters previously selected have been added to the "Selected Filters" box.
- Step 6: You can click the "Generate" button to generate the report, or you can continue to build more complex filters (see the section on Building Complex Filters later).

10

After you click the generate button, the Ad Hoc Report Status screen appears and will display "PROCESSING" in the status column. As the report generates it will display the status as a percentage. Click the "Refresh" button to get updates. See Figure 12: Refresh Button.

Figure 12: Refresh Button

Once the report has generated the status will change to "DONE" and can be accessed by clicking the "LIST" link to see the report. See Figure 13: The LIST Link to the Report.

Figure 13: The LIST Link to the Report

Please note that only one Ad Hoc List Report can be generated at a time. If the report is still being processed and you need to do other work in ImmTrac2, as long as you stay logged in to that organization you can go back to the generated reports and click the "Status" link of the Ad Hoc List Report to take you back to the Ad Hoc Report Status screen and see if the report is done.
See Figure 14: Status Link to the Report.

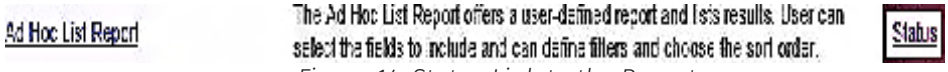


Figure 14: Status Link to the Report

Section 5: Building Complex Filters

You can combine edits to create more complex filters. For example, if you want to restrict the data to clients who were born between 01/01/1970 and 01/01/2000, you could additionally filter on a group of vaccines and again click the “Add/Save Edit” button to add that to the selection criteria. See Figure 15: Filter with a Group of Edits.

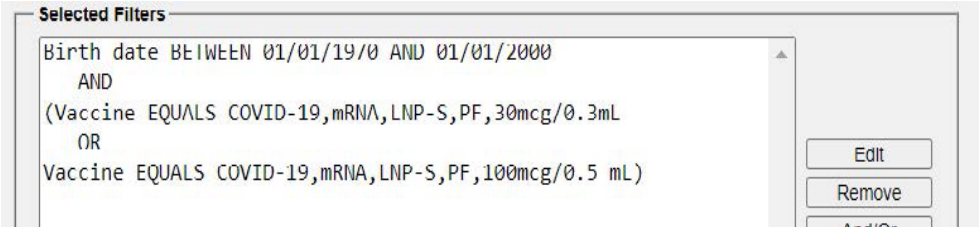


Figure 15: Filter with a Group of Edits

5A. Edit Button

To change an edit line in the filter, click on the edit (in this case Birth date BETWEEN 01/01/1970 AND 01/01/2010) and then click the “Edit” button. You will be able to change that line. See Figure 16: Edit Button.

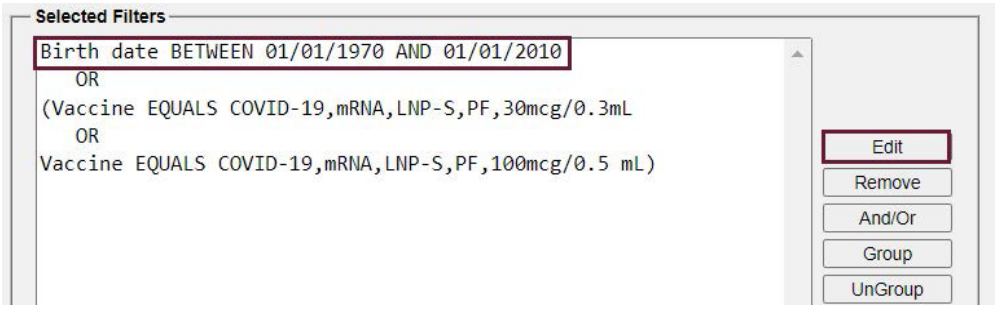


Figure 16: Edit Button.

5B. Remove Button

To remove an edit line from the filter (in this case Birth date BETWEEN 01/01/1970 AND 01/01/2010), click on the line and then click the “Remove” button. See Figure 17: Remove Button.

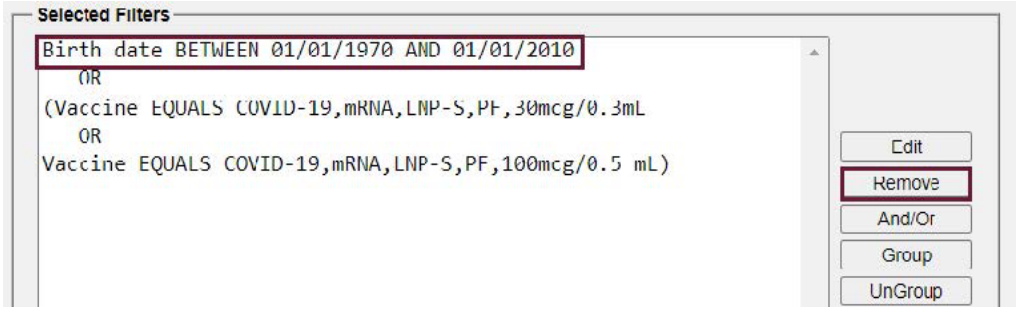
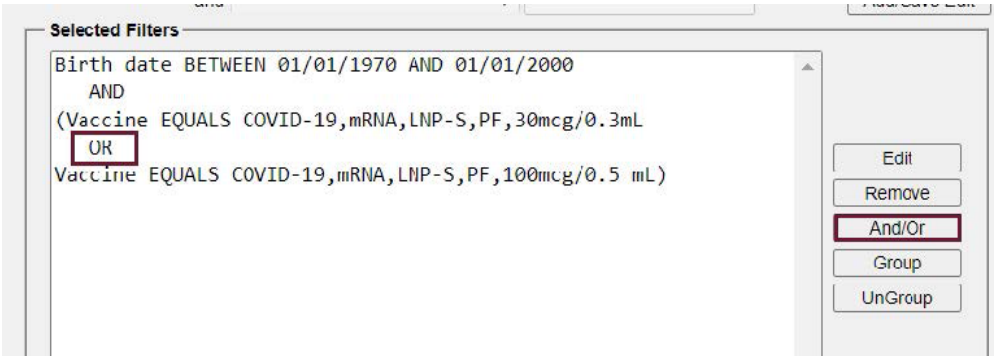


Figure 17: Remove Button

5C. And/Or Button

If you have multiple lines and want to switch an "AND" to an "OR" or vice versa, click the "AND" or "OR" and then click the "And/Or" button. The button will toggle between "AND" and "OR". See Figure 18: And/Or Button.



See Figure 18: And/Or Button

5D. Group Button

If you wish to group edits, such as this example that groups COVID-19 vaccines, after the edits have been entered, select the edit lines that you wish to group and then click the "Group" button. See Figure 19: Group Button. The group will be enclosed by parentheses.

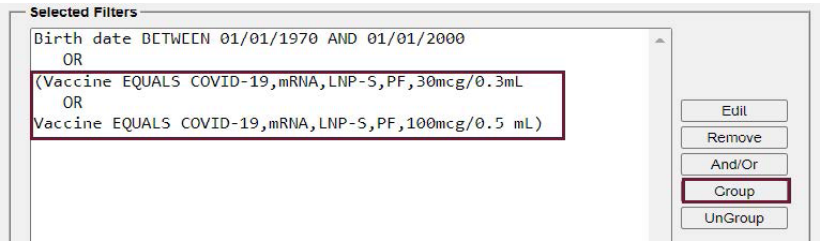


Figure 19: Group Button

5E. Ungroup Button

The ungroup button functions as the opposite of the Group button. Select a set of edit lines that you have grouped and wish to no longer group, then select the ungroup button. See Figure 20: Ungroup Button. The parentheses surrounding the group will be removed.

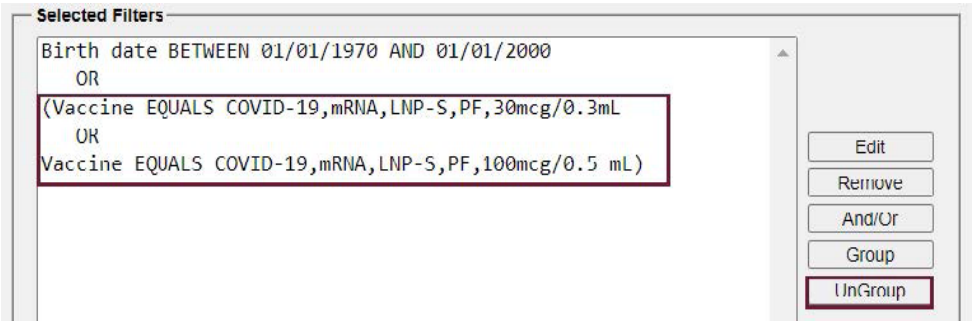


Figure 20: Ungroup Button

Section 6: How Clients Become Active

You might ask, "What makes a client active in an organization?" The status of a client will change from Inactive status to Active status if an organization:

- Creates a new client record
- Adds an historical immunization to a client
- Adds a new immunization to a client
- Manually edits the Status field in the Organization Information tab of a client record to change it from inactive status (see Figure 21 – Inactive Status) to active status (see Figure 22 – Active Status), or

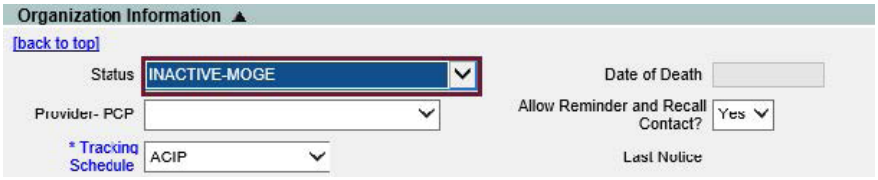


Figure 21 - Inactive Status

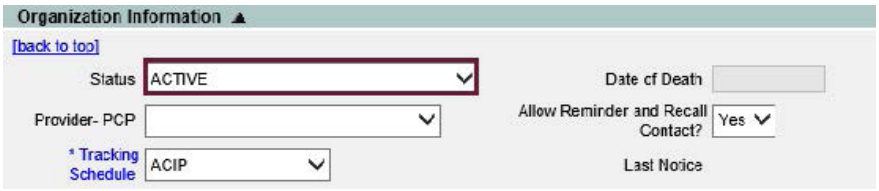


Figure 22: Active Status

- Uses the "manage client status criteria" feature in ImmTrac2 to change client status to or from active or inactive (see Figure 23 – Manage Client Status Criteria).

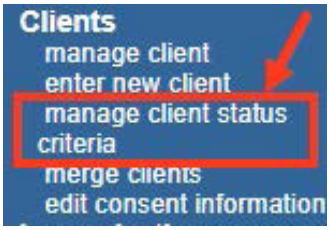


Figure 23 - Manage Client Status Criteria

For further information on how to use this feature, see "11-15951 ImmTrac2 Manage Client Status Criteria" available on the materials page www.dshs.texas.gov/immunizations/providers/materials.

Section 7: How to Inactivate Clients

If you have clients that you have not seen in what you consider to be a long time and wish to make them inactive, you can do that by either:

- Manually editing the Status field in the Organization Information tab of a client record to change it from inactive status (see Figure 24 – Inactive Status) to active status (see Figure 25 – Active Status), or

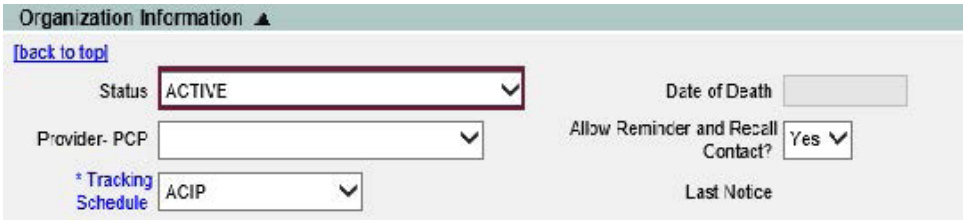


Figure 24: Active Status

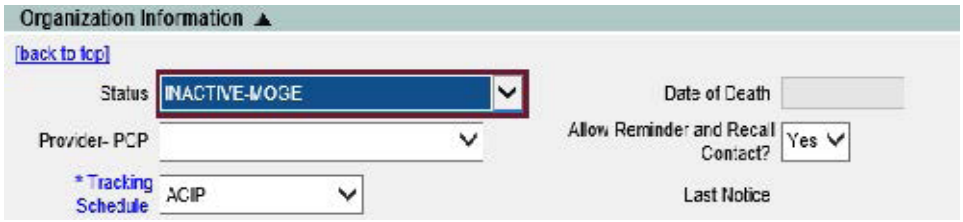


Figure 25 - Inactive Status

- Using the "manage client status criteria" feature in ImmTrac2 to change client status to or from active or inactive (see Figure 26 – Manage Client Status Criteria). For further information on how to use this feature, go to the Forms and Documents webpage and look for publication "11-15951 ImmTrac2 Manage Client Status Criteria".

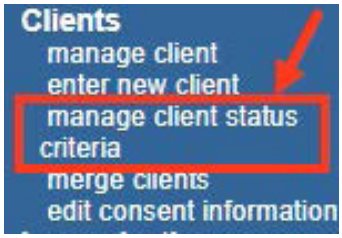


Figure 26 - Manage Client Status Criteria

Clients can also be flagged as 'Inactive' through data exchange. For additional information please contact your Electronic Health Records (EHR) vendor or the ImmTrac2 Interoperability Team toll free at 800-348-9158 or email ImmTrac2@dshs.texas.gov.

Section 9
ImmTrac2 Manage Client Status Criteria Guide

Contents

Introduction

To use the Manage Client Status feature, select the “manage client status criteria”link in the menu bar on the left side of the screen (see Figure 1 – Link to Manage Client Status Criteria).

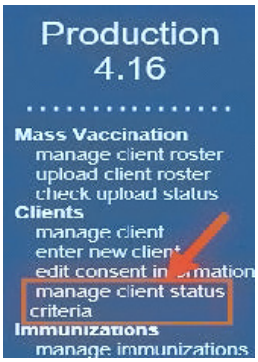


Figure 1 - Link to Manage Client Status Criteria

With the Manage Client Status Criteria feature, providers can retrieve a group of clients based on specific search criteria and perform bulk changes to the client status without having to go into each client record individually through the ImmTrac2 Manage Client screen. Exception: Clients with a status of “Deceased” will be updated individually through the “Manage Client” screen.

For example, providers who had clients that had moved away but were still listed as their clients now have an efficient way to change clients’ status in their organization from “active” to “inactive”. See Figure 2 – Manage Client Status Criteria.

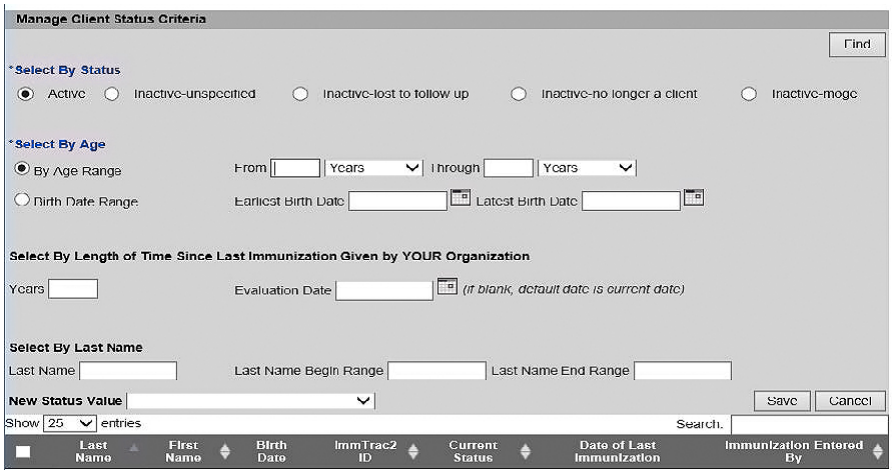


Figure 2 - Manage Client Status Criteria

The four areas of the Manage Client Status Criteria are (see Figure 3: The Filters and Display Table below):

- **Required Filters** These filters by status and range of ages or birth dates must be used.
- **Optional Filters** These filters are not required and include selecting clients by the number of years since a specified date.

- **Optional Real-Time Search Filter** This filter works with the Display/Change Status Table below it. Any set of characters that you enter in the “Search” field will be used to search each row in the table below and if it finds a match, the client on that row is included in the selection.
- **Display/Change Status Table** This table lists the clients that have met all the criteria you enter in the filters above. Only clients that met the requirements of the Required Filters AND the Optional Filters and the Option Real-Time Filter will be displayed I the Display/Change Status table. By selecting clients listed in the table and using the New Status Value field and the Save button, the status of all selected clients can be changed.

Clients with the Allow Reminder and Recall Contact flag set to “No” will be excluded from the search results.

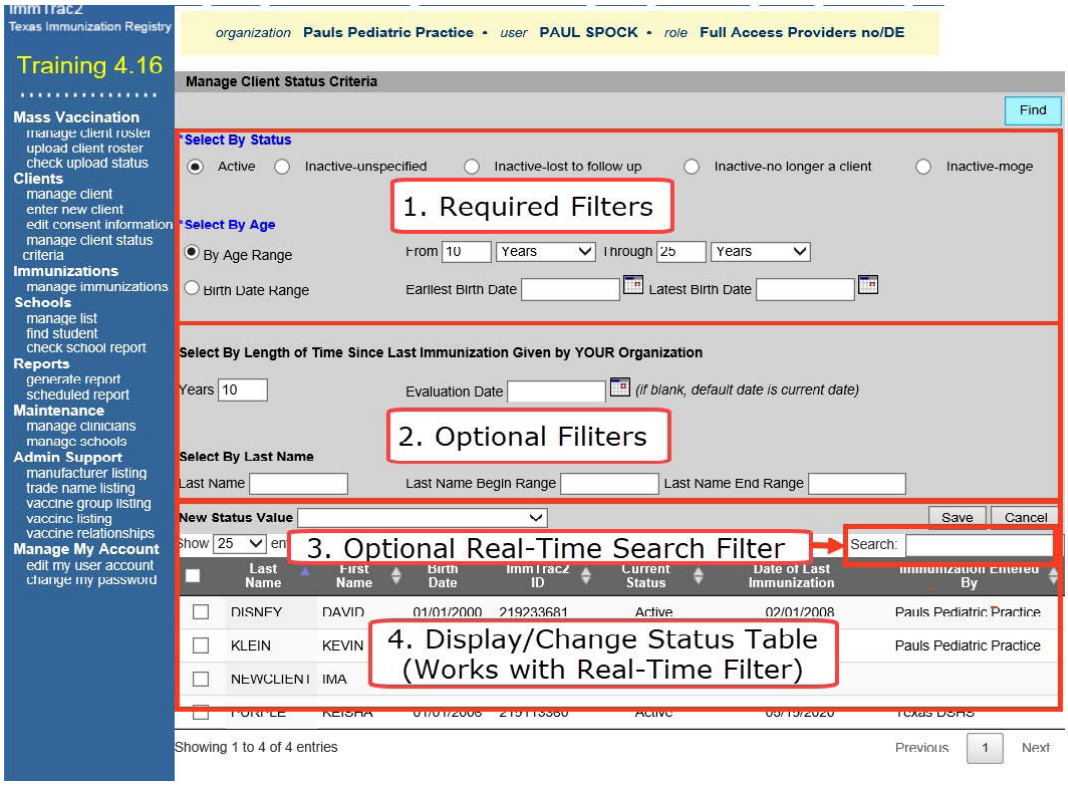


Figure 3 - The Filters and Display Table

Required Filters

Select by Status

See Figure 4 – Select by Status.

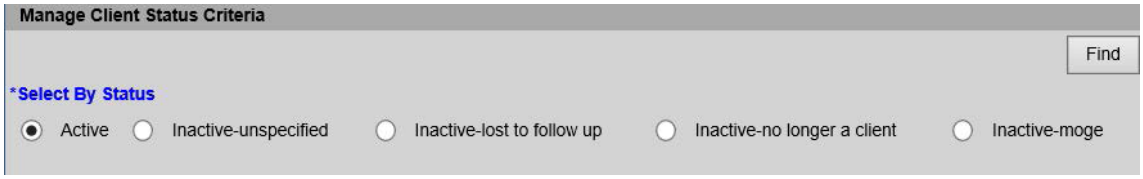


Figure 4 - Select by Status

Description of this filter - The status options below allow you to select clients that have one of the following statuses for your organization:

- Active
- Inactive – unspecified
- Inactive – lost to follow-up
- Inactive – no longer a client
- Inactive – moge (moved or gone elsewhere)

Select by Age

See Figure 5 – Select by Age.

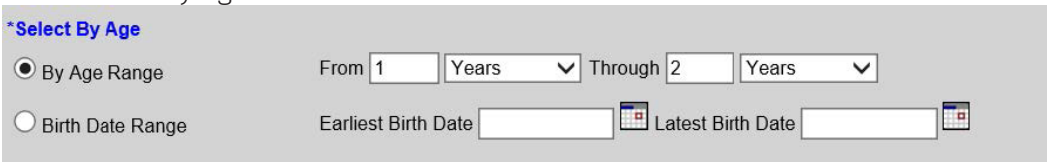


Figure 5 - Select by Age

Description of this filter:

- By Age Range – Select clients with an age range From (years or months) Through (years or months).
- Birth Date Range – Select clients with an Earliest Birth Date (mm/dd/yyyy format, or use the calendar) to Latest Birth Date (mm/dd/yyyy format, or use the calendar).

Optional Filters

Select by Length of Time Since Last Immunization Given by your Organization

This is an optional filter. See Figure 6 – Select by Length of Time Since Last Immunization.

Figure 6 - Select by Length of Time Since Last Immunization

Description of this filter:

- Evaluation Date is in mm/dd/yyyy format or use the calendar.
- If you do not enter anything in the "Years" field but enter an evaluation date, an error message will popup: "You must enter the number of years if the Evaluation Date is entered" (see Figure 7 – Error Message for Evaluation Date but No Years).

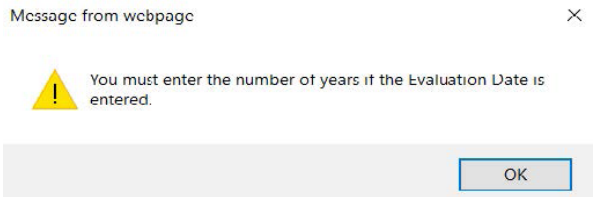


Figure 7 – Error Message for Evaluation Date but No Years

- If you do not enter anything in the Evaluation Date field, the current date is the default date.
- If you enter the number of "Years", and either enter an Evaluation Date or take the current date as the default, and then click "Find", clients who had immunizations administered by your organization between the Evaluation Date and going back for the number of years specified will not be displayed.

Select by Last Name

Select by last name is an optional filter. See Figure 8 - Select by Last Name

Figure 8 - Select by Last Name

Description of this filter:

- If the Last Name is entered, at least the first two letters of the last name are required.
- If the Last Name Begin Range is entered, the first 2 characters of the last name are required, and you must also enter at least 2 characters in the Last Name End Range.
- If the Last Name End Range is entered, the first 2 characters of the last name are required, and you must enter at least 2 characters in the Last Name Begin Range.
- Last name has priority over the Last Name Begin Range and Last Name End
- Range. If anything is entered into the Last Name field, it will ignore anything entered in the Last Name Begin Range and Last Name End Range fields. It will use the Last Name field instead of the range fields.
- If nothing is entered into the Last Name field and data is entered in the Last Name Begin Range and Last Name End Range fields, it will search using the range data.

Optional Real-Time Search Filter

The optional real-time search filter is used in conjunction with the Display/Change table listed below it. This filter acts differently than the other filters in that you don't have to select the "Find" button in the upper right corner of the screen to make a change in clients displayed. Instead, any characters (numbers or letters) that you enter in the search field are used to search through each and every field in the display table to find a match. If a match is found on any row in the table, then the client on that row is included in the display table; otherwise the client is no longer displayed. See Figure 9 – Real-Time Search Filter Match.

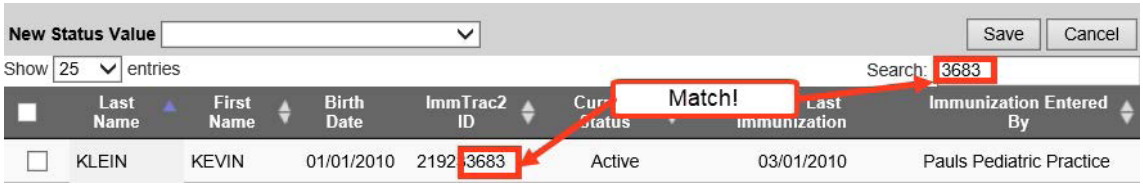


Figure 9 – Real-Time Search Filter Match.

Display/Change Status Table

The Display/Change Status table lists all the clients of your organization and their current status in relation to your organization. The table lists all clients related to your organization that match all the selection criteria listed in the required and optional filters.

Important Note: The "Date of Last Immunization" column in the table lists the date of the last immunization given by any organization. To the right of that field is the column "Immunization Entered By" that lists which organization gave the last immunization that the client received. If a different organization from yours gave the last immunization that the client received, that has no effect on the filter "Select by length of time from last immunization given by YOUR organization". See Figure 10 – Date of Last Immunization.

	Last Name	First Name	Birth Date	ImmTrac2 ID	Current Status	Date of Last Immunization	Immunization Entered By
☐	BADGER	BILLY	01/01/1990	219234341	Active		
☐	DISNEY	DAVID	01/01/2000	219233681	Active	01/01/2016	Texas DSHS
☐	JONES	JESSICA	01/01/2000	219233682	Active	08/01/2012	Pauls Pediatric Practice
☐	KLEIN	KEVIN	01/01/2010	219233683	Active	03/01/2010	Pauls Pediatric Practice

Figure 10 - Date of Last Immunization

You can change the status of one or more clients in the table by

- Clicking on the selection box on the left-most column of any rows, or
- Clicking the left-most box in the heading to select all rows (clients).

Next, select the arrow on the drop-down box in the "New Status Value" field to list possible new statuses for the clients you have selected. See Figure 11– Drop-Down Box of New Status Value.

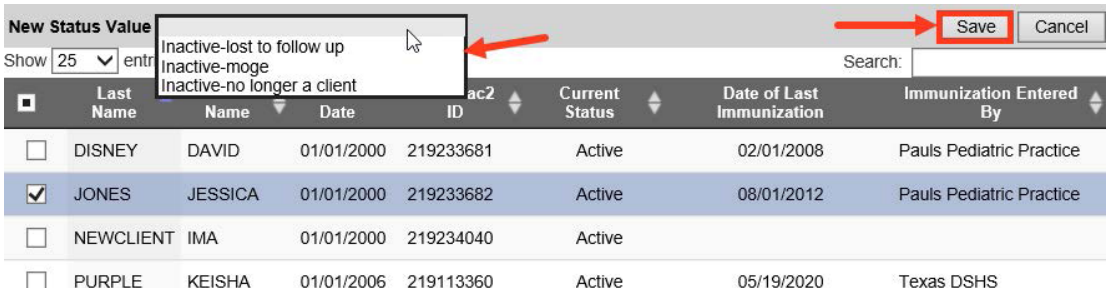


Figure 11 - Drop-Down Box of New Status Value

Select the new status for the select clients. In the above figure, Jessica Jones was selected. Then click the save button to save the new status for the selected client(s).

If you wish to select all the clients in the table to make a change in their status, click the box on the far left in the column header (see Figure 12 – Select All Rows).

☑	Last Name	First Name	Birth Date	ImmTrac2 ID	Current Status	Date of Last Immunization	Immunization Entered By
☑	BADGER	BILLY	01/01/1990	219234341	Active		
☑	DISNEY	DAVID	01/01/2000	219233681	Active	01/01/2016	Texas DSHS
☑	JONES	JESSICA	01/01/2000	219233682	Active	08/01/2012	Pauls Pediatric Practice
☑	KLEIN	KEVIN	01/01/2010	219233683	Active	03/01/2010	Pauls Pediatric Practice
☑	NEWCLIENT	IMA	01/01/2000	219234040	Active		
☑	PURPLE	KEISHA	01/01/2006	219113360	Active	05/19/2020	Texas DSHS
☑	PURPLE	KEISHA	01/01/2019	219115360	Active		
☑	SMITH	BRANDY	01/01/2010	219233460	Active	07/30/2020	Pauls Pediatric Practice

Figure 12 - Select All Rows

Section 10
Additional Resources for Providers

Resource Name	Resource Link	Resource Description
General Immunization Resources		
Child and Adolescent Immunization Schedules **Source:** Centers for Disease Control and Prevention **Audience:** Providers **Last Updated:** 02/2023	https://www.cdc.gov/vaccines/schedules/index.html	Recommended vaccination schedule for ages 18 years or younger
Talking to Parents about Vaccines **Source:** Centers for Disease Control and Prevention **Audience:** Providers **Last Updated:** 07/2020	https://www.cdc.gov/vaccines/programs/iqip/talking-to-parents.html	Check out materials to assist providers in starting conversations about vaccines with parents.
Strengthen Vaccination Communication		
American Academy of Pediatrics (AAP) **Source:** AAP **Audience:** Providers **Last Updated:** 06/2021	https://www.aap.org/en/news-room/campaigns-and-toolkits/call-your-pediatrician/	Using humor and real world conversations, the #CallYourPediatrician campaign aims to reach parents with timely reminders that going to the pediatrician is important and safe.
#HowIRecommend **Source:** Centers for Disease Control and Prevention (CDC) **Audience:** Providers **Last Updated:** 11/2021	https://www.cdc.gov/vaccines/howirecommend/index.html	The #HowIRecommend video series highlights clinicians, who explain how they are achieve high vaccination rates and effectively addressing vaccination questions. These short videos cover a range of topics including: making effective recommendations to increase vaccination rates, helping parents understand why vaccination is important, addressing parents' questions about vaccine safety and involving everyone in vaccination efforts.

Resource Name	Resource Link	Resource Description
5 Ways to Boost Your HPV Vaccinations Rates **Source:** Centers for Disease Control and Prevention (CDC) **Audience:** Providers **Last Updated:** 11/2021	https://www.cdc.gov/hpv/hcp/boosting-vacc-rates.html	Practical and proven strategies that could increase HPV vaccination rates. Strategies include: Bundling recommendation, ensuring consistent messages, using every opportunity to vaccinate, providing personal examples, and effectively answering questions.
Foster Support for Vaccination in Your Practice **Source:** Centers for Disease Control and Prevention (CDC) **Audience:** Providers **Last Updated:** 11/202	https://www.cdc.gov/vaccines/hcp/conversations/your-practice.html	Patients and parents can feel more confident about vaccinating when everyone in the practice shares the same message. From the front desk to the exam room to checkout, everyone plays an important role in supporting vaccination. Adopt these best practices to ensure you never miss an opportunity to vaccinate.
HPV Vaccination Resources for Health Professionals **Source:** American Cancer Society (ACS) **Audience:** Providers **Last Updated:** 01/2022	https://www.cancer.org/health-care-professionals/hpv-vaccination-information-for-health-professionals/hpv-vaccination-resources-for-health-professionals.html	Resources for health professionals that include: patient education material; provider education and tools; and link to HPV Roundtable Resources Library.
National Immunization Awareness Month (NIAM) **Source:** National Immunization Awareness Month (NIAM) **Audience:** Awardees and Providers **Last Updated:** 07/2022	www.cdc.gov/vaccines/NIAM	Toolkit for communicating with Healthcare Professionals: key messages, sample social media content, and educational resources for healthcare professionals. Use the resources to assist in communicating to healthcare professionals, parents, and patients about immunization.

Resource Name	Resource Link	Resource Description
Preteen and Teen Immunization Resources **Source:** Centers for Disease Control and Prevention (CDC) **Audience:** Providers **Last Updated:** 03/2017	https://www.cdc.gov/vaccines/partners/teens/index.html	Resources that promote preteens and teens immunization and stress the importance and benefits of vaccines. Resources include: HPV Vaccination Partner Toolkit; preteens and teens related fact sheets, flyers, and posters; preteen and teen related podcasts, PSAs and videos.
Provider Resources for Vaccines Conversations with Parents **Source:** Centers for Disease Control and Prevention (CDC) **Audience:** Providers **Last Updated:** 08/2021	https://www.cdc.gov/vaccines/hcp/conversations/index.html	These materials can help assist the provider in communicating with parents to best meet their needs and concerns about vaccines.
Resources to Encourage Routine Childhood Vaccinations **Source:** Centers for Disease Control and Prevention (CDC) **Audience:** Providers **Last Updated:** 05/2022	https://www.cdc.gov/vaccines/partners/childhood/stayingontrack.html	CDC's call to action outlined the steps that healthcare providers and families can take to encourage catch up vaccination and protect children's health. Resources include: Catch up on Well Child Visits and Recommended Vaccinations; Resources for Health Care Professionals; Social Media Content; Infographic; Newsletter template
Talking with Parents about Vaccines for Infants **Source:** Centers for Disease Control and Prevention (CDC) **Audience:** Providers **Last Updated:** 04/2018	https://www.cdc.gov/vaccines/hcp/conversations/talking-with-parents.html	Information for health care professionals. Resource discusses points to consider when speaking with parents about vaccines for infants.

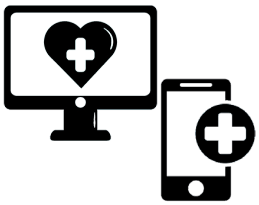
Resource Name	Resource Link	Resource Description
Vaccine Hesitancy: Resources and Information **Source:** Immunize **Audience:** Providers **Last Updated:** 09/2021	https://www.immunize.org/talking-about-vaccines/multiple-injections.asp	This site offers several resources to assist providers with communicating the safety, effectiveness and recommendations to parents about vaccines. Flyers, brochures and link to additional resources include: National Academy of Medicine, American Academy of Pediatrics (AAP), Vaccine Education Center (VEC), Children's Hospital of Philadelphia, Centers for Disease Control and Prevention (CDC), and Immunization Action Coalition (IAC).
Talking with Vaccine Hesitant Parents **Source:** American Academy of Pediatrics (AAP) **Audience:** Providers **Last Updated:** 07/2021	https://www.aap.org/en/patient-care/immunizations/communicating-with-families-and-promoting-vaccine-confidence/talking-with-vaccine-hesitant-parents/	Nearly all pediatricians encounter parents who want to do what is best for their child – even though it may mean they have questions about vaccines. This resource includes information about key points to consider; strategies for talking to parents; examples; and policies.
Give a Strong Vaccine Recommendation		
"How I Recommend" videos for clinicians **Source:** Centers for Disease Control and Prevention **Audience:** Providers **Last Updated:** 11/2021	https://www.cdc.gov/vaccines/howirecommend/	The #HowIRecommend video series highlights clinicians like you, who explain how they are achieving high vaccination rates and effectively addressing vaccination questions in their practices. These short, informative videos cover a range of topics related to HPV, flu, and other pediatric vaccinations, including making effective recommendations to increase vaccination rates, helping parents understand why vaccination is important for their child, and addressing parents' questions about vaccine safety.

Resource Name	Resource Link	Resource Description
5 Ways to Boost Your HPV Vaccination Rates **Source:** Centers for Disease Control and Prevention **Audience:** Providers **Last Updated:** 11/2021	https://www.cdc.gov/hpv/hcp/boosting-vacc-rates.html	Implement these practical and proven strategies and increase HPV vaccination rates. Strategies include Bundling recommendation, ensuring consistent messages, using every opportunity to vaccinate, providing personal examples, and effectively answering questions.
Materials for Your Office - HPV **Source:** Centers for Disease Control and Prevention **Audience:** Providers **Last Updated:** 11/2021	https://www.cdc.gov/hpv/hcp/educational-materials.html#office	Using CDC's educational resources is a great way to help educate yourself and your office staff on the latest information and guidance on HPV vaccination, best practices for communicating with parents, and tips for boosting your vaccination rates. Sharing these resources with office staff also helps ensure a consistent message to parents about the importance of HPV vaccination.
Coadministration – Flu **Source:** Immunization Action Coalition **Audience:** Providers **Last Updated:** 11/2023	https://www.immunize.org/askexperts/experts_inf.asp	Clinical considerations for co-administering flu and COVID-19 and other childhood vaccines.
Make a Strong Influenza Vaccine Recommendation **Source:** Centers for Disease Control and Prevention **Audience:** Providers **Last Updated:** 08/2023	https://www.cdc.gov/flu/professionals/vaccination/flu-vaccine-recommendation.htm	A health care professional's strong recommendation is a critical factor that affects whether patients get an influenza vaccine. Most adults believe vaccines are important, but they need a reminder to get vaccinated. Follow up with each patient during subsequent appointments to ensure the patient received an influenza vaccine.
Communication Aids **Source:** American Academy of Pediatrics (AAP) **Audience:** Providers **Last Updated:** 07/2023	https://www.aap.org/en/patient-care/immunizations/communication-aids/	Communication aids to guide and improve vaccine conversations with several resources and tools to help address immunization issues for children of all ages.

Resource Name	Resource Link	Resource Description
Need Help Responding to Vaccine-Hesitant Parents? **Source:** Immunize **Last Updated:** 07/2023	https://www.immunize.org/wp-content/uploads/catg.d/p2070.pdf	One-pager outlining sources for science-based materials are available from these respected organizations.
Communicating with Families and Promoting Vaccine Confidence **Source:** American Academy of Pediatrics (AAP) **Audience:** Providers **Last Updated:** 12/2023	https://www.aap.org/en/patient-care/immunizations/communicating-with-families-and-promoting-vaccine-confidence/	Resources include AAP Immunization Campaign Toolkit; Communicating Effectively About Immunizations; Responding to Common Parental Concerns; Vaccine Hesitant Parents: Learn more about the types of parental attitudes toward immunizations and simple strategies for speaking to parents about vaccines.
Vaccine Confidence and Addressing Concerns **Source:** Immunize.org **Audience:** Providers **Last Updated:** 11/2023	https://www.immunize.org/clinical/vaccine-confidence/	This site offers several resources to assist providers with communicating with parents about vaccines during the early years. Includes links to several sites; including AAP, CDC, VEC, and CHOP
Resources to Encourage Routine Childhood Vaccinations **Source:** Centers for Disease Control and Prevention (CDC) **Audience:** Providers **Last Updated:** 03/2023	https://www.cdc.gov/vaccines/partners/childhood/stayingontrack.html	Resources include Catch up on Well Child Visits and Recommended Vaccinations; Resources for Health Care Professionals; Social Media Content; Infographic; Newsletter template
Tools to Improve HPV Vaccination in Primary Care **Source:** HPV Immunization Quality Improvement Tools (HPV IQ) **Audience:** Providers **Last Updated:** 2024	hpviq.org	Communication training material on talking with parents about vaccinations.

Resource Name	Resource Link	Resource Description
Vaccinations Are Safe: Explaining Why **Source:** Immunize.org **Audience:** Providers **Last Updated:** 11/2022	https://www.immunize.org/wp-content/uploads/catg.d/p2073.pdf	Eight page document containing information about the science of vaccines, supporting safety and efficacy.
Human Papillomavirus and Other Vaccines Recommended for Adolescents **Source:** American Academy of Pediatrics (AAP) **Audience:** Providers **Last Updated:** 10/2022	https://www.aap.org/en/patient-care/immunizations/human-papillomavirus-vaccines/	Resources include links to: EQIPP: Immunizations - Strategies for Success; PediaLink: HPV Vaccine: When, Why, and How and Why AAP Recommends Initiating HPV Vaccine as Early As Age 9; HPV Vaccine: Same Way Same Day; and other printable resources on HPV
Answering Parents Questions about HPV Vaccination **Source:** Centers for Disease Control and Prevention (CDC) **Audience:** Providers **Last Updated:** 11/2021	https://www.cdc.gov/hpv/hcp/answering-questions.html	Communication resources for providers on how to effectively recommend the vaccine and address parents questions.
HPV Educational Materials for Clinicians **Source:** Centers for Disease Control and Prevention (CDC) **Audience:** Providers **Last Updated:** 11/2021	https://www.cdc.gov/hpv/hcp/educational-materials.html#office	Using CDC's educational resources is a great way to help educate yourself and your office staff on the latest information and guidance on HPV vaccination, best practices for communicating with parents, and tips for boosting your vaccination rates. Sharing these resources with office staff also helps ensure a consistent message to parents about the importance of HPV vaccination.

Best Practices for Scheduling Immunization Appointments



✓LET PATIENTS BOOK ONLINE, IN-PERSON OR OVER THE PHONE

The ability to book appointments using multiple methods allows efficiency and flexibility for your patients.

✓OFFER MULTIPLE TIME-SLOT OPTIONS TO PATIENTS

Give patients as many options as possible to choose the best time slot for their schedule. This will reduce the chance of cancelations due to time conflicts.

✓RECORD PATIENT'S CONTACT INFORMATION

Update/confirm patient's phone number, email, and mailing address at each visit. You'll need to be able to contact them for an upcoming appointment or to reschedule their next appointment.

✓SEND PATIENT REMINDERS BEFORE APPOINTMENTS

Using different methods of appointment reminders reduces the risk of patients missing or canceling appointments.

✓DESIGNATE AN APPOINTMENT SCHEDULER FOR YOUR OFFICE

Designate an individual(s) to manage appointment scheduling and provide them with training on childhood/adolescent immunization schedules.

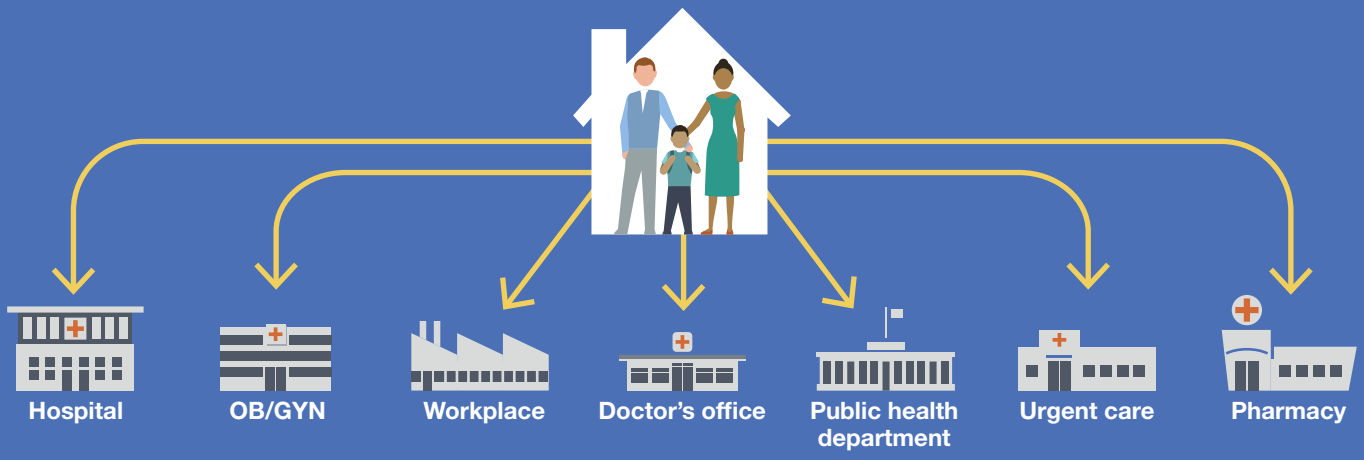
TEXAS Health and Human Services | Texas Department of State Health Services

Texas Department of State Health Services
Immunization Section

Stock No. 11-15747
Rev. 05/2024

Basics of Immunization Information Systems (IISs)

People receive vaccinations from a variety of places



These sources send vaccination records to state or city IIS

IISs provide records to patients and authorized professionals

Parents and general public use the information to enroll children in schools and day care and to determine if they need vaccinations.

Doctors and health care providers use IISs to determine which vaccinations are needed and to care for patients.

Public health uses the information to develop programs that increase vaccination coverage and decrease the harm caused by vaccine-preventable diseases.

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Centers for Disease Control and Prevention

EHR and IIS

Their Differences and How They Work Together

Only captures patient health information within the same medical organization

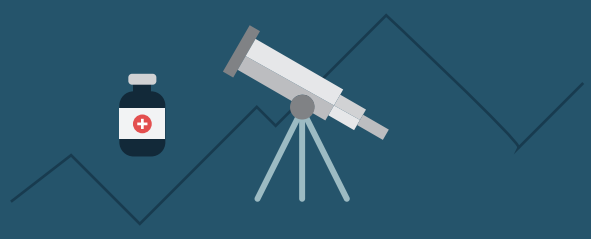
Captures immunization information for a broad population

Replaces written health records of medical encounters

Consolidates immunization records by reaching across heath care providers and networks

Supports provider decisions about a patient's care

Provides clinical decision support and vaccine forecasting



Automates and streamlines provider workflow

Identifies areas of need, where lower immunization rates exist

Can communicate bidirectionally with IIS

Can communicate bidirectionally with other IIS and EHRs

Better Together

Connectivity
IIS connect providers with a patient's full immunization history, regardless of prior networks or providers visited. When IIS are integrated into the EHR, access to this information becomes seamless. This connectivity eliminates the burden of retrieving and compiling fragmented information from past providers and pharmacies.

Visibility
Connecting providers to broader population data allows them visibility into the history and needs of the population they serve, ensuring the best outcomes in daily, clinical decision-making. Providers also gain visibility into future needs through immunization forecasting, helping organizations more strategically plan and communicate with patients through timely vaccination reminders.

Collaboration
When IIS and EHR systems share data, patient immunization records become as complete and accurate as possible. A consolidated record that follows patients throughout their lifetime prevents the patient from receiving too many or too few vaccines in the future.

Learn more about the unique capabilities of IIS and EHR at immregistries.org.

AIRA
AMERICAN IMMUNIZATION REGISTRY ASSOCIATION

Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger

UNITED STATES 2024

Vaccines and Other Immunizing Agents in the Child and Adolescent Immunization Schedule*

Monoclonal antibody	Abbreviation(s)	Trade name(s)
Respiratory syncytial virus monoclonal antibody (Nirsevimab)	**RSV-mAb**	Beyfortus™
Vaccine	**Abbreviation(s)**	**Trade name(s)**
COVID-19	**1vCOV-mRNA**	Comirnaty®/Pfizer-BioNTech COVID-19 Vaccine
		Spikevax®/Moderna COVID-19 Vaccine
	1vCOV-aPS	Novavax COVID-19 Vaccine
Dengue vaccine	**DEN4CYD**	Dengvaxia®
Diphtheria, tetanus, and acellular pertussis vaccine	**DTaP**	Daptacel® Infanrix®
Haemophilus influenzae type b vaccine	**Hib (PRP-T)**	ActHIB® Hiberix®
	Hib (PRP-OMP)	PedvaxHIB®
Hepatitis A vaccine	**HepA**	Havrix® Vaqta®
Hepatitis B vaccine	**HepB**	Engerix-B® Recombivax HB®
Human papillomavirus vaccine	**HPV**	Gardasil 9®
Influenza vaccine (inactivated)	**IIV4**	Multiple
Influenza vaccine (live, attenuated)	**LAIV4**	FluMist® Quadrivalent
Measles, mumps, and rubella vaccine	**MMR**	M-M-R II® Priorix®
Meningococcal serogroups A, C, W, Y vaccine	**MenACWY-CRM**	Menveo®
	MenACWY-TT	MenQuadfi®
Meningococcal serogroup B vaccine	**MenB-4C**	Bexsero®
	MenB-FHbp	Trumenba®
Meningococcal serogroup A, B, C, W, Y vaccine	**MenACWY-TT/ MenB-FHbp**	Penbraya™
Mpox vaccine	**Mpox**	Jynneos®
Pneumococcal conjugate vaccine	**PCV15** **PCV20**	Vaxneuvance™ Prevnar 20®
Pneumococcal polysaccharide vaccine	**PPSV23**	Pneumovax 23®
Poliovirus vaccine (inactivated)	**IPV**	Ipol®
Respiratory syncytial virus vaccine	**RSV**	Abrysvo™
Rotavirus vaccine	**RV1** **RV5**	Rotarix® RotaTeq®
Tetanus, diphtheria, and acellular pertussis vaccine	**Tdap**	Adacel® Boostrix®
Tetanus and diphtheria vaccine	**Td**	Tenivac® Tdvax™
Varicella vaccine	**VAR**	Varivax®
Combination vaccines *(use combination vaccines instead of separate injections when appropriate)*		
DTaP, hepatitis B, and inactivated poliovirus vaccine	**DTaP-HepB-IPV**	Pediarix®
DTaP, inactivated poliovirus, and *Haemophilus influenzae* type b vaccine	**DTaP-IPV/Hib**	Pentacel®
DTaP and inactivated poliovirus vaccine	**DTaP-IPV**	Kinrix® Quadracel®
DTaP, inactivated poliovirus, *Haemophilus influenzae* type b, and hepatitis B vaccine	**DTaP-IPV-Hib-HepB**	Vaxelis®
Measles, mumps, rubella, and varicella vaccine	**MMRV**	ProQuad®

*Administer recommended vaccines if immunization history is incomplete or unknown. Do not restart or add doses to vaccine series for extended intervals between doses. When a vaccine is not administered at the recommended age, administer at a subsequent visit. The use of trade names is for identification purposes only and does not imply endorsement by the ACIP or CDC.

11/16/2023

How to use the child and adolescent immunization schedule

1. Determine recommended vaccine by age **(Table 1)**
2. Determine recommended interval for catch-up vaccination **(Table 2)**
3. Assess need for additional recommended vaccines by medical condition or other indication **(Table 3)**
4. Review vaccine types, frequencies, intervals, and considerations for special situations **(Notes)**
5. Review contraindications and precautions for vaccine types **(Appendix)**
6. Review new or updated ACIP guidance **(Addendum)**

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

Report

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

Questions or comments

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

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

Helpful information

- Complete Advisory Committee on Immunization Practices (ACIP) recommendations: www.cdc.gov/vaccines/hcp/acip-recs/index.html
- ACIP Shared Clinical Decision-Making Recommendations: www.cdc.gov/vaccines/acip/acip-scdm-faqs.html
- *General Best Practice Guidelines for Immunization* (including contraindications and precautions): www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html
- Vaccine information statements: www.cdc.gov/vaccines/hcp/vis/index.html
- Manual for the Surveillance of Vaccine-Preventable Diseases (including case identification and outbreak response): www.cdc.gov/vaccines/pubs/surv-manual

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

Scan QR code for access to online schedule

CS310020-D

Table 1 Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, United States, 2024

These recommendations must be read with the notes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars.
To determine minimum intervals between doses, see the catch-up schedule (Table 2).

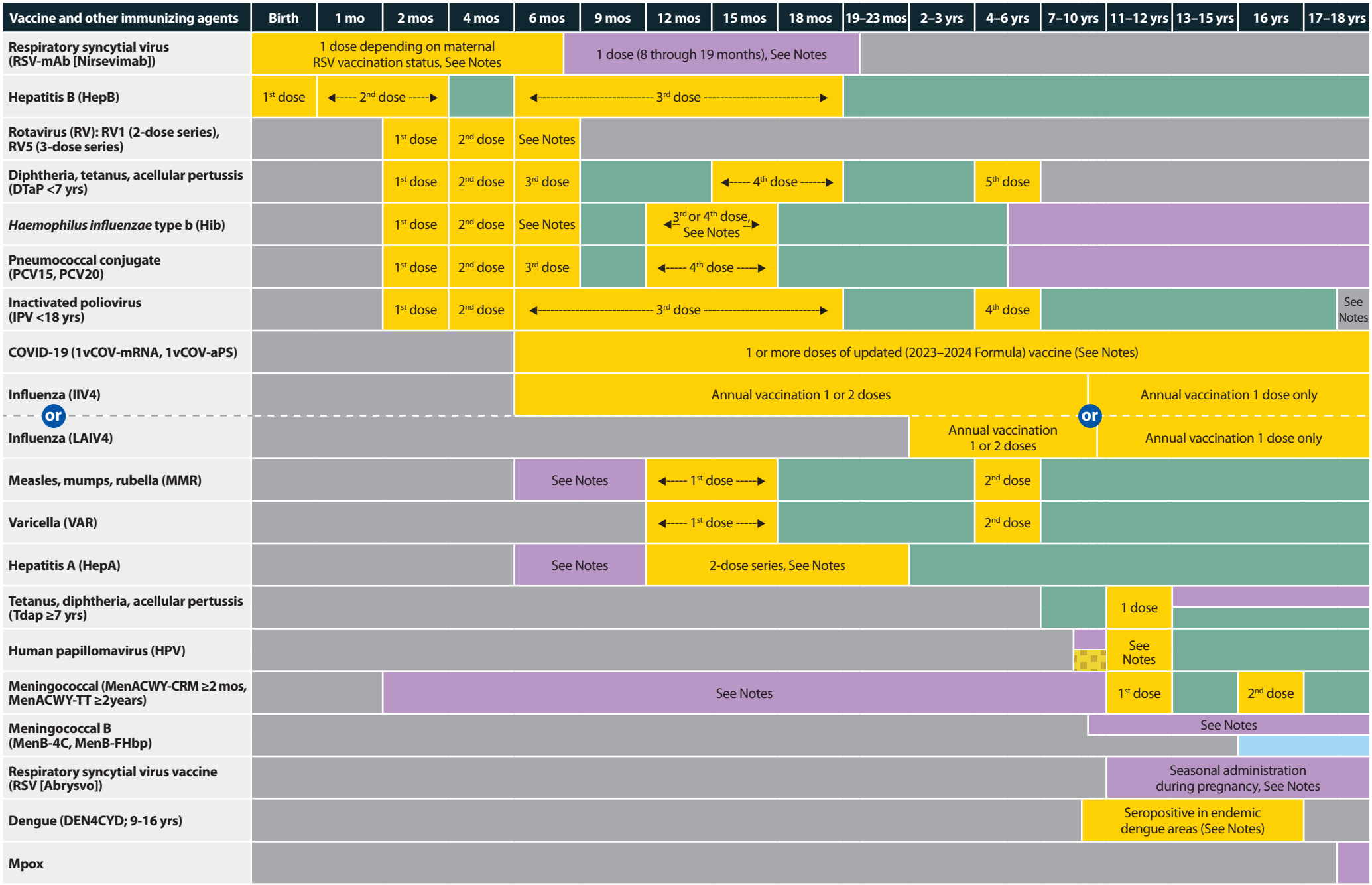


Table 2 Recommended Catch-up Immunization Schedule for Children and Adolescents Who Start Late or Who Are More than 1 Month Behind, United States, 2024

The table below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child's age. **Always use this table in conjunction with Table 1 and the Notes that follow.**

Vaccine	Minimum Age for Dose 1	Minimum Interval Between Doses			
		Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5
Children age 4 months through 6 years					
Hepatitis B	Birth	**4 weeks**	**8 weeks *and* at least 16 weeks after first dose** minimum age for the final dose is 24 weeks		
Rotavirus	6 weeks Maximum age for first dose is 14 weeks, 6 days.	**4 weeks**	**4 weeks** maximum age for final dose is 8 months, 0 days		
Diphtheria, tetanus, and acellular pertussis	6 weeks	**4 weeks**	**4 weeks**	**6 months**	**6 months** A fifth dose is not necessary if the fourth dose was administered at age 4 years or older ***and*** at least 6 months after dose 3
Haemophilus influenzae type b	6 weeks	**No further doses needed** if first dose was administered at age 15 months or older. **4 weeks** if first dose was administered before the 1st birthday. **8 weeks (as final dose)** if first dose was administered at age 12 through 14 months.	**No further doses needed** if previous dose was administered at age 15 months or older **4 weeks** if current age is younger than 12 months ***and*** first dose was administered at younger than age 7 months ***and*** at least 1 previous dose was PRP-T (ActHib®, Pentacel®, Hiberix®), Vaxelis® or unknown **8 weeks *and* age 12 through 59 months (as final dose)** if current age is younger than 12 months ***and*** first dose was administered at age 7 through 11 months; **OR** if current age is 12 through 59 months ***and*** first dose was administered before the 1st birthday ***and*** second dose was administered at younger than 15 months; **OR** if both doses were PedvaxHIB® and were administered before the 1st birthday	**8 weeks (as final dose)** This dose only necessary for children age 12 through 59 months who received 3 doses before the 1st birthday.	
Pneumococcal conjugate	6 weeks	**No further doses needed** for healthy children if first dose was administered at age 24 months or older **4 weeks** if first dose was administered before the 1st birthday **8 weeks (as final dose for healthy children)** if first dose was administered at the 1st birthday or after	**No further doses needed** for healthy children if previous dose was administered at age 24 months or older **4 weeks** if current age is younger than 12 months ***and*** previous dose was administered at <7 months old **8 weeks (as final dose for healthy children)** if previous dose was administered between 7–11 months (wait until at least 12 months old); **OR** if current age is 12 months or older ***and*** at least 1 dose was administered before age 12 months	**8 weeks (as final dose)** This dose is only necessary for children age 12 through 59 months regardless of risk, or age 60 through 71 months with any risk, who received 3 doses before age 12 months.	
Inactivated poliovirus	6 weeks	**4 weeks**	**4 weeks** if current age is <4 years **6 months (as final dose)** if current age is 4 years or older	**6 months (minimum age 4 years for final dose)**	
Measles, mumps, rubella	12 months	**4 weeks**			
Varicella	12 months	**3 months**			
Hepatitis A	12 months	**6 months**			
Meningococcal ACWY	2 months MenACWY-CRM 2 years MenACWY-TT	**8 weeks**	See Notes	See Notes	
Children and adolescents age 7 through 18 years					
Meningococcal ACWY	Not applicable (N/A)	**8 weeks**			
Tetanus, diphtheria; tetanus, diphtheria, and acellular pertussis	7 years	**4 weeks**	**4 weeks** if first dose of DTaP/DT was administered before the 1st birthday **6 months (as final dose)** if first dose of DTaP/DT or Tdap/Td was administered at or after the 1st birthday	**6 months** if first dose of DTaP/DT was administered before the 1st birthday	
Human papillomavirus	9 years	**Routine dosing intervals are recommended.**			
Hepatitis A	N/A	**6 months**			
Hepatitis B	N/A	**4 weeks**	**8 weeks *and* at least 16 weeks after first dose**		
Inactivated poliovirus	N/A	**4 weeks**	**6 months** A fourth dose is not necessary if the third dose was administered at age 4 years or older ***and*** at least 6 months after the previous dose.	A fourth dose of IPV is indicated if all previous doses were administered at <4 years **OR** if the third dose was administered <6 months after the second dose.	
Measles, mumps, rubella	N/A	**4 weeks**			
Varicella	N/A	**3 months** if younger than age 13 years. **4 weeks** if age 13 years or older			
Dengue	9 years	**6 months**	6 months		

Table 3 Recommended Child and Adolescent Immunization Schedule by Medical Indication, United States, 2024

Always use this table in conjunction with Table 1 and the Notes that follow. Medical conditions are often not mutually exclusive. If multiple conditions are present, refer to guidance in all relevant columns. See Notes for medical conditions not listed.

Vaccine and other immunizing agents	Pregnancy	Immunocompromised (excluding HIV infection)	HIV infection CD4 percentage and count[a]		CSF leak or cochlear implant	Asplenia or persistent complement component deficiencies	Heart disease or chronic lung disease	Kidney failure, End-stage renal disease or on Dialysis	Chronic liver disease	Diabetes
			<15% or <200mm	≥15% and ≥200mm						
RSV-mAb (nirsevimab)		2nd RSV season		1 dose depending on maternal RSV vaccination status, See Notes			2nd RSV season for chronic lung disease (See Notes)	1 dose depending on maternal RSV vaccination status, See Notes		
Hepatitis B										
Rotavirus		SCID[b]								
DTaP/Tdap	DTaP Tdap: 1 dose each pregnancy									
Hib		HSCT: 3 doses	See Notes			See Notes				
Pneumococcal										
IPV										
COVID-19		See Notes								
IIV4										
LAIV4							Asthma, wheezing: 2–4 years[c]			
MMR	*									
VAR	*									
Hepatitis A										
HPV	*	3 dose series. See Notes								
MenACWY										
MenB										
RSV (Abrysvo)	Seasonal administration, See Notes									
Dengue										
Mpox	See Notes									

- Recommended for all age-eligible children who lack documentation of a complete vaccination series
- Not recommended for all children, but is recommended for some children based on increased risk for or severe outcomes from disease
- Recommended for all age-eligible children, and additional doses may be necessary based on medical condition or other indications. See Notes.
- Precaution: Might be indicated if benefit of protection outweighs risk of adverse reaction
- Contraindicated or not recommended *Vaccinate after pregnancy, if indicated
- No Guidance/ Not Applicable

a. For additional information regarding HIV laboratory parameters and use of live vaccines, see the General Best Practice Guidelines for Immunization, "Altered Immunocompetence," at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html and Table 4-1 (footnote J) at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html.

b. Severe Combined Immunodeficiency

c. LAIV4 contraindicated for children 2–4 years of age with asthma or wheezing during the preceding 12 months

Notes

For vaccination recommendations for persons ages 19 years or older, see the Recommended Adult Immunization Schedule, 2024.

Additional information

- For calculating intervals between doses, 4 weeks = 28 days. Intervals of ≥4 months are determined by calendar months.
- Within a number range (e.g., 12–18), a dash (–) should be read as "through."
- Vaccine doses administered ≤4 days before the minimum age or interval are considered valid. Doses of any vaccine administered ≥5 days earlier than the minimum age or minimum interval should not be counted as valid and should be repeated as age appropriate. **The repeat dose should be spaced after the invalid dose by the recommended minimum interval.** For further details, see Table 3-2, Recommended and minimum ages and intervals between vaccine doses, in *General Best Practice Guidelines for Immunization* at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html.
- Information on travel vaccination requirements and recommendations is available at www.cdc.gov/travel/.
- For vaccination of persons with immunodeficiencies, see Table 8-1, Vaccination of persons with primary and secondary immunodeficiencies, in *General Best Practice Guidelines for Immunization* at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html, and Immunization in Special Clinical Circumstances (In: Kimberlin DW, Barnett ED, Lynfield Ruth, Sawyer MH, eds. *Red Book: 2021–2024 Report of the Committee on Infectious Diseases*. 32nd ed. Itasca, IL: American Academy of Pediatrics; 2021:72–86).
- For information about vaccination in the setting of a vaccine-preventable disease outbreak, contact your state or local health department.
- The National Vaccine Injury Compensation Program (VICP) is a no-fault alternative to the traditional legal system for resolving vaccine injury claims. All vaccines included in the child and adolescent vaccine schedule are covered by VICP except dengue, PPSV23, RSV, Mpox and COVID-19 vaccines. Mpox and COVID-19 vaccines are covered by the Countermeasures Injury Compensation Program (CICP). For more information, see www.hrsa.gov/vaccinecompensation or www.hrsa.gov/cicp.

COVID-19 vaccination

(minimum age: 6 months [Moderna and Pfizer-BioNTech COVID-19 vaccines], 12 years [Novavax COVID-19 Vaccine])

Routine vaccination

Age 6 months–4 years

- **Unvaccinated:**
  - 2-dose series of updated (2023–2024 Formula) Moderna at 0, 4-8 weeks
  - 3-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 3-8, 11-16 weeks
- **Previously vaccinated* with 1 dose of any Moderna:** 1 dose of updated (2023–2024 Formula) Moderna 4-8 weeks after the most recent dose.
- **Previously vaccinated* with 2 or more doses of any Moderna:** 1 dose of updated (2023–2024 Formula) Moderna at least 8 weeks after the most recent dose.
- **Previously vaccinated* with 1 dose of any Pfizer-BioNTech:** 2-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 8 weeks (minimum interval between previous Pfizer-BioNTech and dose 1: 3-8 weeks).
- **Previously vaccinated* with 2 or more doses of any Pfizer-BioNTech:** 1 dose of updated (2023–2024 Formula) Pfizer-BioNTech at least 8 weeks after the most recent dose.

Age 5–11 years

- **Unvaccinated:** 1 dose of updated (2023–2024 Formula) Moderna or Pfizer-BioNTech vaccine.
- **Previously vaccinated* with 1 or more doses of Moderna or Pfizer-BioNTech:** 1 dose of updated (2023–2024 Formula) Moderna or Pfizer-BioNTech at least 8 weeks after the most recent dose.

Age 12–18 years

- **Unvaccinated:**
  - 1 dose of updated (2023–2024 Formula) Moderna or Pfizer-BioNTech vaccine
  - 2-dose series of updated (2023–2024 Formula) Novavax at 0, 3-8 weeks
- **Previously vaccinated* with any COVID-19 vaccine(s):** 1 dose of any updated (2023–2024 Formula) COVID-19 vaccine at least 8 weeks after the most recent dose.

Special situations

Persons who are moderately or severely immunocompromised**

Age 6 months–4 years

- **Unvaccinated:**
  - 3-dose series of updated (2023–2024 Formula) Moderna at 0, 4, 8 weeks
  - 3-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 3, 11 weeks.
- **Previously vaccinated* with 1 dose of any Moderna:** 2-dose series of updated (2023–2024 Formula) Moderna at 0, 4 weeks (minimum interval between previous Moderna and dose 1: 4 weeks).
- **Previously vaccinated* with 2 doses of any Moderna:** 1 dose of updated (2023–2024 Formula) Moderna at least 4 weeks after the most recent dose.
- **Previously vaccinated* with 3 or more doses of any Moderna:** 1 dose of updated (2023–2024 Formula) Moderna at least 8 weeks after the most recent dose.
- **Previously vaccinated* with 1 dose of any Pfizer-BioNTech:** 2-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 8 weeks (minimum interval between previous Pfizer-BioNTech and dose 1: 3 weeks).
- **Previously vaccinated* with 2 or more doses of any Pfizer-BioNTech:** 1 dose of updated (2023–2024 Formula) Pfizer-BioNTech at least 8 weeks after the most recent dose.

Age 5–11 years

- **Unvaccinated:**
  - 3-dose series of updated (2023–2024 Formula) Moderna at 0, 4, 8 weeks
  - 3-dose series updated (2023–2024 Formula) Pfizer-BioNTech at 0, 3, 7 weeks.
- **Previously vaccinated* with 1 dose of any Moderna:** 2-dose series of updated (2023–2024 Formula) Moderna at 0, 4 weeks (minimum interval between previous Moderna and dose 1: 4 weeks).
- **Previously vaccinated* with 2 doses of any Moderna:** 1 dose of updated (2023–2024 Formula) Moderna at least 4 weeks after the most recent dose.
- **Previously vaccinated* with 1 dose of any Pfizer-BioNTech:** 2-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 4 weeks (minimum interval between previous Pfizer-BioNTech and dose 1: 3 weeks)
- **Previously vaccinated* with 2 doses of any Pfizer-BioNTech:** 1 dose of 2023–2024 Pfizer-BioNTech at least 4 weeks after the most recent dose.

- **Previously vaccinated* with 3 or more doses of any Moderna or Pfizer-BioNTech:** 1 dose of updated (2023–2024 Formula) Moderna or Pfizer-BioNTech at least 8 weeks after the most recent dose.

Age 12–18 years

- **Unvaccinated:**
  - 3-dose series of updated (2023–2024 Formula) Moderna at 0, 4, 8 weeks
  - 3-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 3, 7 weeks
  - 2-dose series of updated (2023–2024 Formula) Novavax at 0, 3 weeks
- **Previously vaccinated* with 1 dose of any Moderna:** 2-dose series of updated (2023–2024 Formula) Moderna at 0, 4 weeks (minimum interval between previous Moderna dose and dose 1: 4 weeks).
- **Previously vaccinated* with 2 doses of any Moderna:** 1 dose of updated (2023–2024 Formula) Moderna at least 4 weeks after the most recent dose.
- **Previously vaccinated* with 1 dose of any Pfizer-BioNTech:** 2-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 4 weeks (minimum interval between previous Pfizer-BioNTech dose and dose 1: 3 weeks).
- **Previously vaccinated* with 2 doses of any Pfizer-BioNTech:** 1 dose of updated (2023–2024 Formula) Pfizer-BioNTech at least 4 weeks after the most recent dose.
- **Previously vaccinated* with 3 or more doses of any Moderna or Pfizer-BioNTech:** 1 dose of any updated (2023–2024 Formula) COVID-19 vaccine at least 8 weeks after the most recent dose.
- **Previously vaccinated* with 1 or more doses of Janssen or Novavax or with or without dose(s) of any Original monovalent or bivalent COVID-19 vaccine:** 1 dose of any updated (2023–2024 Formula) COVID-19 vaccine at least 8 weeks after the most recent dose.

There is no preferential recommendation for the use of one COVID-19 vaccine over another when more than one recommended age-appropriate vaccine is available.

Administer an age-appropriate COVID-19 vaccine product for each dose. For information about transition from age 4 years to age 5 years or age 11 years to age 12 years during COVID-19 vaccination series, see Tables 1 and 2 at www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#covid-vaccines.

Current COVID-19 schedule and dosage formulation available at www.cdc.gov/covidschedule. For more information on Emergency Use Authorization (EUA) indications for COVID-19 vaccines, see www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines

***Note:** Previously vaccinated is defined as having received any Original monovalent or bivalent COVID-19 vaccine (Janssen, Moderna, Novavax, Pfizer-BioNTech) prior to the updated 2023–2024 formulation.

****Note:** Persons who are moderately or severely immunocompromised have the option to receive one additional dose of updated (2023–2024 Formula) COVID-19 vaccine at least 2 months following the last recommended updated (2023–2024 Formula) COVID-19 vaccine dose. Further additional updated (2023–2024 Formula) COVID-19 vaccine dose(s) may be administered, informed by the clinical judgement of a healthcare provider and personal preference and circumstances. Any further additional doses should be administered at least 2 months after the last updated (2023–2024 Formula) COVID-19 vaccine dose. Moderately or severely immunocompromised children 6 months–4 years of age should receive homologous updated (2023–2024 Formula) mRNA vaccine dose(s) if they receive additional doses.

Dengue vaccination (minimum age: 9 years)

Routine vaccination

- Age 9–16 years living in areas with endemic dengue **AND** have laboratory confirmation of previous dengue infection
  - 3-dose series administered at 0, 6, and 12 months
- Endemic areas include Puerto Rico, American Samoa, US Virgin Islands, Federated States of Micronesia, Republic of Marshall Islands, and the Republic of Palau. For updated guidance on dengue endemic areas and pre-vaccination laboratory testing see www.cdc.gov/mmwr/volumes/70/rr/rr7006a1.htm?s_cid=rr7006a1_w and www.cdc.gov/dengue/vaccine/hcp/index.html
- Dengue vaccine should not be administered to children traveling to or visiting endemic dengue areas.

Diphtheria, tetanus, and pertussis (DTaP) vaccination (minimum age: 6 weeks [4 years for Kinrix® or Quadracel®])

Routine vaccination

- 5-dose series (3-dose primary series at age 2, 4, and 6 months, followed by a booster doses at ages 15–18 months and 4–6 years
  - **Prospectively:** Dose 4 may be administered as early as age 12 months if at least 6 months have elapsed since dose 3.
  - **Retrospectively:** A 4th dose that was inadvertently administered as early as age 12 months may be counted if at least 4 months have elapsed since dose 3.

Catch-up vaccination

- Dose 5 is not necessary if dose 4 was administered at age 4 years or older and at least 6 months after dose 3.
- For other catch-up guidance, see Table 2.

Special situations

- **Wound management** in children less than age 7 years with history of 3 or more doses of tetanus-toxoid-containing vaccine: For all wounds except clean and minor wounds, administer DTaP if more than 5 years since last dose of tetanus-toxoid-containing vaccine. For detailed information, see www.cdc.gov/mmwr/volumes/67/rr/rr6702a1.htm.

Haemophilus influenzae type b vaccination (minimum age: 6 weeks)

Routine vaccination

- **ActHIB®, Hiberix®, Pentacel®, or Vaxelis®:** 4-dose series (3-dose primary series at age 2, 4, and 6 months, followed by a booster dose* at age 12–15 months)
  - *Vaxelis® is not recommended for use as a booster dose. A different Hib-containing vaccine should be used for the booster dose.
- **PedvaxHIB®:** 3-dose series (2-dose primary series at age 2 and 4 months, followed by a booster dose at age 12–15 months)

Catch-up vaccination

- **Dose 1 at age 7–11 months:** Administer dose 2 at least 4 weeks later and dose 3 (final dose) at age12–15 months or 8 weeks after dose 2 (whichever is later).
- **Dose 1 at age 12–14 months:** Administer dose 2 (final dose) at least 8 weeks after dose 1.
- **Dose 1 before age 12 months and dose 2 before age 15 months:** Administer dose 3 (final dose) at least 8 weeks after dose 2.
- **2 doses of PedvaxHIB® before age 12 months:** Administer dose 3 (final dose) at age12–59 months and at least 8 weeks after dose 2.
- **1 dose administered at age 15 months or older:** No further doses needed
- **Unvaccinated at age 15–59 months:** Administer 1 dose.

- **Previously unvaccinated children age 60 months or older who are not considered high risk:** Do not require catch-up vaccination

For other catch-up guidance, see Table 2. Vaxelis® can be used for catch-up vaccination in children less than age 5 years. Follow the catch-up schedule even if Vaxelis® is used for one or more doses. For detailed information on use of Vaxelis® see www.cdc.gov/mmwr/volumes/69/wr/mm6905a5.htm.

Special situations

- **Chemotherapy or radiation treatment:**
  Age 12–59 months
  - Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart
  - 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose

  Doses administered within 14 days of starting therapy or during therapy should be repeated at least 3 months after therapy completion.
- **Hematopoietic stem cell transplant (HSCT):**
  - 3-dose series 4 weeks apart starting 6 to 12 months after successful transplant, regardless of Hib vaccination history
- **Anatomic or functional asplenia (including sickle cell disease):**
  Age 12–59 months
  - Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart
  - 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose

  Unvaccinated* persons age 5 years or older
  - 1 dose
- **Elective splenectomy:**
  Unvaccinated* persons age 15 months or older
  - 1 dose (preferably at least 14 days before procedure)
- **HIV infection:**
  Age 12–59 months
  - Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart
  - 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose

  Unvaccinated* persons age 5–18 years
  - 1 dose
- **Immunoglobulin deficiency, early component complement deficiency:**
  Age 12–59 months
  - Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart
  - 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose

Unvaccinated* = Less than routine series (through age 14 months) **OR no doses (age 15 months or older)*

Hepatitis A vaccination
(minimum age: 12 months for routine vaccination)

Routine vaccination

- 2-dose series (minimum interval: 6 months) at age 12–23 months

Catch-up vaccination

- Unvaccinated persons through age 18 years should complete a 2-dose series (minimum interval: 6 months).
- Persons who previously received 1 dose at age 12 months or older should receive dose 2 at least 6 months after dose 1.
- Adolescents age 18 years or older may receive the combined HepA and HepB vaccine, **Twinrix®**, as a 3-dose series (0, 1, and 6 months) or 4-dose series (3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months).

International travel

- Persons traveling to or working in countries with high or intermediate endemic hepatitis A (www.cdc.gov/travel/):
  - **Infants age 6–11 months**: 1 dose before departure; revaccinate with 2 doses (separated by at least 6 months) between age 12–23 months.
  - **Unvaccinated age 12 months or older**: Administer dose 1 as soon as travel is considered.

Hepatitis B vaccination
(minimum age: birth)

Routine vaccination

- 3-dose series at age 0, 1–2, 6–18 months **(use monovalent HepB vaccine for doses administered before age 6 weeks)**
  - Birth weight ≥2,000 grams: 1 dose within 24 hours of birth if medically stable
  - Birth weight <2,000 grams: 1 dose at chronological age 1 month or hospital discharge (whichever is earlier and even if weight is still <2,000 grams).
- Infants who did not receive a birth dose should begin the series as soon as possible (see Table 2 for minimum intervals).
- Administration of 4 doses is permitted when a combination vaccine containing HepB is used after the birth dose.
- **Minimum intervals (see Table 2):** when 4 doses are administered, substitute "dose 4" for "dose 3" in these calculations
- **Final (3rd or 4th) dose:** age 6–18 months **(minimum age 24 weeks)**
- **Mother is HBsAg-positive**
  - **Birth dose (monovalent HepB vaccine only):** administer **HepB vaccine** and **hepatitis B immune globulin (HBIG)** (in separate limbs) within 12 hours of birth, regardless of birth weight.
  - **Birth weight <2000 grams:** administer 3 additional doses of HepB vaccine beginning at age 1 month (total of 4 doses)
  - **Final (3rd or 4th) dose:** administer at age 6 months **(minimum age 24 weeks)**
  - Test for HBsAg and anti-HBs at age 9–12 months. If HepB series is delayed, test 1–2 months after final dose. Do not test before age 9 months.
- **Mother is HBsAg-unknown**

  If other evidence suggestive of maternal hepatitis B infection exists (e.g., presence of HBV DNA, HBeAg-positive, or mother known to have chronic hepatitis B infection), manage infant as if mother is HBsAg-positive
  - **Birth dose (monovalent HepB vaccine only):**
    - Birth weight ≥2,000 grams: administer **HepB vaccine** within 12 hours of birth. Determine mother's HBsAg status as soon as possible. If mother is determined to be HBsAg-positive, administer **HBIG** as soon as possible (in separate limb), but no later than 7 days of age.
    - Birth weight <2,000 grams: administer **HepB vaccine** and **HBIG** (in separate limbs) within 12 hours of birth. Administer 3 additional doses of **HepB vaccine** beginning at age 1 month (total of 4 doses)
  - **Final (3rd or 4th) dose:** administer at age 6 months **(minimum age 24 weeks)**
  - If mother is determined to be HBsAg-positive or if status remains unknown, test for HBsAg and anti-HBs at age 9–12 months. If HepB series is delayed, test 1–2 months after final dose. Do not test before age 9 months.

Catch-up vaccination

- Unvaccinated persons should complete a 3-dose series at 0, 1–2, 6 months. See Table 2 for minimum intervals
- Adolescents age 11–15 years may use an alternative 2-dose schedule with at least 4 months between doses (adult formulation **Recombivax HB®** only).
- Adolescents age 18 years may receive:
  - **Heplisav-B®:** 2-dose series at least 4 weeks apart
  - **PreHevbrio®:** 3-dose series at 0, 1, and 6 months
  - Combined HepA and HepB vaccine, **Twinrix®:** 3-dose series (0, 1, and 6 months) or 4-dose series (3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months).

Special situations

- Revaccination is not generally recommended for persons with a normal immune status who were vaccinated as infants, children, adolescents, or adults.
- **Post-vaccination serology testing and revaccination** (if anti-HBs <10mIU/mL) is recommended for certain populations, including:
  - Infants born to HBsAg-positive mothers
  - Persons who are predialysis or on maintenance dialysis
  - Other immunocompromised persons
  - For detailed revaccination recommendations, see www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/hepb.html.

Note: Heplisav-B and PreHevbrio are not recommended in pregnancy due to lack of safety data in pregnant persons

Human papillomavirus vaccination (minimum age: 9 years)

Routine and catch-up vaccination

- HPV vaccination routinely recommended at **age 11–12 years (can start at age 9 years)** and catch-up HPV vaccination recommended for all persons through age 18 years if not adequately vaccinated
- 2- or 3-dose series depending on age at initial vaccination:
  - **Age 9–14 years at initial vaccination**: 2-dose series at 0, 6–12 months (minimum interval: 5 months; repeat dose if administered too soon)
  - **Age 15 years or older at initial vaccination**: 3-dose series at 0, 1–2 months, 6 months (minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 12 weeks / dose 1 to dose 3: 5 months; repeat dose if administered too soon)
- No additional dose recommended when any HPV vaccine series **of any valency** has been completed using recommended dosing intervals.

Special situations

- **Immunocompromising conditions, including HIV infection:** 3-dose series, even for those who initiate vaccination at age 9 through 14 years.
- **History of sexual abuse or assault:** Start at age 9 years
- **Pregnancy:** Pregnancy testing not needed before vaccination; HPV vaccination not recommended until after pregnancy; no intervention needed if vaccinated while pregnant

Influenza vaccination (minimum age: 6 months [IIV], 2 years [LAIV4], 18 years [recombinant influenza vaccine, RIV4])

Routine vaccination

- Use any influenza vaccine appropriate for age and health status annually:
  - **Age 6 months–8 years** who have received **fewer** than 2 influenza vaccine doses before July 1, 2023, or whose influenza vaccination history is unknown: 2 doses, separated by at least 4 weeks. Administer dose 2 even if the child turns 9 years between receipt of dose 1 and dose 2.
  - **Age 6 months–8 years** who have received **at least** 2 influenza vaccine doses before July 1, 2023: 1 dose
  - **Age 9 years or older:** 1 dose
- For the 2023-2024 season, see www.cdc.gov/mmwr/volumes/72/rr/rr7202a1.htm.
- For the 2024–25 season, see the 2024–25 ACIP influenza vaccine recommendations.

Special situations

- **Close contacts (e.g., household contacts) of severely immunosuppressed persons who require a protected environment:** should not receive LAIV4. If LAIV4 is given, they should avoid contact with for such immunosuppressed persons for 7 days after vaccination.

Note: Persons with an egg allergy can receive any influenza vaccine (egg-based and non-egg-based) appropriate for age and health status.

Measles, mumps, and rubella vaccination (minimum age: 12 months for routine vaccination)

Routine vaccination

- 2-dose series at age 12–15 months, age 4–6 years
- MMR or MMRV* may be administered

Note: For dose 1 in children age 12–47 months, it is recommended to administer MMR and varicella vaccines separately. MMRV* may be used if parents or caregivers express a preference.

Catch-up vaccination

- Unvaccinated children and adolescents: 2-dose series at least 4 weeks apart*
- The maximum age for use of MMRV* is 12 years.

Special situations

- **International travel**
  - **Infants age 6–11 months:** 1 dose before departure; revaccinate with 2-dose series at age 12–15 months (12 months for children in high-risk areas) and dose 2 as early as 4 weeks later.*
  - **Unvaccinated children age 12 months or older:** 2-dose series at least 4 weeks apart before departure*
- In mumps outbreak settings, for information about additional doses of MMR (including 3rd dose of MMR), see www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm

***Note:** If MMRV is used, the minimum interval between MMRV doses is 3 months

Meningococcal serogroup A,C,W,Y vaccination (minimum age: 2 months [MenACWY-CRM, Menveo], 2 years [MenACWY-TT, MenQuadfi]), 10 years [MenACWY-TT/MenB-FHbp, Penbraya])

Routine vaccination

- 2-dose series at age 11–12 years; 16 years

Catch-up vaccination

- Age 13–15 years: 1 dose now and booster at age 16–18 years (minimum interval: 8 weeks)
- Age 16–18 years: 1 dose

Special situations

Anatomic or functional asplenia (including sickle cell disease), HIV infection, persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use:

- **Menveo®***
  - Dose 1 at age 2 months: 4-dose series (additional 3 doses at age 4, 6, and 12 months)
  - Dose 1 at age 3–6 months: 3- or 4-dose series (dose 2 [and dose 3 if applicable] at least 8 weeks after previous dose until a dose is received at age 7 months or older, followed by an additional dose at least 12 weeks later and after age 12 months)
  - Dose 1 at age 7–23 months: 2-dose series (dose 2 at least 12 weeks after dose 1 and after age 12 months)
  - Dose 1 at age 24 months or older: 2-dose series at least 8 weeks apart
- **MenQuadfi®**
  - Dose 1 at age 24 months or older: 2-dose series at least 8 weeks apart

Travel to countries with hyperendemic or epidemic meningococcal disease, including countries in the African meningitis belt or during the Hajj (www.cdc.gov/travel/)**:**

- Children less than age 24 months:
  - **Menveo®* (age 2–23 months)**
    - Dose 1 at age 2 months: 4-dose series (additional 3 doses at age 4, 6, and 12 months)
    - Dose 1 at age 3–6 months: 3- or 4-dose series (dose 2 [and dose 3 if applicable] at least 8 weeks after previous dose until a dose is received at age 7 months or older, followed by an additional dose at least 12 weeks later and after age 12 months)
    - Dose 1 at age 7–23 months: 2-dose series (dose 2 at least 12 weeks after dose 1 and after age 12 months)
- Children age 2 years or older: 1 dose Menveo®* or MenQuadfi®

First-year college students who live in residential housing (if not previously vaccinated at age 16 years or older) or military recruits:

- 1 dose **Menveo®*** or **MenQuadfi®**

Adolescent vaccination of children who received MenACWY prior to age 10 years:

- **Children for whom boosters are recommended** because of an ongoing increased risk of meningococcal disease (e.g., those with complement component deficiency, HIV, or asplenia): Follow the booster schedule for persons at increased risk.
- **Children for whom boosters are not recommended** (e.g., a healthy child who received a single dose for travel to a country where meningococcal disease is endemic): Administer MenACWY according to the recommended adolescent schedule with dose 1 at age 11–12 years and dose 2 at age 16 years.

**Menveo has two formulations: lyophilized and liquid. The liquid formulation should not be used before age 10 years. See www.cdc.gov/vaccines/vpd/mening/downloads/menveo-single-vial-presentation.pdf.*

Note: For MenACWY **booster dose recommendations** for groups listed under "Special situations" and in an outbreak setting and additional meningococcal vaccination information, see www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm.

Children age 10 years or older may receive a single dose of Penbraya™ as an alternative to separate administration of MenACWY and MenB when both vaccines would be given on the same clinic day (see "Meningococcal serogroup B vaccination" section below for more information).

Meningococcal serogroup B vaccination (minimum age: 10 years [MenB-4C, Bexsero®; MenB-FHbp, Trumenba®; MenACWY-TT/MenB-FHbp, Penbraya™])

Shared clinical decision-making

- **Adolescents not at increased risk** age 16–23 years (preferred age 16–18 years) based on shared clinical decision-making:
  - **Bexsero®:** 2-dose series at least 1 month apart
  - **Trumenba®:** 2-dose series at least 6 months apart (if dose 2 is administered earlier than 6 months, administer a 3rd dose at least 4 months after dose 2)

For additional information on shared clinical decision-making for MenB, see www.cdc.gov/vaccines/hcp/admin/downloads/isd-job-aid-scdm-mening-b-shared-clinical-decision-making.pdf

Special situations

Anatomic or functional asplenia (including sickle cell disease), persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use:

- **Bexsero®:** 2-dose series at least 1 month apart
- **Trumenba®:** 3-dose series at 0, 1–2, 6 months (if dose 2 was administered at least 6 months after dose 1, dose 3 not needed; if dose 3 is administered earlier than 4 months after dose 2, a 4th dose should be administered at least 4 months after dose 3)

Note: Bexsero® and **Trumenba®** are not interchangeable; the same product should be used for all doses in a series.

For MenB **booster dose recommendations** for groups listed under "Special situations" and in an outbreak setting and additional meningococcal vaccination information, see www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm.

Children age 10 years or older may receive a dose of Penbraya™ as an alternative to separate administration of MenACWY and MenB when both vaccines would be given on the same clinic day. For age-eligible children not at increased risk, if Penbraya™ is used for dose 1 MenB, MenB-FHbp (Trumenba) should be administered for dose 2 MenB. For age-eligible children at increased risk of meningococcal disease, Penbraya™ may be used for additional MenACWY and MenB doses (including booster doses) if both would be given on the same clinic day **and** at least 6 months have elapsed since most recent Penbraya™ dose.

Mpox vaccination (minimum age: 18 years [Jynneos®])

Special situations

- **Age 18 years and at risk for Mpox infection:** 2-dose series, 28 days apart.

  Risk factors for Mpox infection include:
  - Persons who are gay, bisexual, and other MSM, transgender or nonbinary people who in the past 6 months have had:
    - A new diagnosis of at least 1 sexually transmitted disease
    - More than 1 sex partner
    - Sex at a commercial sex venue
    - Sex in association with a large public event in a geographic area where Mpox transmission is occurring
  - Persons who are sexual partners of the persons described above
  - Persons who anticipate experiencing any of the situations described above
- **Pregnancy:** There is currently no ACIP recommendation for Jynneos use in pregnancy due to lack of safety data in pregnant persons. Pregnant persons with any risk factor described above may receive Jynneos.

For detailed information, see: www.cdc.gov/vaccines/acip/meetings/downloads/slides-2023-10-25-26/04-MPOX-Rao-508.pdf

Pneumococcal vaccination (minimum age: 6 weeks [PCV15], [PCV 20]; 2 years [PPSV23])

Routine vaccination with PCV

- 4-dose series at 2, 4, 6, 12–15 months

Catch-up vaccination with PCV

- Healthy children ages 2–4 years with any incomplete* PCV series: 1 dose PCV
- For other catch-up guidance, see Table 2.

Note: For children **without** risk conditions, PCV20 is not indicated if they have received 4 doses of PCV13 or PCV15 or another age appropriate complete PCV series.

Special situations

Children and adolescents with cerebrospinal fluid leak; chronic heart disease; chronic kidney disease (excluding maintenance dialysis and nephrotic syndrome); chronic liver disease; chronic lung disease (including moderate persistent or severe persistent asthma); cochlear implant; or diabetes mellitus:

Age 2–5 years

- Any incomplete* PCV series with:
  - 3 PCV doses: 1 dose PCV (at least 8 weeks after the most recent PCV dose)
  - Less than 3 PCV doses: 2 doses PCV (at least 8 weeks after the most recent dose and administered at least 8 weeks apart)
- Completed recommended PCV series but have not received PPSV23
  - Previously received at least 1 dose of PCV20: no further PCV or PPSV23 doses needed
  - Not previously received PCV20: administer 1 dose PCV20 OR 1 dose PPSV23 administer at least 8 weeks after the most recent PCV dose.

Age 6–18 years

- Not previously received any dose of PCV13, PCV15, or PCV20: administer 1 dose of PCV15 or PCV20. If PCV15 is used and no previous receipt of PPSV23, administer 1 dose of PPSV23 at least 8 weeks after the PCV15 dose.**
- Received PCV before age 6 years but have not received PPSV23
  - Previously received at least 1 dose of PCV20: no further PCV or PPSV23 doses needed
  - Not previously received PCV20: 1 dose PCV20 OR 1 dose PPSV23 administer at least 8 weeks after the most recent PCV dose.
- Received PCV13 only at or after age 6 years: administer 1 dose PCV20 OR 1 dose PPSV23 at least 8 weeks after the most recent PCV13 dose.
- Received 1 dose PCV13 and 1 dose PPSV23 at or after age 6 years: no further doses of any PCV or PPSV23 indicated.

Children and adolescents on maintenance dialysis, or with immunocompromising conditions such as nephrotic syndrome; congenital or acquired asplenia or splenic dysfunction; congenital or acquired immunodeficiencies; diseases and conditions treated with immunosuppressive drugs or radiation therapy, including malignant neoplasms, leukemias, lymphomas, Hodgkin disease, and solid organ transplant; HIV infection; or sickle cell disease or other hemoglobinopathies:

Age 2–5 years

- Any incomplete* PCV series:
  - 3 PCV doses: 1 dose PCV (at least 8 weeks after the most recent PCV dose)
  - Less than 3 PCV doses: 2 doses PCV (at least 8 weeks after the most recent dose and administered at least 8 weeks apart)
- Completed recommended PCV series but have not received PPSV23
  - Previously received at least 1 dose of PCV20: no further PCV or PPSV23 doses needed
  - Not previously received PCV20: administer 1 dose PCV20 OR 1 dose PPSV23 at least 8 weeks after the most recent PCV dose. If PPSV23 is used, administer 1 dose of PCV20 or dose 2 PPSV23 at least 5 years after dose 1 PPSV23.

Age 6–18 years

- Not previously received any dose of PCV13, PCV15, or PCV20: administer 1 dose of PCV15 or 1 dose of PCV20. If PCV15 is used and no previous receipt of PPSV23, administer 1 dose of PPSV23 at least 8 weeks after the PCV15 dose.**
- Received PCV before age 6 years but have not received PPSV23
  - Previously received at least 1 dose of PCV20: no additional dose of PCV or PPSV23
  - Not previously received PCV20: administer 1 dose PCV20 OR 1 dose PPSV23 at least 8 weeks after the most recent PCV dose. If PPSV23 is used, administer either PCV20 or dose 2 PPSV23 at least 5 years after dose 1 PPSV23.
- Received PCV13 only at or after age 6 years: administer 1 dose PCV20 OR 1 dose PPSV23 at least 8 weeks after the most recent PCV13 dose. If PPSV23 is used, administer 1 dose of PCV20 or dose 2 PPSV23 at least 5 years after dose 1 PPSV23.
- Received 1 dose PCV13 and 1 dose PPSV23 at or after age 6 years: administer 1 dose PCV20 OR 1 dose PPSV23 at least 8 weeks after the most recent PCV13 dose and at least 5 years after dose 1 PPSV23.

**Incomplete series* = Not having received all doses in either the recommended series or an age-appropriate catch-up series. See Table 2 in ACIP pneumococcal recommendations at stacks.cdc.gov/view/cdc/133252

***When both PCV15 and PPSV23 are indicated, administer all doses of PCV15 first. PCV15 and PPSV23 should not be administered during the same visit.*

For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app, which can be downloaded here: www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html

Poliovirus vaccination
(minimum age: 6 weeks)

Routine vaccination

- 4-dose series at ages 2, 4, 6–18 months, 4–6 years; administer the final dose on or after age 4 years and at least 6 months after the previous dose.
- 4 or more doses of IPV can be administered before age 4 years when a combination vaccine containing IPV is used. However, a dose is still recommended on or after age 4 years and at least 6 months after the previous dose.

Catch-up vaccination

- In the first 6 months of life, use minimum ages and intervals only for travel to a polio-endemic region or during an outbreak.
- **Adolescents age 18 years known or suspected to be unvaccinated or incompletely vaccinated:** administer remaining doses (1, 2, or 3 IPV doses) to complete a 3-dose primary series.* Unless there are specific reasons to believe they were not vaccinated, most persons aged 18 years or older born and raised in the United States can assume they were vaccinated against polio as children.

Series containing oral poliovirus vaccine (OPV), either mixed OPV-IPV or OPV-only series:

- Total number of doses needed to complete the series is the same as that recommended for the U.S. IPV schedule. See www.cdc.gov/mmwr/volumes/66/wr/mm6601a6.htm?s_%20cid=mm6601a6_w.
- Only trivalent OPV (tOPV) counts toward the U.S. vaccination requirements.
  - Doses of OPV administered before April 1, 2016, should be counted (unless specifically noted as administered during a campaign).
  - Doses of OPV administered on or after April 1, 2016, should not be counted.
  - For guidance to assess doses documented as "OPV," see www.cdc.gov/mmwr/volumes/66/wr/mm6606a7.htm?s_cid=mm6606a7_w.
- For other catch-up guidance, see Table 2.

Special situations

- **Adolescents aged 18 years at increased risk of exposure to poliovirus and completed primary series*:** may administer one lifetime IPV booster

***Note:** Complete primary series consist of at least 3 doses of IPV or trivalent oral poliovirus vaccine (tOPV) in any combination.

For detailed information, see: www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html

Respiratory syncytial virus immunization (minimum age: birth [Nirsevimab, RSV-mAb (Beyfortus™)

Routine immunization

- **Infants born October – March in most of the continental United States***
  - Mother did not receive RSV vaccine OR mother's RSV vaccination status is unknown: administer 1 dose nirsevimab within 1 week of birth in hospital or outpatient setting
  - Mother received RSV vaccine **less than 14 days** prior to delivery: administer 1 dose nirsevimab within 1 week of birth in hospital or outpatient setting
  - Mother received RSV vaccine **at least 14 days** prior to delivery: nirsevimab not needed but can be considered in rare circumstances at the discretion of healthcare providers (see special populations and situations at www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html)
- **Infants born April–September in most of the continental United States***
  - Mother did not receive RSV vaccine OR mother's RSV vaccination status is unknown: administer 1 dose nirsevimab shortly before start of RSV season*
  - Mother received RSV vaccine **less than 14 days** prior to delivery: administer 1 dose nirsevimab shortly before start of RSV season*
  - Mother received RSV vaccine **at least 14 days** prior to delivery: nirsevimab not needed but can be considered in rare circumstances at the discretion of healthcare providers(see special populations and situations at www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html)

Infants with prolonged birth hospitalization** (e.g., for prematurity) discharged October through March should be immunized shortly before or promptly after discharge.

Special situations

- **Ages 8–19 months with chronic lung disease of prematurity requiring medical support (e.g., chronic corticosteroid therapy, diuretic therapy, or supplemental oxygen) any time during the 6-month period before the start of the second RSV season; severe immunocompromise; cystic fibrosis with either weight for length <10th percentile or manifestation of severe lung disease (e.g., previous hospitalization for pulmonary exacerbation in the first year of life or abnormalities on chest imaging that persist when stable)**:**
  - 1 dose nirsevimab shortly before start of second RSV season*
- **Ages 8–19 months who are American Indian or Alaska Native:**
  - 1 dose nirsevimab shortly before start of second RSV season*
- **Age-eligible and undergoing cardiac surgery with cardiopulmonary bypass**:** 1 additional dose of nirsevimab after surgery. For additional details see special populations and situations at www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html

***Note:** While the timing of the onset and duration of RSV season may vary, nirsevimab may be administered October through March in most of the continental United States. Providers in jurisdictions with RSV seasonality that differs from most of the continental United States (e.g., Alaska, jurisdiction with tropical climate) should follow guidance from public health authorities (e.g., CDC, health departments) or regional medical centers on timing of administration based on local RSV seasonality. Although optimal timing of administration is just before the start of the RSV season, nirsevimab may also be administered during the RSV season to infants and children who are age-eligible.

****Note:** Nirsevimab can be administered to children who are eligible to receive palivizumab. Children who have received nirsevimab should not receive palivizumab for the same RSV season.

For further guidance, see www.cdc.gov/mmwr/volumes/72/wr/mm7234a4.htm and www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html

Respiratory syncytial virus vaccination (RSV [Abrysvo™])

Routine vaccination

- **Pregnant at 32 weeks 0 days through 36 weeks and 6 days gestation from September through January in most of the continental United States*:** 1 dose RSV vaccine (Abrysvo™). Administer RSV vaccine regardless of previous RSV infection.
  - Either maternal RSV vaccination or infant immunization with nirsevimab (RSV monoclonal antibody) is recommended to prevent respiratory syncytial virus lower respiratory tract infection in infants.
- **All other pregnant persons:** RSV vaccine not recommended.

There is currently no ACIP recommendation for RSV vaccination in subsequent pregnancies. No data are available to inform whether additional doses are needed in later pregnancies.

***Note:** Providers in jurisdictions with RSV seasonality that differs from most of the continental United States (e.g., Alaska, jurisdiction with tropical climate) should follow guidance from public health authorities (e.g., CDC, health departments) or regional medical centers on timing of administration based on local RSV seasonality.

Rotavirus vaccination (minimum age: 6 weeks)

Routine vaccination

- **Rotarix®:** 2-dose series at age 2 and 4 months
- **RotaTeq®:** 3-dose series at age 2, 4, and 6 months
- If any dose in the series is either **RotaTeq®** or unknown, default to 3-dose series.

Catch-up vaccination

- Do not start the series on or after age 15 weeks, 0 days.
- The maximum age for the final dose is 8 months, 0 days.
- For other catch-up guidance, see Table 2.

Tetanus, diphtheria, and pertussis (Tdap) vaccination
(minimum age: 11 years for routine vaccination, 7 years for catch-up vaccination)

Routine vaccination

- **Age 11–12 years:** 1 dose Tdap (adolescent booster)
- **Pregnancy:** 1 dose Tdap during each pregnancy, preferably in early part of gestational weeks 27–36.

Note: Tdap may be administered regardless of the interval since the last tetanus- and diphtheria-toxoid-containing vaccine.

Catch-up vaccination

- **Age 13–18 years who have not received Tdap:** 1 dose Tdap (adolescent booster)
- **Age 7–18 years not fully vaccinated* with DTaP:** 1 dose Tdap as part of the catch-up series (preferably the first dose); if additional doses are needed, use Td or Tdap.
- **Tdap administered at age 7–10 years:**
  - **Age 7–9 years** who receive Tdap should receive the adolescent Tdap booster dose at age 11–12 years.
  - **Age 10 years** who receive Tdap do not need the adolescent Tdap booster dose at age 11–12 years.
- **DTaP inadvertently administered on or after age 7 years**:
  - **Age 7–9 years**: DTaP may count as part of catch-up series. Administer adolescent Tdap booster dose at age 11–12 years.
  - **Age 10–18 years**: Count dose of DTaP as the adolescent Tdap booster dose.
- For other catch-up guidance, see Table 2.

Special situations

- **Wound management** in persons age 7 years or older with history of 3 or more doses of tetanus-toxoid-containing vaccine: For clean and minor wounds, administer Tdap or Td if more than 10 years since last dose of tetanus-toxoid-containing vaccine; for all other wounds, administer Tdap or Td if more than 5 years since last dose of tetanus-toxoid-containing vaccine. Tdap is preferred for persons age 11 years or older who have not previously received Tdap or whose Tdap history is unknown. If a tetanus-toxoid-containing vaccine is indicated for a pregnant adolescent, use Tdap.
- For detailed information, see www.cdc.gov/mmwr/volumes/69/wr/mm6903a5.htm.

**Fully vaccinated* = 5 valid doses of DTaP OR 4 valid doses of DTaP if dose 4 was administered at age 4 years or older

Varicella vaccination
(minimum age: 12 months)

Routine vaccination

- 2-dose series at age 12–15 months, 4–6 years
- VAR or MMRV may be administered*
- Dose 2 may be administered as early as 3 months after dose 1 (a dose inadvertently administered after at least 4 weeks may be counted as valid)

**Note:* For dose 1 in children age 12–47 months, it is recommended to administer MMR and varicella vaccines separately. MMRV may be used if parents or caregivers express a preference.

Catch-up vaccination

- Ensure persons age 7–18 years without evidence of immunity (see *MMWR* at www.cdc.gov/mmwr/pdf/rr/rr5604.pdf) have a 2-dose series:
  - **Age 7–12 years**: Routine interval: 3 months (a dose inadvertently administered after at least 4 weeks may be counted as valid)
  - **Age 13 years and older**: Routine interval: 4–8 weeks (minimum interval: 4 weeks)
  - The maximum age for use of *MMRV* is 12 years.

Appendix Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, United States, 2024

Guide to Contraindications and Precautions to Commonly Used Vaccines

Adapted from Table 4-1 in Advisory Committee on Immunization Practices (ACIP) General Best Practice Guidelines for Immunization: Contraindication and Precautions, Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices—United States, 2023–24 Influenza Season | MMWR (cdc.gov), Contraindications and Precautions for COVID-19 Vaccination, and Contraindications and Precautions for JYNNEOS Vaccination

Vaccines and other Immunizing Agents	Contraindicated or Not Recommended[1]	Precautions[2]
COVID-19 mRNA vaccines [Pfizer-BioNTech, Moderna]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a component of an mRNA COVID-19 vaccine[4]	• Diagnosed non-severe allergy (e.g., urticaria beyond the injection site) to a component of an mRNA COVID-19 vaccine[4]; or non-severe, immediate (onset less than 4 hours) allergic reaction after administration of a previous dose of an mRNA COVID-19 vaccine • Myocarditis or pericarditis within 3 weeks after a dose of any COVID-19 vaccine • Multisystem inflammatory syndrome in children (MIS-C) or multisystem inflammatory syndrome in adults (MIS-A) • Moderate or severe acute illness, with or without fever
COVID-19 protein subunit vaccine [Novavax]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a component of a Novavax COVID-19 vaccine[4]	• Diagnosed non-severe allergy (e.g., urticaria beyond the injection site) to a component of Novavax COVID-19 vaccine[4]; or non-severe, immediate (onset less than 4 hours) allergic reaction after administration of a previous dose of a Novavax COVID-19 vaccine • Myocarditis or pericarditis within 3 weeks after a dose of any COVID-19 vaccine • Multisystem inflammatory syndrome in children (MIS-C) or multisystem inflammatory syndrome in adults (MIS-A) • Moderate or severe acute illness, with or without fever
Influenza, egg-based, inactivated injectable (IIV4)	• Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, ccIIV, RIV, or LAIV of any valency) • Severe allergic reaction (e.g., anaphylaxis) to any vaccine component[3] (excluding egg)	• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine • Moderate or severe acute illness with or without fever
Influenza, cell culture-based inactivated injectable (ccIIV4) [Flucelvax Quadrivalent]	• Severe allergic reaction (e.g., anaphylaxis) to any ccIIV of any valency, or to any component[3] of ccIIV4	• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine • Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, RIV, or LAIV of any valency. If using ccIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist. • Moderate or severe acute illness with or without fever
Influenza, recombinant injectable (RIV4) [Flublok Quadrivalent]	• Severe allergic reaction (e.g., anaphylaxis) to any RIV of any valency, or to any component[3] of RIV4	• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine • Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, ccIIV, or LAIV of any valency. If using RIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist. • Moderate or severe acute illness with or without fever
Influenza, live attenuated (LAIV4) [Flumist Quadrivalent]	• Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, ccIIV, RIV, or LAIV of any valency) • Severe allergic reaction (e.g., anaphylaxis) to any vaccine component[3] (excluding egg) • Children age 2–4 years with a history of asthma or wheezing • Anatomic or functional asplenia • Immunocompromised due to any cause including, but not limited to, medications and HIV infection • Close contacts or caregivers of severely immunosuppressed persons who require a protected environment • Pregnancy • Cochlear implant • Active communication between the cerebrospinal fluid (CSF) and the oropharynx, nasopharynx, nose, ear or any other cranial CSF leak • Children and adolescents receiving aspirin or salicylate-containing medications • Received influenza antiviral medications oseltamivir or zanamivir within the previous 48 hours, peramivir within the previous 5 days, or baloxavir within the previous 17 days	• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine • Asthma in persons age 5 years old or older • Persons with underlying medical conditions other than those listed under contraindications that might predispose to complications after wild-type influenza virus infection, e.g., chronic pulmonary, cardiovascular (except isolated hypertension), renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes mellitus) • Moderate or severe acute illness with or without fever

1. When a contraindication is present, a vaccine should **NOT** be administered. Kroger A, Bahta L, Hunter P. ACIP General Best Practice Guidelines for Immunization.
2. When a precaution is present, vaccination should generally be deferred but might be indicated if the benefit of protection from the vaccine outweighs the risk for an adverse reaction. Kroger A, Bahta L, Hunter P. ACIP General Best Practice Guidelines for Immunization.
3. Vaccination providers should check FDA-approved prescribing information for the most complete and updated information, including contraindications, warnings, and precautions. See Package inserts for U.S.-licensed vaccines.
4. See package inserts and FDA EUA fact sheets for a full list of vaccine ingredients. mRNA COVID-19 vaccines contain polyethylene glycol (PEG).

Appendix

Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, United States, 2024

Vaccines and other Immunizing Agents	Contraindicated or Not Recommended[1]	Precautions[2]
Dengue (DEN4CYD)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • Severe immunodeficiency (e.g., hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy or patients with HIV infection who are severely immunocompromised) • Lack of laboratory confirmation of a previous Dengue infection	• Pregnancy • HIV infection without evidence of severe immunosuppression • Moderate or severe acute illness with or without fever
Diphtheria, tetanus, pertussis (DTaP)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • For DTaP only: Encephalopathy (e.g., coma, decreased level of consciousness, prolonged seizures) not attributable to another identifiable cause within 7 days of administration of previous dose of DTP or DTaP	• Guillain-Barré syndrome (GBS) within 6 weeks after previous dose of tetanus-toxoid–containing vaccine • History of Arthus-type hypersensitivity reactions after a previous dose of diphtheria-toxoid–containing or tetanus-toxoid–containing vaccine; defer vaccination until at least 10 years have elapsed since the last tetanus-toxoid-containing vaccine • For DTaP only: Progressive neurologic disorder, including infantile spasms, uncontrolled epilepsy, progressive encephalopathy; defer DTaP until neurologic status clarified and stabilized • Moderate or severe acute illness with or without fever
Haemophilus influenzae type b (Hib)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • Less than age 6 weeks	• Moderate or severe acute illness with or without fever
Hepatitis A (HepA)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] including neomycin	• Moderate or severe acute illness with or without fever
Hepatitis B (HepB)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] including yeast • *Pregnancy: Heplisav-B and PreHevbrio are not recommended due to lack of safety data in pregnant persons. Use other hepatitis B vaccines if HepB is indicated[4].*	• Moderate or severe acute illness with or without fever
Hepatitis A-Hepatitis B vaccine (HepA-HepB) [Twinrix]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] including neomycin and yeast	• Moderate or severe acute illness with or without fever
Human papillomavirus (HPV)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • *Pregnancy: HPV vaccination not recommended.*	• Moderate or severe acute illness with or without fever
Measles, mumps, rubella (MMR) Measles, mumps, rubella, and varicella (MMRV)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • Severe immunodeficiency (e.g., hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy or patients with HIV infection who are severely immunocompromised) • Pregnancy • Family history of altered immunocompetence, unless verified clinically or by laboratory testing as immunocompetent	• Recent (≤11 months) receipt of antibody-containing blood product (specific interval depends on product) • History of thrombocytopenia or thrombocytopenic purpura • Need for tuberculin skin testing or interferon-gamma release assay (IGRA) testing • Moderate or severe acute illness with or without fever • For MMRV only: Personal or family (i.e., sibling or parent) history of seizures of any etiology
Meningococcal ACWY (MenACWY) MenACWY-CRM [Menveo] MenACWY-TT [MenQuadfi]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • For Men ACWY-CRM only: severe allergic reaction to any diphtheria toxoid—or CRM197—containing vaccine • For MenACWY-TT only: severe allergic reaction to a tetanus toxoid-containing vaccine	• For MenACWY-CRM only: Preterm birth if less than age 9 months • Moderate or severe acute illness with or without fever
Meningococcal B (MenB) MenB-4C [Bexsero] MenB-FHbp [Trumenba]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3]	• Pregnancy • For MenB-4C only: Latex sensitivity • Moderate or severe acute illness with or without fever
Meningococcal ABCWY (MenACWY-TT/MenB-FHbp) [Penbraya]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • Severe allergic reaction to a tetanus toxoid-containing vaccine	• Moderate or severe acute illness, with or without fever
Mpox [Jynneos]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3]	• Moderate or severe acute illness, with or without fever
Pneumococcal conjugate (PCV)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • Severe allergic reaction (e.g., anaphylaxis) to any diphtheria-toxoid-containing vaccine or its component[3]	• Moderate or severe acute illness with or without fever
Pneumococcal polysaccharide (PPSV23)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3]	• Moderate or severe acute illness with or without fever
Poliovirus vaccine, inactivated (IPV)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3]	• Pregnancy • Moderate or severe acute illness with or without fever
RSV monoclonal antibody (RSV-mAb)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[5]	• Moderate or severe acute illness with or without fever
Respiratory syncytial virus vaccine (RSV)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3]	• Moderate or severe acute illness with or without fever
Rotavirus (RV) RV1 [Rotarix] RV5 [RotaTeq]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • Severe combined immunodeficiency (SCID) • History of intussusception	• Altered immunocompetence other than SCID • Chronic gastrointestinal disease • RV1 only: Spina bifida or bladder exstrophy • Moderate or severe acute illness with or without fever
Tetanus, diphtheria, and acellular pertussis (Tdap) Tetanus, diphtheria (Td)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • For Tdap only: Encephalopathy (e.g., coma, decreased level of consciousness, prolonged seizures) not attributable to another identifiable cause within 7 days of administration of previous dose of DTP, DTaP, or Tdap	• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of tetanus-toxoid–containing vaccine • History of Arthus-type hypersensitivity reactions after a previous dose of diphtheria-toxoid–containing or tetanus-toxoid–containing vaccine; defer vaccination until at least 10 years have elapsed since the last tetanus-toxoid–containing vaccine • For Tdap only: Progressive or unstable neurological disorder, uncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized • Moderate or severe acute illness with or without fever
Varicella (VAR)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • Severe immunodeficiency (e.g., hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy or patients with HIV infection who are severely immunocompromised) • Pregnancy • Family history of altered immunocompetence, unless verified clinically or by laboratory testing as immunocompetent	• Recent (≤11 months) receipt of antibody-containing blood product (specific interval depends on product) • Receipt of specific antiviral drugs (acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination (avoid use of these antiviral drugs for 14 days after vaccination) • Use of aspirin or aspirin-containing products • Moderate or severe acute illness with or without fever • If using MMRV, see MMR/MMRV for additional precautions

1. When a contraindication is present, a vaccine should NOT be administered. Kroger A, Bahta L, Hunter P. ACIP General Best Practice Guidelines for Immunization. www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html
2. When a precaution is present, vaccination should generally be deferred but might be indicated if the benefit of protection from the vaccine outweighs the risk for an adverse reaction. Kroger A, Bahta L, Hunter P. ACIP General Best Practice Guidelines for Immunization. www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html
3. Vaccination providers should check FDA-approved prescribing information for the most complete and updated information, including contraindications, warnings, and precautions. Package inserts for U.S.-licensed vaccines are available at www.fda.gov/vaccines-blood-biologics/approved-products/vaccines-licensed-use-united-states.
4. For information on the pregnancy exposure registries for persons who were inadvertently vaccinated with Heplisav-B or PreHevbrio while pregnant, please visit heplisavbpregnancyregistry.com or www.prehevbrio.com/#safety.
5. Full prescribing information for BEYFORTUS (nirsevimab-alip) www.accessdata.fda.gov/drugsatfda_docs/label/2023/761328s000lbl.pdf

Addendum Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, United States, 2024

In addition to the recommendations presented in the previous sections of this immunization schedule, ACIP has approved the following recommendations by majority vote since October 26, 2023. The following recommendations have been adopted by the CDC Director and are now official. Links are provided if these recommendations have been published in *Morbidity and Mortality Weekly Report (MMWR)*.

Vaccines	Recommendations	Effective Date of Recommendation*
No new vaccines or vaccine recommendations to report		

*The effective date is the date when the CDC director adopted the recommendation and when the ACIP recommendation became official.

Sample Vaccine Policy Statement

Ready for you to adapt for your practice

Use the vaccine policy statement below as is, or modify it to reflect your practice's own strong statement of support for the vital role vaccination plays in safeguarding the health of children. Your practice's clearly expressed commitment to immunization can be powerfully persuasive with parents who are hesitant to have their child vaccinated because of scientifically invalid information they have encountered on the Internet or through the news media. This policy statement, originally developed by clinicians at All Star Pediatrics in Lionville, Pennsylvania, has been modified by the Immunization Action Coalition. All Star Pediatrics posts their policy in every exam room and gives it to parents at prenatal "meet and greet" and newborn clinic visits. As a result, parents new to All Star Pediatrics know exactly where their doctors stand on immunization, and the families of established patients feel supported in the choice they've made to immunize their children. All Star Pediatrics' policy statement was originally published as a letter to the editor in AAP News, *May 2008, by Bradley J. Dyer, MD, FAAP, and his colleagues at All Star Pediatrics.*

[Your Practice Name] Vaccine Policy Statement

We firmly believe in the effectiveness of vaccines to prevent serious illness and to save lives.

We firmly believe in the safety of our vaccines.

We firmly believe that all children and young adults should receive all of the recommended vaccines according to the schedule published by the Centers for Disease Control and Prevention and the American Academy of Pediatrics.

We firmly believe, based on all available literature, evidence, and current studies, that vaccines do not cause autism or other developmental disabilities. We firmly believe that thimerosal, a preservative that has been in vaccines for decades and remains in some vaccines, does not cause autism or other developmental disabilities.

We firmly believe that vaccinating children and young adults may be the single most important health-promoting intervention we perform as healthcare providers, and that you can perform as parents/caregivers. The recommended vaccines and the vaccine schedule are the results of years and years of scientific study and data gathering on millions of children by thousands of our brightest scientists and physicians.

This said, we recognize that there has always been and will likely always be controversy surrounding vaccination. Indeed, Benjamin Franklin, persuaded by his brother, was opposed to smallpox vaccine until scientific data convinced him otherwise. Tragically, he had delayed inoculating his favorite son Franky. The boy contracted smallpox and died at the age of 4, leaving Franklin with a lifetime of guilt and remorse. In his autobiography, Franklin wrote:

> "*In 1736, I lost one of my sons, a fine boy of four years old, by the smallpox…I long regretted bitterly, and still regret that I had not given it to him by inoculation. This I mention for the sake of parents who omit that operation, on the supposition that they should never forgive themselves if a child died under it, my example showing that the regret may be the same either way, and that, therefore, the safer should be chosen.*"

The vaccine campaign is truly a victim of its own success. It is precisely because vaccines are so effective at preventing illness that we are even discussing whether or not they should be given. Because of vaccines, many of you have never seen a child with polio, tetanus, whooping cough, bacterial meningitis, or even chickenpox, or known a friend or family member whose child died of one of these diseases. Such success can make us complacent or even lazy about vaccinating.

But such an attitude, if it becomes widespread, can only lead to tragic results. After publication of an unfounded accusation (later retracted) that MMR vaccine caused autism in 1998, many Europeans chose not to vaccinate their children. As a result of underimmunization, Europe experienced large outbreaks of measles, with several deaths from disease complications. In 2012, there were more than 48,000 cases of pertussis (whooping cough) in the United States, resulting in 22 deaths. Most victims were infants younger than six months of age. Many children who contracted the illness had parents

CONTINUED ON THE NEXT PAGE ▶

Adapted from All Star Pediatrics, Lionville, Pennsylvania

immunization action coalition
IAC
immunize.org

Saint Paul, Minnesota • 651-647-9009 • www.immunize.org • www.vaccineinformation.org

www.immunize.org/catg.d/p2067.pdf • Item #P2067 (8/16)

who made a conscious decision not to vaccinate. In 2015, there was a measles outbreak in Disneyland, California (probably started by an infected park visitor who had traveled from the Philippines). The outbreak eventually spread to 147 people and, again, many were too young to have been vaccinated.

When you don't vaccinate, you take a significant risk with your child's health and the health of others around them. By not vaccinating, you also take selfish advantage of thousands of others who do vaccinate their children, thereby decreasing the likelihood that your child will contract a vaccine-preventable disease. We feel that refusing to vaccinate is self-centered and unacceptable.

We are making you aware of these facts not to scare you or coerce you, but to emphasize the importance of vaccinating your child. We recognize that the choice may be a very emotional one for some parents. We will do everything we can to convince you that vaccinating according to the schedule is the right thing to do. However, **should you have doubts, please discuss these with your healthcare provider in advance of your visit**. In some cases, we may alter the schedule to accommodate parental concerns or reservations. **Please be advised, however, that delaying or "breaking up the vaccines" to give one or two at a time over two or more visits goes against expert recommendations, and can put your child at risk for serious illness (or even death) and goes against our medical advice as providers at [Your practice name here].** Such additional visits will require additional co-pays on your part. Please realize that you will also be required to sign a "Refusal to Vaccinate" acknowledgement in the event of lengthy delays.

Because we are committed to protecting the health of your children through vaccination, we require all of our patients to be vaccinated. Infants will receive all age-appropriate recommended vaccines by three months of age, with additional recommended vaccines as well as booster doses by two years of age. Children will receive additional recommended booster doses by the time they are seven years old, and will be given recommended 11–12-year preteen vaccinations by the time they are 13 years old. We will complete 16-year teen vaccinations before each child's 17th birthday. And, we will also give your child/teen an annual influenza vaccination unless they receive it at a school clinic or pharmacy.

Finally, if you should absolutely refuse to vaccinate your child despite all our efforts, we will ask you to find another healthcare provider who shares your views. We do not keep a list of such providers, nor would we recommend any such physician. Please recognize that by not vaccinating, you are putting your child at unnecessary risk for life-threatening illness and disability, and even death.

As medical professionals, we feel very strongly that vaccinating your child on schedule with currently available vaccines is absolutely the right thing to do to protect all children and young adults. Thank you for taking the time to read this policy. Please feel free to discuss any questions or concerns you may have about vaccines with any one of us.

All the healthcare providers of [Your practice name]
List names and signatures of healthcare providers, if desired.

You Must Provide Patients with Vaccine Information Statements (VISs) – It's Federal Law!

What are Vaccine Information Statements (VISs)?

Vaccine Information Statements (VISs) are documents produced by the Centers for Disease Control and Prevention (CDC), in consultation with panels of experts and parents, to properly inform vaccinees (or their parents/legal representatives) about the risks and benefits of each vaccine. VISs are not meant to replace interactions with healthcare providers, who should address any questions or concerns that the vaccinee (or parent/legal representative) may have.

Using VISs is legally required!

Federal law (under the National Childhood Vaccine Injury Act, NCIVA) requires a healthcare professional to provide a copy of the current VIS to an adult patient or to a child's parent/legal representative before vaccinating an adult or child with a dose of the following vaccines: diphtheria, tetanus, pertussis, measles, mumps, rubella, polio, hepatitis A, hepatitis B, *Haemophilus influenzae* type b (Hib), influenza, pneumococcal conjugate, meningococcal, rotavirus, human papillomavirus (HPV), or varicella (chickenpox).

Where to get VISs

All available VISs can be downloaded from the websites of Immunize.org at www.immunize.org/vaccines/vis/about-vis/ or CDC at www.cdc.gov/vaccines/hcp/vis/index.html. Ready-to-copy versions may also be available from your state or local health department.

Translations: You can find VISs in more than 40 languages on the Immunize.org website at www.immunize.org/vaccines/vis-translations/spanish/.

To obtain translations of VIS in languages other than English, go to www.immunize.org/vaccines/vis-translations/spanish/

According to CDC, the appropriate VIS must be given:

- Prior to the vaccination (and prior to each dose of a multi-dose series);
- Regardless of the age of the vaccinee;
- Regardless of whether the vaccine is given in a public or private healthcare setting.

Top 10 Facts About VISs

FACT 1 It's federal law! You must provide current* VISs to all your patients before vaccinating them.

Federal law requires that VISs must be used for patients of **ALL ages** when administering these vaccines:

- DTaP
- Td and Tdap
- hepatitis A
- hepatitis B
- Hib
- HPV
- MMR and MMRV
- meningococcal (MenACWY, MenB)
- pneumococcal conjugate
- polio
- rotavirus
- varicella (chickenpox)
- influenza (inactivated and live, intranasal)

For the vaccines not covered under NCVIA (i.e., adenovirus, anthrax, COVID-10, dengue, ebola, Japanese encephalitis, pneumococcal polysaccharide, rabies, RSV, smallpox/monkeypox, tick-borne encephaliatis, typhoid, yellow fever, and zoster), providers are not required by federal law to use VISs unless they have been purchased under CDC contract. However, CDC recommends that VISs be used whenever these vaccines are given. When administering a vaccine under conditions of an emergency use authorization (EUA), an EUA fact sheet must be used.

*Federal law allows up to 6 months for a new VIS to be used.

FACT 2 VISs can be given to patients in a variety of ways.

In most medical settings, VISs are provided to patients (or their parents/legal representatives) in paper form. However, VISs also may be provided using electronic media. Regardless of the format

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As of December 7, 2023, the most recent versions of the VISs are:

Adenovirus	1/8/20	**MMRV**	8/6/21
Anthrax	1/8/20	**Multi-vaccine**	7/24/23
COVID-19	10/19/23	**PCV**	5/12/23
Cholera	10/30/19	**PPSV23**	10/30/19
Dengue	12/17/21	**Polio**	8/6/21
DTaP	8/6/21	**Rabies**	6/2/22
Ebola	6/30/22	**RSV**	10/19/23
Hepatitis A	10/15/21	**Rotavirus**	10/15/21
Hepatitis B	5/12/23	**Smallpox/monkeypox**	11/14/22
Hib	8/6/21	**Td**	8/6/21
HPV	8/6/21	**Tdap**	8/6/21
Influenza	8/6/21	**Tick-borne encephalitis**	12/7/23
Japanese enceph	8/15/19	**Typhoid**	10/30/19
MenACWY	8/6/21	**Varicella**	8/6/21
MenB	8/6/21	**Yellow fever**	4/1/20
MMR	8/6/21	**Zoster**	2/4/22

used, the goal is to provide a current VIS just prior to vaccination. (For information on special circumstances involving vaccination of a child when a parent/legal representative is not available at the time of vaccination, see CDC's *VIS Frequently Asked Questions* at www.cdc.gov/vaccines/hcp/vis/about/vis-faqs.html.)

Prior to vaccination, VIS may be:

- Provided as a paper copy
- Offered on a permanent, laminated office copy
- Downloaded by the vaccinee (parent/legal representative) to a smartphone or other electronic device (VISs have been specially formatted for this purpose)
- Made available to be read before the office visit, e.g., by giving the patient or parent a copy to take home during a prior visit, or telling them how to download or view a copy from the Internet. These patients must still be offered a copy in one of the formats described previously to read during the immunization visit, as a reminder.

Regardless of the way the patient is given the VIS to read, providers must still offer a copy (which can be an electronic copy) of each appropriate VIS to take home following the vaccination. However, the vaccinee may decline.

FACT 3 VISs are required in both public and private sector healthcare settings.

Federal law requires the use of VISs in both public and private sector settings, regardless of the source of payment for the vaccine.

FACT 4 You must provide a current VIS *before* a vaccine is administered to the patient.

A VIS provides information about the disease and the vaccine and must be given to the patient **before** a vaccine is administered. It is also acceptable to hand out the VIS well before administering vaccines (e.g., at a prenatal visit or at birth for vaccines an infant will receive during infancy), as long as you still provide a current VIS right before administering vaccines.

FACT 5 You must provide a current VIS for *each* dose of vaccine you administer.

The most current VIS must be provided before **each dose** of vaccine is given, including vaccines given as a series of doses. For example, if 5 doses of a single vaccine are required (e.g., DTaP), the patient (parent/legal representative) must have the opportunity to read the information on the VIS before each dose is given.

FACT 6 You must provide VISs whenever you administer combination vaccines.

If you administer a combination vaccine that does not have a stand-alone VIS (e.g., Kinrix, Quadracel, Pediarix, Pentacel, Twinrix, Vaxelis) you should provide the patient with individual VISs for the component vaccines, or use the Multi-Vaccine VIS.

The Multi-Vaccine VIS may be used in place of the individual VISs for DTaP, Hib, hepatitis B, polio, and pneumococcal when two or more of these vaccines are administered during the same visit. It may be used for infants as well as children through 6 years of age. The Multi-Vaccine VIS should not be used for adolescents or adults.

FACT 7 VISs should be given in a language / format that the recipient can understand, whenever possible.

For patients who don't read or speak English, the law requires that providers ensure all patients (parent/legal representatives) receive a VIS, regardless of their ability to read English. To obtain VISs in more than 40 languages, visit the Immunize.org website at www.immunize.org/vis. Providers can supplement VISs with visual presentations or oral explanations as needed.

FACT 8 Federal law does not require signed consent in order for a person to be vaccinated.

Signed consent is not required by federal law for vaccination (although some states may require it).

FACT 9 To verify that a VIS was given, providers must record in the patient's medical record (or permanent office log or file) the following information:

- The edition date of the VIS (found on the back at the right bottom corner)
- The date the VIS is provided (i.e., the date of the visit when the vaccine is administered)

In addition, providers must record:

- The office address and name and title of the person who administers the vaccine
- The date the vaccine is administered
- The vaccine manufacturer and lot number

FACT 10 VISs should not be altered before giving them to patients, but you can add some information.

Providers should not change a VIS or write their own VISs. However, it is permissible to add a practice's name, address, and contact information to an existing VIS.

Additional resources on VISs and their use are available from the following organizations:

Immunize.org

- *VIS general information and translations in more than 40 languages:* www.immunize.org/vaccines/vis/about-vis/
- *Current Dates of Vaccine Information Statements:* www.immunize.org/catg.d/p2029.pdf

Centers for Disease Control and Prevention

- *VIS website:* www.cdc.gov/vaccines/hcp/vis
- *VIS Facts:* www.cdc.gov/vaccines/hcp/vis/about/facts-vis.html
- *VIS FAQs:* www.cdc.gov/vaccines/hcp/vis/about/vis-faqs.html

Key Vaccination Resources for Healthcare Professionals

With so many vaccination training materials available, it can be difficult for providers to determine which ones best suit their needs. The key resources listed below provide a strong foundation for building and sustaining vaccination skills. They also offer tools for staying up to date and references to address specific clinical situations.

The key resources shown below are divided into several helpful categories:

1. **Foundational content** with which every vaccinator should be familiar,
2. **Supplemental content** useful after completing foundational training,
3. **Additional tools** to help providers grow in vaccination expertise, and
4. **Major organization websites** offering additional vaccination resources.

Acronym list appears at end of document

1 Foundational content for all vaccinators

RESOURCE, DESCRIPTION, HYPERLINK	SOURCE	CONTENT
ACIP's *General Best Practice Guidelines for Immunization* (revised regularly) Previously known as *General Recommendations*. Components include: Timing and spacing of vaccines, contraindications and precautions, preventing and managing adverse events, vaccine administration, storage and handling, altered immunocompetence, vaccination records, and more. (HTML or PDF, 190+ pages) ▸ www.cdc.gov/vaccines/hcp/acip-recs/general-recs ▸ UPDATES: www.cdc.gov/vaccines/hcp/acip-recs/general-recs/general-recs-errata.html	CDC	Scheduling Storage Screening Technique
U.S. Immunization Schedules (revised annually) U.S. immunization schedules for children/adolescents and adults in various formats, as well as easy-to-read versions for the public. Corresponding app available for iOS or Android. (PDF) ▸ www.cdc.gov/vaccines/schedules/hcp/imz/child-adolescent.html ▸ www.cdc.gov/vaccines/schedules/hcp/imz/adult.html	CDC	Scheduling
CDC's Recommended and Minimum Ages and Intervals Between Vaccine Doses Scroll down to Table 3.2. Easy-to-read table showing ages and intervals. (HTML or PDF) ▸ www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html#t-02	CDC	Scheduling
CDC's Vaccine Information Statements (VISs) and translations into 45+ languages Immunize.org's VIS main page includes links to each VIS in English, plus translations in up to 45+ languages, chart of current VIS dates. (PDF) ▸ www.cdc.gov/vaccines/hcp/vis/index.html ▸ www.immunize.org/vis	CDC Immunize.org	Dialogue

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Immunize.org Handouts: Administering Vaccines Gateway to practical, user-friendly educational materials for staff: free print-ready documents covering site selection, needle length, skills checklist, and more. (PDF) ▶ www.immunize.org/handouts/administering-vaccines.asp	Immunize.org	Technique
CDC's Vaccine Administration Main Page Offers step-by-step guidance on administering vaccines, reviewing patient histories, documentation, plus self-paced vaccine-administration course (CE credit). (variously PDF or HTML, plus video) ▶ www.cdc.gov/vaccines/hcp/admin/admin-protocols.html. Instructional videos appear in the Resource Library section at the bottom of this web page.	CDC	Technique
Immunize.org: Educational Materials for Healthcare Professional and the Public Main web pages lead to dozens of categories of Immunize.org's educational materials, including vaccination schedules, handouts for parents, screening checklists, standing orders, and resources on vaccine storage and handling, adolescent and adult vaccination topics, improving vaccine confidence, and managing fever/pain. (PDF) ▶ www.immunize.org/handouts	Immunize.org	Vaccines Diseases Scheduling Technique Storage
CDC's *Vaccine Storage and Handling Toolkit* Best practices for managing inventory and transport; storing and preparing; monitoring temperature; maintaining storage and temperature-monitoring equipment; preparing for emergency situations; standard operating procedures for routine and emergency management. (PDF, 70 pages) ▶ www.cdc.gov/vaccines/hcp/admin/storage/toolkit/index.html	CDC	Storage
***IZ Express*, free email news service** (published weekly) Provides current information you need to know. Stay up to date on product approvals, recommendations, revised VISs and translations, new resources from Immunize.org and other organizations, new publications, conferences, and CE opportunities. Subscribe at www.immunize.org/subscribe. (Email and HTML) ▶ www.immunize.org/express	Immunize.org	News
Ask the Experts – Immunize.org's experienced clinical experts answer vaccine questions More than 1,200 practical answers to common questions in dozens of categories, covering vaccine administration, precautions and contraindications, scheduling vaccines, storage and handling, vaccine recommendations, and vaccine safety. (HTML) ▶ www.immunize.org/askexperts	Immunize.org	Vaccines Diseases Scheduling Storage Screening
State, City, Jurisdiction, or IHS Immunization Program Contacts Immunization Program Websites: www.immunize.org/states Program Coordinators: www.immunize.org/coordinators Immunization Information Systems (IIS) and vaccination records: www.cdc.gov/vaccines/programs/iis/contacts-locate-records.html	Immunize.org	Advice

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CDC contact for non-urgent vaccination questions ▸ nipinfo@cdc.gov	CDC	Advice

2 Important supplemental content, rationale, and applied clinical guidance (valuable after foundational training)

RESOURCE, DESCRIPTION, HYPERLINK	SOURCE	CONTENT
ACIP Recommendations main page Links to dozens of current ACIP recommendations, sortable by vaccine or date, as well as archived recommendations. (HTML and PDF) ▸ www.cdc.gov/vaccines/hcp/acip-recs/index.html ▸ www.immunize.org/acip	CDC Immunize.org	Vaccines Diseases Screening
Immunize.org's Clinic Tools, Helpful Resources for Your Immunization Practice Seven categories covering administering vaccines, adult vaccination, documentation, scheduling, screening for contraindications, storage and handling, vaccine recommendations, and more. (PDF) ▸ www.immunize.org/clinic	Immunize.org	Vaccines Scheduling Storage Technique Storage
Immunization Techniques: Best Practices with Infants, Children, and Adults (2010) California Department of Public Health 25-minute training video on skills for vaccine administration. Covers injectable, oral, and nasal vaccines; selecting, preparing, and administering vaccines; patient comfort, staff safety and training; demonstrations. (DVD) ▸ www.youtube.com/watch?v=WsZ6NEijlfI&feature=youtu.be ▸ www.immunize.org/dvd ($17 for one, volume discounts available)	EZIZ Immunize.org	Technique
CHOP VEC's Vaccine- and Vaccine Safety-Related Q&A Sheets for Parents Links to dozens of Q&A sheets about vaccines and vaccine safety (e.g., vaccine ingredients, autism, "too many" vaccines). Available in English and Spanish. (PDF) ▸ www.chop.edu/centers-programs/vaccine-education-center/resources/vaccine-and-vaccine-safety-related-qa-sheets	CHOP VEC	Dialogue
CDC's *You Call the Shots* web-based training course Dozens of modules that discuss diseases and vaccine recommendations. Each module provides self-test questions, resource materials, glossary, and CE credit. (Online course – slide-based, interactive, no audio) ▸ www.cdc.gov/vaccines/ed/youcalltheshots.html	CDC	Vaccines Diseases Technique Storage
CDC's Vaccines and Immunizations for Healthcare Professionals home page Gateway to clinical resources, administration tools, training, patient education, and more. (variously PDF or HTML, plus videos and slides) ▸ www.cdc.gov/vaccines/hcp/index.html	CDC	Vaccines Diseases Dialogue Screening

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CDC's *Epidemiology and Prevention of Vaccine-Preventable Diseases* – "The Pink Book" Info on each routine vaccine and diseases they prevent; chapters on vaccination principles, general recommendations, safety, storage and handling, and administration. (Book: HTML or PDF, 500+ pages, dozens of chapters, free online; or $50 plus shipping for soft-bound edition. Webinar series available online in 19 segments) ▸ www.cdc.gov/vaccines/pubs/pinkbook/index.html ▸ www.cdc.gov/vaccines/ed/webinar-epv/index.html	CDC	Vaccines Diseases Scheduling Technique Storage
Immunize.org's *Vaccinating Adults: A Step-By-Step Guide* (October 2017) Downloadable guidebook on adult immunization, providing how-to information to help providers enhance or implement adult immunization services in any clinical setting. (Book: PDF, 140+ pages) ▸ www.immunize.org/guide	Immunize.org	Workflow Screening Technique Storage

3 References and additional ways to grow in vaccine expertise

RESOURCE, DESCRIPTION, HYPERLINK	SOURCE	CONTENT
Package Inserts (i.e., prescribing information) for each FDA-licensed vaccine Links to each FDA-licensed vaccine's current prescribing information, either at manufacturer's website or FDA website. (PDF, dozens of product groups) ▸ www.immunize.org/packageinserts	Immunize.org	Reference
CDC Immunization Education and Training Offerings Various archived webcasts and other self-paced learning modules, some with CE credit. (variously PDF or HTML, plus video and slides) ▸ www.cdc.gov/vaccines/ed/index.html	CDC	Training
Provider Resources for Vaccine Conversations with Parents Materials to help assess parents' needs, identify the role they want to play in making decisions for their child's health, and then communicate in ways that meet their needs. (variously PDF or HTML) ▸ www.cdc.gov/vaccines/hcp/conversations/index.html	CDC AAP AAFP	Dialogue
EZIZ's Job Aids for Vaccine Storage and Handling from California VFC program Dozens of products, info on vaccine management, refrigerator and freezer setup, monitoring temperatures, transporting vaccines, and inventory. (PDF) ▸ eziz.org/resources/storage-handling-job-aids	EZIZ	Storage
EZIZ's Job Aids for Vaccine Administration from California VFC program Dozens of products, many helpful 1-page charts on preparing vaccines, avoiding mix-ups, and more. (PDF) ▸ eziz.org/resources/vaccine-admin-job-aids	EZIZ	Technique

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***The Vaccine Handbook: A Practical Guide for Clinicians* – "The Purple Book" by Gary S. Marshall, MD)** Comprehensive reference book on vaccines and vaccination, including discussion of how to address concerns of parents and patients. (To purchase, go to pcibooks.com/books/view/49 [$39.95]) ▸ App at Apple App Store or Google Play Store (free), registration required	Private	Diseases Dialogue Scheduling Screening
CHOP VEC's *Vaccine Update for Healthcare Professionals* newsletter (monthly) Monthly newsletter featuring articles, roundup of news and journal articles, and information about new resources. (HTML) ▸ www.chop.edu/centers-programs/vaccine-update/newsletter	CHOP VEC	News

4 Organization websites for further guidance and resources

AAFP
www.aafp.org/family-physician/patient-care/prevention-wellness/immunizations-vaccines.html

AAP
www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/immunizations/Pages/Immunizations-home.aspx

ACOG
www.acog.org/programs/immunization-for-women

ACP
www.acponline.org/clinical-information/clinical-resources-products/adult-immunization

AIM
www.immunizationmanagers.org

APHA
www.pharmacist.com/immunization-center

CHOP VEC
www.chop.edu/centers-programs/vaccine-education-center

DoD Continuous Quality Immunization Improvement Process
www.health.mil/Military-Health-Topics/Health-Readiness/Immunization-Healthcare

Immunize.org
www.immunize.org

National Network of Immunization Coalitions
www.immunizationcoalitions.org

NAIIS, The Summit
www.izsummitpartners.org

NFID
www.nfid.org/immunization

VYF
www.vaccinateyourfamily.org

ACRONYMS

AAFP American Academy of Family Physicians
AAP American Academy of Pediatrics
ACIP Advisory Committee on Immunization Practices
ACOG American College of Obstetricians and Gynecologists
ACP American College of Physicians
AIM Association of Immunization Managers
APhA American Pharmacists Association
CDC Centers for Disease Control and Prevention
CE Continuing education
CHOP VEC Children's Hospital of Philadelphia Vaccine Education Center
DoD Department of Defense
EZIZ EZ immunization services, California Department of Public Health (CDPH) Immunization Branch
IHS Indian Health Service
NAIIS National Adult and Influenza Immunization Summit
NFID National Foundation for Infectious Diseases
VYF Vaccinate Your Family

Supplies You May Need at an Immunization Clinic[1]

A. Vaccines you intend to give[2]

- For a list of vaccines commonly given in the U.S., refer to www.cdc.gov/vaccines/vpd/vaccines-list.html. Select the vaccines you need based on the age of the patients you expect at your clinic.
- For instructions on how to pack and transport vaccines, go to www.cdc.gov/vaccines/hcp/admin/storage/toolkit/index.html.

B. Patient Resources

Vaccine Information Statements (VISs)[2]

Most current version associated with each vaccine used in the clinic *(available in English and over 40 languages at www.immunize.org/vis)*

After the shots . . . what to do if your child has discomfort

Includes information on medicines to reduce pain and fever *(available at www.immunize.org/catg.d/p4015.pdf)*

C. Routine Clinic Supplies[2]

- ☐ Appropriate storage units and monitoring equipment to maintain vaccine cold chain (see www.cdc.gov/vaccines/hcp/admin/storage/toolkit/index.html)
- ☐ Needle disposal "sharps" containers
- ☐ 1 mL, 3 mL syringes
- ☐ 22 and 25g needles
  - ☐ ⅝"; ☐ 1"; ☐ 1¼"; ☐ 1½"; ☐ 2" (see *Administering Vaccines: Dose, Route, Site, and Needle Size* at www.immunize.org/catg.d/p3085.pdf)
- ☐ Medical gloves (optional for administration of vaccine)
- ☐ Alcohol wipes
- ☐ Spot band aids ☐ Rectangular band aids
- ☐ 1" sterile gauze pads or cotton balls
- ☐ Temperature monitoring devices (preferably continuous digital data loggers) for all vaccine storage units
- ☐ Emergency transport container
- ☐ Paper towels
- ☐ Hand sanitizer
- ☐ Sanitizing products for surfaces
- ☐ Face masks or respirators if protection from respiratory viruses is desired

D. Medical Emergency Supplies[2]

- ☐ *Medical Management of Vaccine Reactions in Children and Teens in a Community Setting* www.immunize.org/catg.d/p3082a.pdf
- ☐ *Medical Management of Vaccine Reactions in Adults in a Community Setting* www.immunize.org/catg.d/p3082.pdf

First-line medication

- ☐ Epinephrine 1 mg/mL solution (1:1000 concentration) in autoinjector or various vials or ampules. At least three epinephrine doses should be available onsite.

Other medications: H_1 antihistamines are for itching and hives only and not for managing anaphylaxis. Oral antihistamines should not be administered if airway is compromised.

- ☐ Diphenhydramine (e.g., Benadryl) oral (12.5 mg/5 mL liquid, 25 or 50 mg capsules/tablets) or injectable (50 mg/mL solution)

Other supplies for emergencies:

- ☐ Syringes (1 and 3 mL) and needles (22 and 25g, 1", 1½", and 2") for epinephrine or diphenhydramine
- ☐ Alcohol wipes
- ☐ Stethoscope
- ☐ Blood pressure measuring device (with a variety of cuff sizes as needed)
- ☐ Light with extra batteries (for examination of mouth and throat)
- ☐ A timing device, such as wristwatch, for measuring pulse
- ☐ Cell phone or access to onsite phone
- ☐ CPR rescue mask with one-way valve
- ☐ Oxygen (if available)

E. Office Supplies

- ☐ Calendar
- ☐ Pens
- ☐ File folders
- ☐ Scissors
- ☐ Pad of paper
- ☐ Stapler/staples
- ☐ Tape
- ☐ Paper clips
- ☐ Sticky notes
- ☐ Wastebaskets/trash bags

F. Documents and Forms

- ☐ Current immunization schedules for children, adolescents, and adults www.immunize.org/cdc/schedules
  - ☐ *Summary of Recommendations for Child/Teen Immunization* www.immunize.org/catg.d/p2010.pdf
  - ☐ *Summary of Recommendations for Adult Immunization* www.immunize.org/catg.d/p2011.pdf
- ☐ Vaccine standing orders and protocols www.immunize.org/standing-orders
- ☐ Internet access or hotspot to IIS or EMR to access/update immunization records
- ☐ Immunization record cards for patients (pediatric and adult) shop.immunize.org/collections/immunization-record-cards
- ☐ Vaccination administration record sheets (e.g., medical records, if needed); for children and teens: www.immunize.org/catg.d/p2022.pdf; for adults: www.immunize.org/catg.d/p2023.pdf
- ☐ *Screening Checklist for Contraindications to Vaccines for Children and Teens* www.immunize.org/catg.d/p4060.pdf
- ☐ *Screening Checklist for Contraindications to Vaccines for Adults* www.immunize.org/catg.d/p4065.pdf
- ☐ Vaccine Adverse Events Reporting System (VAERS) information https://vaers.hhs.gov
- ☐ Temperature logs and other materials to help manage vaccine storage and handling www.immunize.org/handouts/vaccine-storage-handling.asp
- ☐ Billing forms, if needed
- ☐ Laptop computer, tablet, or smartphone
- ☐ Release of information forms
- ☐ Schedules, including dates and times, of future immunization clinics

1. See also "Tools to Assist Satellite, Temporary, and Off-Site Vaccination Clinics" at www.izsummitpartners.org/naiis-workgroups/influenza-workgroup/off-site-clinic-resources/
2. Always check the expiration dates of all vaccines, medications, and medical supplies while packing and before using! In addition, be sure to check that you have the most current versions of the VISs. For a listing of current dates of VISs, visit www.immunize.org/vis.

Skills Checklist for Vaccine Administration

This "Skills Checklist" is an assessment tool for healthcare staff who administer immunizations. To complete it, staff should review the competency areas below and the clinical skills, techniques and procedures outlined for each area.

Staff: Enter a score in the **Self-Assessment** column. If "Needs to Improve" is checked, it indicates further study, practice, or change is needed. When "Meets or Exceeds" is checked, it indicates belief that performance is at the expected level of competence, or higher.

Supervisors: Use the "Skills Checklist" to clarify responsibilities and expectations for staff who administer vaccines. When you use it to assist with performance reviews, give staff the opportunity to score themselves in advance. Next, observe their performance as they administer vaccines to several patients, and score in the **Supervisor Review** columns. If improvement is needed, meet with them to develop a "Plan of Action" (see bottom of page 3) to help them achieve the level of competence you expect; circle desired actions or write in others.

CDC's Web-based Training Courses

- *You Call the Shots:* updated regularly to include the latest guidelines and recommendations in vaccine practice; available at www.cdc.gov/vaccines/ed/youcalltheshots.html.
- Vaccine Administration eLearn: available at www.cdc.gov/vaccines/hcp/admin/resource-library.html

AREA	CLINICAL SKILLS, TECHNIQUES, AND PROCEDURES	SELF ASSESSMENT		SUPERVISOR REVIEW		PLAN OF ACTION
		NEEDS TO IMPROVE	MEETS OR EXCEEDS	NEEDS TO IMPROVE	MEETS OR EXCEEDS	
Patient/Parent Education	1. Welcomes patient/family and establishes rapport.					
	2. Explains what vaccines will be given and which type(s) of injection(s) will be done.					
	3. Answers questions and accommodates language or literacy barriers and special needs of patient/parents to help make them feel comfortable and informed about the procedure.					
	4. Verifies patient/parents received Vaccine Information Statements (VISs) and appropriate materials for indicated vaccines and has had time to read them and ask questions.					
	5. Screens for contraindications and precautions (if within employee's scope of work).					
	6. Reviews comfort measures and aftercare instructions with patient/parents, and invites questions.					
Medical & Office Protocols	1. Identifies the location of protocols for providing immunizations, infection prevention, emergency situations, and for reporting adverse events to the Vaccine Adverse Event Reporting system (VAERS).					
	2, Identifies the location of epinephrine, its administration technique, and clinical situations where its use would be indicated.					
	3. Maintains up-to-date CPR certification.					
	4. Understands the need to report any needlestick injury and to maintain a sharps injury log.					
	5. Demonstrates knowledge of proper vaccine handling (e.g., maintains and monitors vaccine at recommended temperature and protects from light).					

Adapted from California Department of Public Health, Immunization Branch

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AREA	CLINICAL SKILLS, TECHNIQUES, AND PROCEDURES	SELF ASSESSMENT		SUPERVISOR REVIEW		PLAN OF ACTION
		NEEDS TO IMPROVE	MEETS OR EXCEEDS	NEEDS TO IMPROVE	MEETS OR EXCEEDS	
Vaccine Preparation	1. Performs proper hand hygiene prior to preparing vaccine.					
	2. When removing vaccine from the refrigerator or freezer, looks at the storage unit's temperature to make sure it is in proper range.					
	3. Checks expiration date and beyond-use date, if applicable, for both vaccine and diluent if needed. Double-checks vial label and contents prior to drawing up.					
	4. Prepares and draws up vaccines in a designated clean medication area that is not adjacent to areas where potentially contaminated items are placed.					
	5. Selects the correct needle size based on route, site, injection technique, patient age. Weight and gender are considered when administering IM injections to adults.					
	6. Maintains aseptic technique throughout, including cleaning the rubber septum (stopper) of the vial with sterile alcohol prior to piercing it.					
	7. Prepares vaccine according to manufacturer instructions. If directed by manufacturer's instructions, writes beyond use date on vial label. Draws up correct dose of vaccine. Rechecks vial label.					
	8. Prepares a new sterile syringe and sterile needle for each injection. Checks the expiration date on the equipment (syringes and needles) if present.					
	9. Labels each filled syringe or uses labeled tray to keep them identified.					
Administering Vaccinations	1. Verifies identity of patient. Rechecks the provider's order or instructions against the vial and the prepared syringes.					
	2, Utilizes proper hand hygiene with every patient and, if it is office policy, puts on disposable gloves. (If using gloves, changes gloves for every patient.)					
	3. Demonstrates knowledge of the appropriate route for each vaccine.					
	4. Positions patient safely and age appropriately.					
	5. Correctly identifies the injection site (e.g., deltoid, vastus lateralis, fatty tissue over triceps).					
	6. Locates anatomic landmarks specific for IM or Subcut injections.					
	7. Preps the site with an alcohol wipe, using a circular motion from the center to a 2" to 3" circle. Allows alcohol to dry.					

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AREA	CLINICAL SKILLS, TECHNIQUES, AND PROCEDURES	SELF ASSESSMENT		SUPERVISOR REVIEW		PLAN OF ACTION
		NEEDS TO IMPROVE	MEETS OR EXCEEDS	NEEDS TO IMPROVE	MEETS OR EXCEEDS	
Administering Vaccinations (continued)	8. Controls the limb with the non-dominant hand; holds the needle an inch from the skin and inserts it quickly at the appropriate angle (90° for IM or 45° for Subcut).					
	9. Injects vaccine using steady pressure; withdraws needle at angle of insertion.					
	10. Applies gentle pressure to injection site for several seconds (using, e.g., gauze pad, bandaid).					
	11. Uses strategies to reduce anxiety and pain associated with injections.					
	12. Properly disposes of needle and syringe in "sharps" container.					
	13. Properly disposes of vaccine vials.					
Records Procedures	1. Fully documents each vaccination in patient chart: date, lot number, manufacturer, site, VIS date, name/initials.					
	2, If applicable, demonstrates ability to use state/local immunization registry or computer to call up patient record, assess what is due today, and update the electronic immunization history.					
	3. Asks for and updates patient's vaccination record and reminds them to bring it to each visit.					

Plan of Action

Circle desired next steps and write in the agreed deadline for completion, as well as date for the follow-up performance review.

a. Watch video on immunization techniques and review CDC's Vaccine Administration eLearn, available at www.cdc.gov/vaccines/hcp/admin/resource-library.html.
b. Review manuals, textbooks, wall charts, or other guides (e.g., Key Vaccination Resources for Healthcare Professionals at www.immunize.org/catg.d/p2005.pdf)
c. Review package inserts.
d. Review vaccine storage and handling guide-
lines or video.
e. Observe other staff with patients.
f. Practice injections.
g. Read Vaccine Information Statements.
h. Be mentored by someone who has demonstrated appropriate immunization skills.
i. Role play (with other staff) interactions with parents and patients, including age appropriate comfort measures. Review resources on vaccination anxiety (www.immunize.org/clinical/vaccine-confidence/topic/improving-vaccine-experience/).
j. Attend a skills training or other appropriate courses/training.
k. Attend healthcare customer satisfaction or cultural competency training.
l. Renew CPR certification.

Other _____

File the Skills Checklist in the employee's personnel folder.

PLAN OF ACTION DEADLINE

DATE OF NEXT PERFORMANCE REVIEW

EMPLOYEE SIGNATURE DATE

SUPERVISOR SIGNATURE DATE

Suggestions to Improve Your Immunization Services

Looking for clear-cut ways to improve your practice's efficiency in administering vaccines and increase your vaccination coverage rates?

Here are the basics:

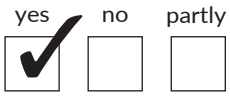
- Keep staff up to date with current recommendations.
- Maintain complete, up-to-date patient records.
- Maintain and protect your vaccine supply.
- Help your patients anticipate their own vaccine needs, and those of their family members as well.
- Avoid "missed opportunities" to vaccinate.
- Maintain administration best practices.
- Improve access to your vaccination services.
- Communicate with patients and parents.
- Evaluate and improve your practice's performance.

Use the handy checklist that follows to help you implement or reinforce these suggestions. Mark areas that "need attention" or are "satisfactory"… and congratulate yourself for those items that are ready!

Yes = We already do this.

No = We don't like this idea, or it couldn't work in our practice setting.

Partly = We do some of this (or do it sometimes); we will consider it.



Keep staff up to date with current recommendations

		yes	no	partly
1	We post the current, official CDC U.S. immunization schedules (or the official schedule of our medical association or state health department) in each exam room.	☐	☐	☐
2	We use the official "catch-up" schedule for bringing children and adolescents up to date on their vaccinations when they have fallen behind.	☐	☐	☐
3	We understand and implement the routine vaccination schedule, as well as special vaccination recommendations for high-risk patients(e.g., certain groups who need hepatitis A, meningococcal, pneumococcal vaccines).	☐	☐	☐
4	We routinely receive, read, and share updates on vaccines and other immunization issues from government agencies (e.g., CDC), our state or local health department, Immunize.org, or other trusted organizations.	☐	☐	☐

Maintain complete, up-to-date patient records

		yes	no	partly
1	We participate in our local/regional/state immunization registry (Immunization Information System or "IIS").	☐	☐	☐
2	When scheduling appointments, we remind patients/parents to bring along their (or their child's) record of immunizations, and we confirm the address and phone number in case we need to contact them.	☐	☐	☐
3	We maintain a comprehensive immunization record in a highly visible location in each patient's chart or electronic medical record.	☐	☐	☐
4	EACH TIME a patient comes in, we ask if they have been vaccinated elsewhere. If yes, we check the IIS (registry) or request written documentation. We record confirmed vaccination dates and places in the medical record. If we have no vaccinations recorded and we cannot obtain records via phone or IIS, we give the vaccinations we determine are indicated, based on the history provided by the patient/parent. We have the patient/parent sign a release so we can obtain vaccination records from other providers. If no other records can be found, we treat the patient as if unvaccinated.	☐	☐	☐
5	During each patient visit, we document in the patient's chart that the vaccination status was reviewed. If a recommended vaccine was not administered, we document the reason why.	☐	☐	☐

CONTINUED ON THE NEXT PAGE ▶

Maintain and protect your vaccine supply

	yes	no	partly
1 We designate a vaccine coordinator and backup coordinator to oversee vaccine storage and handling activities.	☐	☐	☐
2 We provide vaccine storage and handling training to each new staff member, as well as updates to *all* staff whenever recommendations are changed or a new vaccine product is introduced.	☐	☐	☐
3 We follow the guidance provided in CDC's "Vaccine Storage and Handling Toolkit."	☐	☐	☐

Help your patients anticipate their need for vaccinations

	yes	no	partly
1 We train all nursing and office staff (e.g., receptionists, schedulers) on the minimum ages and intervals permissible between vaccinations and how to determine valid and invalid contraindications to vaccinations. We post this information in places available to all staff.	☐	☐	☐
2 Before seeing the clinician (e.g., while in the waiting room), we ask patients/parents to complete a simple screening checklist for vaccine contraindications to check if the vaccinations they need can be given safely on the day of their visit.	☐	☐	☐
3 We have a staff member complete a vaccination assessment and give the appropriate Vaccine Information Statements (VISs) to the patient/parent in a language they can read, when a translation is needed and available.	☐	☐	☐

Avoid "missed opportunities" to vaccinate

	yes	no	partly
1 We have a designated vaccination "champion" to keep all clinic staff current on recommendations and effective strategies to avoid missed opportunities to vaccinate.	☐	☐	☐
2 We train our staff to administer multiple vaccinations to patients who are due for multiple vaccinations.	☐	☐	☐
3 Before patient visits, we review the vaccination record for each patient and flag charts of those who are due or overdue for vaccination(s).	☐	☐	☐
4 When feasible, we check the vaccination status of other family members (siblings, etc.) who have accompanied the patient. If they are behind on their vaccinations, we vaccinate them as well.	☐	☐	☐

Maintain administration best practices

	yes	no	partly
1 We adhere to the "Rights" of medication administration by ensuring we have the: ***Right*** patient; ***Right*** vaccine and diluent (when applicable); ***Right*** time (including the correct age and interval, as well as before the product expiration/time/date); ***Right*** route (including the correct needle gauge and length and technique); ***Right*** administration site; and ***Right*** documentation.	☐	☐	☐
2 We screen for contraindications and precautions prior to administering any vaccine(s).	☐	☐	☐
3 We discuss vaccine benefits and risks (and vaccine-preventable disease risks) using VISs and other reliable resources.	☐	☐	☐
4 We follow best practices with respect to patient positioning, including comforting restraint for children and sitting for adults.	☐	☐	☐
5 We follow the manufacturer's vaccine-specific guidelines for vaccine preparation and administration.	☐	☐	☐
6 We maintain proper hand hygiene before vaccine preparation, between patients, and any other time hands need to be cleaned. Although gloves are not required when administering vaccines, if gloves are worn, we change them and follow proper hand hygiene between patients.	☐	☐	☐
7 We incorporate strategies to prevent administration errors as described in CDC's *Pink Book*.	☐	☐	☐
8 We put a system in place to ensure vaccines are ordered in a timely manner and are consistently available. We rotate the inventory so packages with shortest expiry dates are in front.	☐	☐	☐

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Improve access to your vaccination services

		yes	no	partly
1	We provide vaccination services during some evening and/or weekend hours.	☐	☐	☐
2	We implement standing orders to allow appropriate professional staff to independently screen patients and administer recommended vaccines.	☐	☐	☐
3	We allow patients to walk in during office hours for a "nurse only" visit and get vaccinated.	☐	☐	☐
4	If patients miss visits and can't be rescheduled quickly, we reschedule them in one to two weeks for a "shots only" visit.	☐	☐	☐

Communicating with patients and parents

		yes	no	partly
1	We provide patients/parents a simple schedule of recommended vaccinations in a language they can read.	☐	☐	☐
2	We have a policy for our practice that states the importance we place on their child's vaccinations, and we give a copy of it to all new patients. (Note: You can find a policy statement template on Immunize.org's website at www.immunize.org/catg.d/p2067.pdf.)	☐	☐	☐
3	We provide the patient with documentation (e.g., record card, print-out) of the vaccinations received at our office each time we administer a vaccine.	☐	☐	☐
4	We give patients/parents an information sheet about how to treat pain and fever after vaccinations (e.g., www.immunize.org/catg.d/P4015.pdf).	☐	☐	☐
5	We provide reliable educational resources (in a language they can read) to patients/parents who have questions or concerns about vaccine safety or who want more vaccine information.	☐	☐	☐
6	If patients/parents refuse a vaccine, we request that they sign a declination form (e.g., www.immunize.org/catg.d/p4059.pdf) and we discuss the value of vaccination at future visits.	☐	☐	☐
7	When giving vaccinations, we inform the patient/parent when the next appointment for vaccinations is due. We try to schedule the visit before they leave the office. We put this information in an electronic recall system or manual tickler.	☐	☐	☐
8	We send a reminder (e.g., by phone call, postcard, email, or text) when vaccinations are due, and we recall patients (e.g., using computerized tracking or a simple tickler system) who are overdue.	☐	☐	☐

Evaluate and improve your practice's performance

		yes	no	partly
1	We routinely assess vaccination rates of our patient population. We know that we can contact our state or local health department for assistance in performing the assessment. We share the results with all staff, and we use this information to develop strategies to improve vaccination rates.	☐	☐	☐
2	Because we provide services to children/adolescents (if applicable), we enroll in the Vaccines for Children (VFC) program so that we can provide free vaccine to uninsured and other eligible children age birth through 18 years.	☐	☐	☐

REFERENCES

Clinic Tools: Administering Vaccines: Clinic Resources (www.immunize.org/clinic/administering-vaccines.asp)

Epidemiology and Prevention of Vaccine-Preventable Diseases (www.cdc.gov/vaccines/pubs/pinkbook/index.html)

Injection Safety: Information for Providers (www.cdc.gov/injectionsafety/providers.html)

National Vaccine Injury Compensation Program (www.hrsa.gov/vaccinecompensation/index.html)

Vaccine Recommendations and Guidelines of ACIP: Vaccine Administration (www.cdc.gov/vaccines/hcp/acip-recs/general-recs/administration.html)

Vaccine Adverse Event Reporting System (vaers.hhs.gov/index)

Vaccine Storage and Handling Toolkit (www.cdc.gov/vaccines/hcp/admin/storage/toolkit/index.html)

Vaccines and Immunizations (www.cdc.gov/vaccines/index.html)

For information on how to avoid or respond to errors in COVID-19 vaccine administration, see *COVID-19 Vaccine Administration Errors and Deviations* at www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us-appendix.html#appendix-c

Don't Be Guilty of These **Preventable** Errors in Vaccine Administration!

*Is your healthcare setting making any of these frequently reported errors in administering vaccines? Although some of these errors are much more serious than others, none of them should occur. Be sure those who administer vaccines are not making any of these **preventable** errors in vaccine administration.*

*Note: Information about **reporting** vaccine administration errors is found at the end of this article.*

ERROR: Not using a screening checklist to identify patients' contraindications and precautions to vaccination

How to Avoid This Error: Always use a reliable screening questionnaire to consistently avoid either 1) giving a vaccine to a patient for whom it is contraindicated (a serious, potentially life-threatening situation), or 2) missing opportunities to vaccinate because of lack of knowledge of pre-existing medical conditions or false contraindications (which can also be life-threatening, leaving a patient exposed to a vaccine-preventable disease).

Helpful Resources: Use Immunize.org's screening checklists, such *as Screening Checklist for Contraindications to Vaccines for Children and Teens* (see www.immunize.org/catg.d/p4060.pdf) and *Screening Checklist for Contraindications to Vaccines for Adults* (see www.immunize.org/catg.d/p4065.pdf). CDC's Vaccine Contraindications and Precautions web page: www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html.

ERROR: Administering the wrong vaccine due to similarities in vaccine names (e.g., DTaP for Tdap, zoster for varicella, PPSV23 for PCV13)

How to Avoid This Error: Check the vial label 3 TIMES! Such errors often involve vaccines whose generic or trade names look or sound alike (e.g., Tdap and DTaP, Adacel and Daptacel), or that have similar packaging, so store such vaccines separately and mark them clearly in your storage unit as well as on the patient's vaccine tray. Other times, vaccines are mixed up when vaccinating multiple family members, such as siblings, on the same visit. Prepare vaccines needed for one family member at a time, and always verify names and birthdates for the patient receiving the vaccines.

What to do after such an error: The parent/patient should be told the wrong vaccine was given. Provide the correct vaccine, if necessary, with correct spacing, if necessary (for more details about specific situations, check *Ask the Experts* [www.immunize.org/ask experts] under the relevant vaccine section, or email CDC nipinfo@cdc.gov for advice). Assess how this error happened to ensure it will not happen again.

Helpful Resource: Institute for Safe Medication Practices' (ISMP) *Recommendations for Practitioners to Prevent Vaccine Errors Part 2: Analysis of ISMP Vaccine Errors Reporting Program*: www.ismp.org/newsletters/acutecare/showarticle.aspx?id=104

ERROR: Using the wrong diluent or administering the diluent only

How to Avoid This Error: Use careful labeling in your vaccine storage unit. Keep vaccines and their diluents together if storage requirements are the same. Check the vial and diluents labels 3 TIMES before reconstituting vaccine. Administering the diluent *only* is most likely to happen with the two vaccines that include antigen in their liquid component, Menveo and Pentacel.

What to do after such an error: Diluent errors could affect the potency of the vaccine antigen administered, or the patient might not get the full benefit of the vaccine if the diluent not given contains antigen. If the wrong diluent is used, the vaccine needs to be repeated (except in the case of mixing up the diluent between MMR, MMRV, varicella, and zoster vaccines which are all made by Merck and use the same sterile water diluent).

If an INACTIVATED vaccine is reconstituted with the wrong diluent and is administered, the dose is invalid and should be repeated ASAP. If a LIVE vaccine is reconstituted with the wrong diluent and is administered, the dose is invalid and if it can't be repeated on the same clinic day, it needs to be repeated no earlier than four weeks after the invalid dose. This spacing is due to the effects of generating a partial immune response that could suppress the live replication of subsequent doses, even of the same live virus vaccine.

Menveo (GSK) vaccine for the prevention of *Neisseria meningitidis* serogroups A, C , Y, and W-135 is available in two different formulations: 1) a single vial of liquid containing all four serotypes and 2) a two-vial presentation comprised of the MenCYW-135 liquid conjugate component and a vial containing the MenA lyophilized conjugate component. If using the two-vial presentation and the patient receives only the diluent, he or she is not protected against invasive meningococcal disease caused by *Neisseria meningitidis* serogroup A. Serogroup A disease is very rare in the United States but common in some other countries. If the recipient of the MenCYW-135 diluent-only dose does not plan to travel outside the U.S., then the dose does not need to be repeated. Otherwise, the dose should be repeated with either correctly reconstituted Menveo or with a dose of Menactra or MenQuadfi. There is no minimum interval between the incorrect dose and the repeat dose.

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With Pentacel, the liquid DTaP-IPV component given alone can count as valid doses of DTaP and IPV vaccines. You cannot mix the leftover Hib component (lyophilized powder) with sterile water. ActHib must ONLY be reconstituted with either the DTaP-IPV solution supplied with Pentacel, or with a specific ActHib saline diluent. You must contact the manufacturer to obtain diluent for the extra ActHib dose.

With Recombinant Zoster Vaccine (RZV, Shingrix), if only the diluent is administered, this dose is invalid and does not count. Administer a correctly reconstituted dose 4 weeks after the invalid dose.

Helpful Resource: *Vaccines with Diluents: How to Use Them* www.immunize.org/catg.d/p3040.pdf

ERROR: Administering a vaccine after the expiration date

How to Avoid This Error: If a vaccine is even one day over its expiration date, it should not be used. Rotate stock in your storage unit (which means make sure your vaccine that expires soonest is the closest to the front and easiest to reach in your storage unit), and establish a regular schedule for checking your storage unit for expired vaccine.

What to do after such an error: If a dose of expired vaccine is inadvertently given, it should be repeated. If the expired dose is a live virus vaccine, you must wait at least 4 weeks after the expired dose was given before repeating it. If the error is detected the same day, a repeat dose can be administered that day. The repeat dose of an expired inactivated vaccine can be given on the same day or any other time. If you prefer, you can perform serologic testing to check for immunity for certain vaccinations (e.g., measles, rubella, hepatitis A, and tetanus), although this may be more expensive. And, if test results are negative, revaccination is indicated.

Helpful Resources: CDC's *Vaccine Storage and Handling Toolkit* (page 18): www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf

ERROR: Administering vaccine in the wrong site or by the wrong route

How to Avoid This Error: In your vaccine preparation area, post reference materials that show the site and the route for each vaccine for each age group so that those who administer vaccines can easily verify the administration site and route for all vaccines and for all ages. Highlight or otherwise mark the route information on the package.

What to do after such an error: The deltoid muscle is the preferred site for intramuscular (IM) injection for children age 3 years and older and adults, although the anterolateral thigh can be used as a secondary choice. The anterolateral thigh is the site of choice for infants and toddlers under age 3 years; the deltoid is a secondary injection site for IM injections with toddlers if the muscle mass is adequate. For deltoid injections, care must be taken to avoid injection too high on the upper arm where injury to the shoulder could result (referred to as Shoulder Injury Related to Vaccine Administration, or SIRVA). Although the gluteus muscle is not a recommended site for vaccination, in general a dose given there can be considered valid. The exceptions to this general rule are hepatitis B, rabies and HPV vaccines, which should not be considered valid if administered in any site other than the deltoid or anterolateral thigh.

Although vaccines should always be given by the route recommended by the manufacturer, if a vaccine is given by the wrong route (subcutaneously (Subcut) instead of IM, or IM instead of Subcut), it doesn't need to be repeated with the following four exceptions: hepatitis B, rabies, HPV, and inactivated influenza vaccine that is labeled for IM administration given by any route other than IM should not be counted as valid and should be repeated.

Helpful Resources: *Administering Vaccines: Dose, Route, Site, and Needle Size:* www.immunize.org/catg.d/p3085.pdf

Administering Vaccines to Adults: Dose, Route, Site, and Needle Size: www.immunize.org/catg.d/p3084.pdf

How to Administer Intramuscular and Subcutaneous Vaccine Injections: www.immunize.org/catg.d/p2020.pdf

How to Administer Intramuscular and Subcutaneous Vaccine Injections to Adults: www.immunize.org/catg.d/p2020a.pdf

How to Administer Intranasal and Oral Vaccinations: www.immunize.org/catg.d/p2021.pdf

How to Administer Multiple Intramuscular Vaccines to Adults During One Visit at www.immunize.org/catg.d/p2030.pdf

ACIP's *General Best Practice Guidelines for Immunization* at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/administration.html

Ask the Experts: www.immunize.org/askexperts/administering-vaccines.asp#errors.

ERROR: Giving a vaccine dose earlier than the recommended age or interval

How to Avoid This Error: Know the minimum intervals for all vaccine series. Keep an easy-to-read immunization schedule handy for staff as well as the CDC table of minimum intervals (see www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/A/age-interval-table.pdf). If you still aren't sure if a dose will be valid, check with your state immunization program *before* giving it. Attempt to locate old vaccination records by contacting previous healthcare providers and reviewing your state registry.

What to do after such an error: A dose administered 5 or more days earlier than the recommended *minimum interval* between doses is not valid and generally should be repeated (see first resource below for exceptions to this rule). The repeat dose should be spaced after the INVALID dose by the recommended minimum interval.

Doses administered 5 or more days before the *minimum age* should be repeated on or after the patient reaches the minimum age. If the vaccine is a live vaccine, wait at least 28 days from the invalid dose.

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Helpful Resources: CDC's Recommended and Minimum Ages and Intervals Between Doses of Routinely Recommended Vaccines chart: www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/A/age-interval-table.pdf

Immunize.org's *Summary of Recommendations for Child/Teen Immunization:* www.immunize.org/catg.d/p2010.pdf

Immunize.org's *Summary of Recommendations for Adult Immunization*: www.immunize.org/catg.d/p2011.pdf

Contact information for state immunization program managers: www.immunize.org/coordinators

ERROR: Giving two doses of live injectable or nasally administered vaccines too close together (leading to potential interference between these vaccines)

How to Avoid This Error: Ask patients if they have received any recent vaccinations ("Have you (or has your child) received any vaccinations in the past 4 weeks?" is a question on Immunize.org's screening checklist for contraindications). Check the person's record in your state registry.

What to do after such an error: If two live injectable or nasally administered virus vaccines are administered less than 4 weeks apart and not on the same day, the vaccine given second should be considered invalid and be repeated. The repeat dose should be administered at least 4 weeks after the INVALID dose.

Note: Oral vaccines (Ty21a typhoid vaccine, rotavirus and cholera) can be administered simultaneously or at any interval before or after other live vaccines (injectable or intranasal) if indicated. One pair that is an exception is TY21a and cholera. Cholera vaccine should be administered before TY21a vaccine, and 8 hours should separate cholera vaccine and the first dose of TY21a.

Helpful Resources: Immunize.org's screening checklists: www.immunize.org/handouts/screening-vaccines.asp

CDC's "Pink Book" chapter on General Best Practices Guidance for Immunization: www.cdc.gov/vaccines/pubs/pinkbook/downloads/genrec.pdf

ERROR: Giving the wrong dosage amount for the patient's age (e.g., influenza, hepatitis A, and hepatitis B vaccines)

How to Avoid This Error: Check the vial label 3 TIMES to be certain you are administering the appropriate pediatric or adult product! Store vaccines with pediatric and adult dosages (certain influenza vaccine products, hepatitis A and B) on different shelves and clearly marked "pediatric" or "adult." Verify the patient's age and check against the vaccine's age indications in the package insert, on the VIS, or on a vaccine dosing schedule that includes such information.

What to do after such an error:

- If you gave LESS than a full age-appropriate dose of any vaccine, the dose is invalid. If the error is discovered while the patient is still in the office, you can give another pediatric dose (i.e., the other "half" dose). If the error is discovered after the person has left the office, then the patient should be revaccinated with a full age-appropriate dose as soon as feasible. Exceptions are if a patient sneezes after nasal spray vaccine or an infant regurgitates, spits, or vomits during or after receiving oral rotavirus vaccine.
- If you gave MORE than an age-appropriate dose of a vaccine (adult dose of a vaccine to child or 2 doses of the same vaccine (e.g., mistakenly administering MMRV and varicella at the same visit), count the dose as valid and notify the patient/parent about the error. Using larger than recommended dosages can pose a risk because of excessive local or systemic concentrations of antigens or other vaccine constituents. The patient should receive subsequent doses in the series on schedule (that is, a larger-than-recommended dose does not negate the need for the remaining doses in the series).
- For Shingrix only: if less that a full dose is administered (e.g., needle slip, syringe malfunction) and the error is recognized on the same clinic day, the repeat dose can be administered immediately. If the error is identified after the day the partial dose was given, then wait 4 weeks and administer another full dose.

Helpful Resources: CDC's *Vaccine Storage and Handling Toolkit*: www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf

Immunize.org's *Hepatitis A and B Vaccines: Be Sure Your Patients Get the Correct Dose!* www.immunize.org/catg.d/p2081.pdf

Immunize.org's *Influenza Vaccine Products for the [current year] Influenza Season:* www.immunize.org/catg.d/p4072.pdf

ERROR: Giving pneumococcal polysaccharide vaccine (PPSV23, Pneumovax) and any pneumococcal conjugate vaccine PCV on the same day

How to Avoid This Error: Almost all vaccines used in the United States may be given simultaneously (not in the same syringe), but pneumococcal vaccines are an exception. When PCV15 is given, PPSV23 is recommended a minimum of 8 weeks later (for people who are immunocompromised, have a cochlear implant, or have a CSF leak). Do not give any PCV product and PPSV23 on the same day. If PPSV23 has already been given, wait 8 weeks (for a child) or 1 year (for an adult age 19 years or older) before giving PCV15 or PCV20 to avoid interference between the vaccines. For adults age 65 and older given PCV15, PPSV23 should be administered 1 year later. If PCV20 is used, PPSV23 is not indicated.

- **What to do after such an error:** ACIP has not spelled out what to do when doses of any PCV and PPSV23 are given non-simultaneously without the recommended minimum interval between them, but CDC subject matter experts have said that in such a case, the dose given second does not need to be repeated. This is an exception to the usual procedure for a minimum interval violation.

Helpful Resources: *Pneumococcal Vaccine Timing*: eziz.org/assets/docs/IMM-1152.pdf

CDC's "PneumoRecs VaxAdvisor" is a mobile app available for iOS

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and Android devices that provides patient-specific guidance consistent with ACIP's pneumococcal vaccination recommendations

Immunize.org's *Summary of Recommendations for Child/Teen Immunization*: www.immunize.org/catg.d/p2010.pdf

Immunize.org's *Summary of Recommendations for Adult Immunization*: www.immunize.org/catg.d/p2011.pdf

ERROR: Administering a vaccine outside of its ACIP-recommended age/dose schedule (e.g., DTaP-IPV, MMRV)

How to Avoid This Error: If you are unsure whether it is acceptable to use the vaccine in a certain situation, check the package insert. For example, DTaP-IPV (Kinrix, Quadracel) is only approved and recommended for the 5th dose of the DTaP and the 4th dose of IPV in children age 4–6 years. MMRV (ProQuad) is approved and recommended for children age 12 months through 12 years. Unless ACIP has made an off-label recommendation, you should use a vaccine as licensed to ensure its efficacy and safety.

What to do after such an error: Check *Ask the Experts* (www.immunize.org/askexperts) under the specific vaccine section, or email CDC at nipinfo@cdc.gov for advice. In general, as long as the off-label dosage was correct and the minimum age(s) and interval(s) were met, CDC does not recommend that an off-label dose be repeated, but state immunization registries may not accept it as valid, so check.

Helpful Resources: Package inserts: www.immunize.org/fda

State immunization manager contact information: www.immunize.org/coordinators

ERROR: Administering a vaccine using the wrong needle length

How to Avoid This Error: Post a reference guide in your vaccine preparation area so those who administer vaccines can easily verify the correct needle size for the type of injection and age/weight of the patient.

What to do after such an error: The needle length (not the gauge) is critical to delivering vaccine to the appropriate tissue depth. An IM injection given with too short a needle for the person's weight is functionally a Subcut injection. However, ACIP does not recommend repeating IM injections given by the Subcut route except for hepatitis B, HPV, and rabies vaccines.

Helpful Resources: *Administering Vaccines: Dose, Route, Site, and Needle Size:* www.immunize.org/catg.d/p3085.pdf

Administering Vaccines to Adults: Dose, Route, Site, and Needle Size: www.immunize.org/catg.d/p3084.pdf

REPORT VACCINE ADMINISTRATION ERRORS:

If you've made a vaccination error, here are two places you can report it:

1. The Institute for Safe Medication Practices (ISMP) has a website where errors can be reported. The Vaccine Error Reporting Program (VERP) was created to allow healthcare professionals and patients to report vaccine errors confidentially. By collecting and quantifying information about these errors, ISMP will be better able to advocate for changes in vaccine names, labeling, or other appropriate modifications that could reduce the likelihood of vaccine errors in the future. Report at www.ismp.org/form/verp-form.

Helpful Resource: In March 2015, VERP published an excellent guide on avoiding vaccine errors: www.ismp.org/newsletters/acutecare/showarticle.aspx?id=104

2. CDC recommends that healthcare professionals report vaccine errors to the Vaccine Adverse Events Reporting System (VAERS). If an adverse event occurs following a vaccine administration, a report should definitely be sent to VAERS. Adverse events should be reported to VAERS regardless of whether a healthcare professional thinks it is related to the vaccine or not, as long as the event follows administering a dose of vaccine. Report at https://vaers.hhs.gov/index.

Educational Resources for Vaccine Administration

ACIP's *General Best Practice Guidelines for Immunization* — This website covers a broad range of immunization topics, including detailed information about recommended vaccine administration practices, and is updated regularly.

- www.cdc.gov/vaccines/hcp/acip-recs/general-recs/administration.html

CDC's e-Learn: *Vaccine Administration* – This training addresses knowledge gaps in proper vaccine administration. It highlights common mistakes and is designed to train providers to avoid administration errors by applying the "Rights of Medication Administration" to each encounter when vaccines are administered.

- www2.cdc.gov/vaccines/ed/vaxadmin/va/ce.asp

***Immunization Techniques* DVD** – Revised in 2010 by the California Department of Public Health, *Immunization Techniques: Best Practices with Infants, Children, and Adults* focuses on the skills and techniques needed for vaccine administration, including injectable, oral, and nasal vaccines.

- Available for purchase at www.immunize.org/dvd.
- Viewable on YouTube at www.youtube.com/watch?v=WsZ6NEijlfI&feature=youtu.be

Questions?

Email CDC's immunization experts: nipinfo@cdc.gov.

Call the vaccine manufacturer. Contact information at www.immunize.org/resources/manufact_vax.asp.

Call your state immunization program manager. Contact information at www.immunize.org/coordinators.

Do you have questions about avoiding vaccine handling and storage errors? Download: *Don't Be Guilty of These Preventable Errors in Vaccine Storage and Handling!* www.immunize.org/catg.d/p3036.pdf

Don't Be Guilty of These Preventable Errors in Vaccine Storage and Handling!

Do you see your clinic or practice making any of these frequently reported errors in vaccine storage and handling? Although some of these errors are much more serious than others, none of them should occur. Be sure your healthcare setting is not making any of these ***preventable*** *errors.*

ERROR: Designating only one person, rather than at least two, to be responsible for storage and handling of vaccines

- Everyone in the office should know the basics of vaccine handling, including what to do when a shipment arrives and what to do in the event of an equipment failure or power outage.
- Train at least one back-up person. The back-up and primary persons should be equally familiar with all aspects of vaccine storage and handling, including knowing how to handle vaccines when they arrive, how to properly record refrigerator and freezer temperatures, what to do when an out-of-range temperature occurs, and how to appropriately respond to an equipment problem or power outage.

ERROR: Storing vaccine inappropriately

- Be sure all office staff (especially persons involved in receiving vaccine shipments) understand the importance of properly storing vaccines immediately after they arrive.
- Know which vaccines should be refrigerated and which should be frozen. Storage information is found in the package insert. For quick reference, post Immunize.org's *Vaccine Handling Tips* (www.immunize.org/catg.d/p3048.pdf) on the refrigerator and freezer.
- Always store vaccines (and temperature monitoring devices) in the body of the refrigerator – not in the vegetable bins, on the floor, next to the walls, in the door, or near the cold air outlet from the freezer. The temperature in these areas may differ significantly from the temperature in the body of the unit.
- Don't overpack the unit. Place the vaccine packages in such a way that air can circulate around the compartment.
- Always store vaccines in their original packaging.

ERROR: Using the wrong type of equipment

STORAGE UNITS

- CDC recommends storing vaccines in separate, self-contained units that only refrigerate or only freeze, or in a combination unit purpose-built (sometimes referred to as "pharmaceutical-grade") for storing vaccines and other fragile pharmaceutical products. If a household-grade combination refrigerator/freezer must be used, only refrigerated vaccines should be stored in the unit, and a separate stand-alone freezer should be used for frozen vaccines.
- Never store vaccines in a "dormitory-style" unit (i.e., a small refrigerator-freezer unit with one exterior door and a freezer compartment inside the refrigerator). These units cannot maintain stable temperatures and pose a significant risk of freezing vaccines, even when used for temporary storage.

TEMPERATURE MONITORING DEVICES/DIGITAL DATA LOGGERS

- Use only temperature monitoring devices (digital data loggers [DDLs] preferred and required for VFC vaccine storage) for continuous temperature monitoring and recordings.* Set the DDL to measure and record temperatures no less than every 30 minutes. Be sure the DDL has a current and valid Certificate of Calibration Testing (aka Report of Calibration).
- Buffer* the DDL's temperature probe by immersing it in a vial filled with liquid (e.g., glycol, ethanol, glycerin), loose media (e.g., sand, glass beads), or a solid block of material (e.g., Teflon® or aluminum). Use of a buffer ensures you are not just measuring air temperature, which is subject to fluctuation when you open the door.

* Not all DDLs can measure ultra-cold temperatures required for some mRNA COVID-19 vaccines. For accurate ultra-cold temperature monitoring, it is essential to use an air-probe (non-buffered) or a probe designed specifically for ultra-cold temperatures.

For more detailed information, see the *Vaccine Storage and Temperature Monitoring Equipment* section of CDC's *Vaccine Storage & Handling Toolkit* (www.cdc.gov/vaccines/hcp/admin/storage/toolkit/index.html).

ERROR: Inadvertently leaving the refrigerator or freezer door open or having inadequate seals

- Unfortunately, too much vaccine is lost every year because storage unit doors were left open. Remind staff to *completely* close the door every time they open the refrigerator or freezer.
- Check the seals on the doors on a regular schedule, such as

NOTE: COVID-19 mRNA vaccine storage requirements differ from other vaccines (see "COVID-19 and MPOX Vaccine Addendum" in CDC's Vaccine Storage & Handling Toolkit at www.cdc.gov/vaccines/hcp/admin/storage/toolkit). For links to CDC's vaccine storage and handling information for each product, see Immunize.org's "Checklist of Current Versions of U.S. COVID-19 Vaccination Guidance and Clinic Support Tools" (www.immunize.org/catg.d/p3130.pdf).

CONTINUED ON THE NEXT PAGE ▶

when you're taking inventory. If there is any indication the door seal may be cracked or not sealing properly, have it replaced. (This is much less costly than replacing a box of, for example, pneumococcal conjugate or varicella vaccine!)

ERROR: Storing food and drinks in the vaccine refrigerator

- Frequent opening of the refrigerator door to retrieve food items can adversely affect the internal temperature of the unit and damage vaccines. Store only vaccines in the designated units.

ERROR: Inadvertently cutting the power supply to the storage units

- Be sure everyone in your office, including the janitorial staff, understands that very expensive and fragile vaccines are being stored in the refrigerator and freezer.
- Post a *Do Not Unplug* sign (www.immunize.org/catg.d/p2090.pdf) next to electrical outlets for the refrigerator and freezer, and a *Do Not Stop Power* warning label (www.immunize.org/catg.d/p2091.pdf) by the circuit breaker for the electrical outlets.

ERROR: Recording temperatures inadequately

- If using a temperature monitoring device (TMD) **(digital data loggers [DDLs] preferred and required for VFC vaccine storage*)** that records minimum/maximum (min/max) temperatures (i.e., the highest and lowest temperatures reached during a specific time period), document min/max and current temperatures *once* each workday, preferably in the morning. If using a TMD that does not record min/max temperatures, document current temperatures *twice*, at the beginning and end of each workday.*
- Record the temperatures you observed on an appropriate log. Immunize.org has temperature logs (www.immunize.org/handouts/temperature-logs.asp) available in both Fahrenheit and Celsius formats.
- Record temperatures for ALL units being used to store vaccine. Don't forget to check temperatures for both the refrigerator and freezer.

* Note: If using a DDL, the logging interval should be programmed to measure and record temperatures at least every 30 minutes.

ERROR: Documenting out-of-range temperatures on vaccine temperature logs but not taking action

- If you find out-of-range temperatures…do something! The viability of your vaccine – and the protection of your patients – is at stake.
- Guidance on what to do may be found on Immunize.org's temperature logs (www.immunize.org/handouts/temperature-logs.asp) and Vaccine Storage Troubleshooting Record (www.immunize.org/catg.d/p3041.pdf).
- Have an Emergency Response Plan and trained staff in place before a problem occurs. For help in developing a plan, see the Checklist For Emergency Vaccine Storage, Handling, and Transport and the Worksheet: Vaccine Storage and Handling SOPs in the *Resources* section of CDC's *Vaccine Storage & Handling Toolkit* (www.cdc.gov/vaccines/hcp/admin/storage/toolkit/index.html).

ERROR: Discarding temperature logs too soon

Keep your temperature logs for at least 3 years. Why?

- You can track recurring problems as the storage unit ages.
- If out-of-range temperatures have been documented, you can determine how long and how often this has been occurring.
- This can be a great way to demonstrate why you need a new refrigerator or freezer!

ERROR: Not using vaccine with the soonest expiration date first

When unloading a new shipment of vaccine:

- Move vaccine with the shortest expiration date to the front of the unit, making it easier for staff to access this vaccine first.
- Mark the "older" vaccine to be used first.

ERROR: Dealing inappropriately with expired vaccines

- Carefully monitor your usage to ensure viable vaccines don't expire! As discussed above, place vaccines with the shortest expiration dates at the front of the unit.
- If you discover expired vaccines, immediately remove them from the unit so that they are not inadvertently administered.

ERROR: Discarding multidose vials prematurely

- Almost all multidose vials (MDV) of vaccines contain a preservative and can be used until the expiration date on the vial, unless the vaccine is contaminated or compromised in some way or there is a beyond-use date (BUD) defined in the package insert. For some vaccines, the manufacturer may specify that once the MDV has been entered or the rubber stopper punctured, the vaccine must be used within a certain number of hours or days. For specific guidance, refer to the package insert (see www.immunize.org/fda).
- Only the number of doses indicated in the package insert should be withdrawn from a MDV. After the maximum number of doses has been withdrawn, the vial should be discarded, even if there is residual vaccine or the expiration date has not been reached.

Human Papillomavirus

A Parent's Guide to Preteen and Teen HPV Vaccination

HPV

Why vaccinate preteens and teens against HPV?

- The vaccine produces better immunity to fight infection when given at younger ages compared with older ages.
- Vaccination for HPV is much more effective if all doses in the series are given before the first sexual contact.
- Most American men and women will contract at least one type of HPV virus in their lifetime. Vaccination can reduce their risk of HPV infection.
- Most people who become infected with HPV do not even know it.
- HPV is easily spread by skin-to-skin contact during sexual activity. Even if someone does not have sexual intercourse, they can still get HPV.
- People who have only one lifetime sex partner can still get HPV if their partner had intimate contact with an infected person even once.
- The vaccine has been tested in tens of thousands of people around the world and has been proven to have no serious side effects except fainting, which is more likely to occur in adolescents after any vaccination.
- HPV vaccination can prevent more than 90% of HPV-attributable cancers in men and women in the future.

What is HPV?

Human papillomavirus (HPV) is a common family of viruses. There are more than 100 types of HPV viruses. Some cause infection of the skin and others infect mucous membranes of various areas of the body. Different types of HPV infection affect the body in different ways. For instance, some types of HPV can lead to cancer of the tongue, tonsils, anus, cervix, vulva, and penis, and others cause warts in the genital area.

How common is HPV?

HPV is very common. According to the Centers for Disease Control and Prevention (CDC), most American men and women will contract at least one type of HPV virus during their lifetime. Approximately 79 million Americans are currently infected with HPV, and about 14 million more become infected each year. HPV is the cause of almost all cervical cancers in women and recent studies show that HPV is associated with the majority (70%) of oropharyngeal cancers (cancer of the tongue or tonsils), which occur primarily in men, in the United States.

How serious is HPV?

HPV is extremely serious. In the United States, there are 34,800 new cancer cases caused by HPV each year, of which about 4 out of 10 are in men. Each year there are 10,900 new HPV-attributable cervical cancer cases, and more than 4,000 women die from cervical cancer. Cancer of the oropharynx (tongue, tonsils) due to HPV is even more common with 13,500 new cases each year, 11,300 of which are in men. Treatment may involve surgery, chemotherapy, and/or radiation.

How is HPV spread?

The most common ways to get an HPV infection is from oral, vaginal, or anal sex with an infected person. Infection can also be acquired from skin-to-skin contact with areas infected by HPV. It is possible to have HPV and not know it, so a person can unknowingly spread HPV to another person.

Resources for more information

- Your healthcare provider or local health department
- CDC's information on vaccines and immunization: www.cdc.gov/vaccines
- Immunize.org's vaccine information website: www.vaccineinformation.org
- Vaccine Education Center at the Children's Hospital of Philadelphia: www.chop.edu/centers-programs/vaccine-education-center
- CDC's Vaccines For Children (VFC) program: www.cdc.gov/vaccines/programs/vfc/index.html

SOURCES

American College of Obstetricians and Gynecologists (ACOG) Committee on Adolescent Health Care. Fact Sheet: Human Papillomavirus. ■ www.acog.org/womens-health/faqs/hpv-vaccination

Centers for Disease Control and Prevention (CDC). National Center for Chronic Disease Prevention and Health Promotion. HPV and Cancer. ■ www.cdc.gov/hpv/parents/cancer.html

CDC. National Center for Emerging and Zoonotic Infectious Diseases. Vaccine Safety: Human Papillomavirus Vaccine. ■ www.cdc.gov/vaccine-safety/vaccines/hpv-vaccine.html

CDC. National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. Genital HPV Infection Fact Sheet. ■ www.cdc.gov/std/HPV/STDFact-HPV.htm

CDC. National Center for Immunization and Respiratory Diseases. HPV Vaccine-Questions and Answers. ■ https://www.cdc.gov/hpv/hcp/answering-questions.html

CDC. National Center for Immunization and Respiratory Diseases. Vaccines by Age: 11–12 Years ■ www.cdc.gov/vaccines/parents/by-age/years-11-12.html and 13–18 Years ■ www.cdc.gov/vaccines/parents/by-age/years-13-18.html

Reduction in human papillomavirus (HPV) prevalence among young women following HPV vaccine introduction in the United States, National Health and Nutrition Examination Surveys, 2003- 2010. *J Infect Dis.* 2013 Aug 1; 208(3):385-93 ■ https://pubmed.ncbi.nlm.nih.gov/23785124

Talk to your health-care provider today about protecting your son or daughter from HPV infection!

Can HPV infection be treated?

There is no treatment for HPV infection. Fortunately, the body usually fights off the virus naturally; however, in cases where the virus cannot be fought off naturally, the person is at risk for serious complications, including cancer. There are treatments available for the health problems that HPV can cause, for example, removal of genital warts or pre-cancerous cervical cells, and chemotherapy, surgery, or radiation for cancer.

What is HPV vaccine?

Gardasil 9 is the only HPV vaccine currently being distributed in the United States. Gardasil 9 protects against most HPV-attributable cancers in men and women. It also prevents most genital warts and cervical pre-cancers. For preteens, HPV vaccine is given in two shots, separated by 6 to 12 months. It is important to get all the recommended doses to get the best protection.

At what age should my son or daughter get HPV vaccine?

Routine vaccination with HPV vaccine is recommended for all 11- and 12-year-old boys and girls. The vaccine can also be given beginning at age 9 or 10 years. If your son or daughter did not receive the two doses of vaccine at the recommended age, they should still start or complete their HPV vaccine series. Vaccination is routinely recommended through the age of 26 for all males and females, and can be given through age 45 years, if desired.

If the vaccine series is started before the 15th birthday, two doses are needed. If it's started at age 15 years or older or, if the person has problems with their immune system, three doses are necessary. Check with your healthcare provider to make sure your child has all the needed doses.

HPV vaccine works better when given on time. HPV vaccine produces better immunity to fight infection when given to preteens as compared to older adolescents and adults. For HPV vaccine to work best, it is very important for preteens to get all the recommended doses before any sexual activity begins. It is possible to get infected with HPV the very first time they have sexual contact with another person, even if they do not have intercourse.

Are HPV vaccines safe?

HPV vaccine has been shown to be very safe. Every vaccine used in the United States is required to go through rigorous safety testing before licensure by the FDA. Before licensure, the HPV vaccine was extensively tested in clinical trials with more than 28,000 male and female participants. Since the first HPV vaccine was licensed for use in 2006, more than 120 million doses of HPV vaccine have been distributed in the United States. Now in routine use, the vaccine is continually monitored for safety.

In the years of HPV vaccine safety monitoring, no serious safety concerns have been identified except fainting after vaccination (a common occurrence for adolescents after any vaccination). Like other vaccinations, most side effects from HPV vaccination are mild (e.g., fever, headache, pain and redness in the arm where the shot was given).

Is HPV vaccine effective?

The vaccine has been shown to be highly effective in protecting against the HPV types targeted by the vaccine. HPV vaccination has reduced the numbers of teen girls and young women with vaccine-type HPV infection. It also has reduced cases of genital warts, cervical pre-cancerous changes, and other complications of HPV infection.

Communicating the Benefits of Influenza Vaccination

Influenza (flu) severity varies from year to year, but flu season always brings serious consequences. While the 2020–2022 flu seasons were mild due to COVID-19 prevention measures, flu-related hospitalizations returned to pre-pandemic levels during the 2022–23 season. Although flu outbreaks are unpredictable, vaccination is the best protection for any influenza season.

Flu vaccination is the best way to prevent flu and its complications. Everyone age 6 months and older is recommended to get a yearly flu vaccine. This can markedly lower the risk of influenza-related illness, hospitalization, and death. Take advantage of every opportunity to make a strong recommendation for flu vaccine and other vaccines your patients may need, such as COVID-19, RSV, and pneumococcal vaccines. Flu vaccine may be given at the same time as other vaccines.

CDC estimates the annual impact of flu from 2010–2023* ranged from:

9–41 million flu **illnesses**	4–21 million flu **medical visits**	100,000–710,000 flu **hospitalizations**	5,000–52,000 flu **deaths**

*excludes 2020–21 season when flu cases were limited due to COVID-19 pandemic prevention efforts
SOURCE: *CDC Disease Burden of Flu* (www.cdc.gov/flu/about/burden/index.html)

Vaccination rates* for flu remain well below optimal levels:

- **58%** children 6 months–17 years
- **50%** adults 18+ years
- **74%** adults 65+ years
- **80%** healthcare personnel
- **48%** pregnant people

*Estimates are for 2021–22 season.

What are the Benefits of Flu Vaccination?[1]

Research shows flu vaccination:

Reduces Hospitalization and Death

- ✔ Pediatric deaths from flu were cut in half for vaccinated children with underlying high-risk medical conditions and by two-thirds for healthy children, compared to those who were not vaccinated
- ✔ Influenza hospitalizations were cut in half for all adults (including those 65+ years of age)
- ✔ Influenza hospitalizations dropped dramatically among people with chronic health conditions – by 79% for vaccinated people with diabetes and 52% for those with chronic lung disease
- ✔ Vaccinating long-term care facility (LTCF) staff reduces hospitalizations and deaths in LTCF residents

Reduces Severity of Illness in Hospitalized Individuals

- ✔ Among vaccinated adults hospitalized with flu, intensive care unit (ICU) admissions decreased by more than half (59%), and they spent fewer days in the ICU compared to unvaccinated hospitalized people
- ✔ Children's risk of admission to a pediatric intensive care unit (PICU) for flu-related illness was cut by almost 75%

Reduces Risks for Major Cardiac Events

- ✔ Risk of a major cardiac event (e.g., heart attack) among vaccinated adults with existing cardiovascular disease was reduced by more than one-third

Protects Pregnant People and Their Babies

- ✔ For vaccinated pregnant people, flu-associated acute respiratory infections were cut in half, and flu-associated hospitalizations were reduced by 40%
- ✔ Influenza illnesses and influenza-related hospitalizations in infants under 6 months of age fell by half when their mothers were vaccinated

Tips
for Discussing Flu Vaccination

- **Recommend flu and other needed vaccines at every clinical encounter:** "I strongly recommend you get your flu vaccine today. It can be given at the same time as other vaccines."
- **Keep it simple:** "Flu vaccine helps reduce your risk of hospitalization and death." "Flu complications can happen to anyone, but especially babies, children under 5, people with health issues, pregnant people, and older adults."
- **Use a presumptive approach:** "Today we are giving you your annual flu vaccine."
- **Communicate why we vaccinate:** "Vaccination prevents flu and its severe complications." "Preventing the flu means preventing missed workdays, doctor appointments, and testing. While flu vaccination can't prevent COVID-19, it can help prevent flu and COVID-19 co-infections, which can cause more severe illnesses."[2]
- **Communicate the variability and unpredictability of flu:** "Flu seasons are unpredictable. The best way to prepare for any season is to get a flu vaccine."
- **Acknowledge that flu vaccines are not always a perfect match with the circulating virus strains,** but "getting vaccinated is the best way to reduce flu and its complications."

FOOTNOTES

[1] CDC. What are the benefits of flu vaccination? www.cdc.gov/flu/prevent/vaccine-benefits.htm

[2] Dao, 2021, *Journal of Clinical Virology Plus.* https://doi.org/10.1016/j.jcvp.2021.100036

AIM Association of Immunization Managers

Immunize.org

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

www.immunize.org/catg.d/p3115.pdf

Item #P3115 (9/12/2023)

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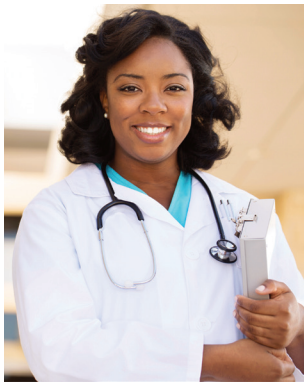
Steps to Implementing Standing Orders for Immunization in Your Practice Setting



Standing orders are written protocols that allow qualified healthcare professionals (who are eligible to do so under state law, such as registered nurses or pharmacists) to assess the need for and administer vaccines to patients.

- Standing orders must be approved by a physician or other authorized practitioner in advance of vaccination.
- Patients must meet certain criteria, such as age or underlying medical condition.
- The qualified healthcare professionals must be eligible by state law to administer certain medications, such as epinephrine, under standing orders should a medical emergency (rare event) occur.

Why implement standing orders?

Using standing orders streamlines your practice workflow by eliminating the need to obtain an individual physician's order to vaccinate each patient. Standing orders are the most consistently effective means for increasing vaccination rates and reducing missed opportunities for vaccination.

By empowering nurses and/or other eligible staff to use standing orders, your office will

- Facilitate efficient assessment for and administration of one or more vaccines
- Improve vaccination rates in your practice, which will, in turn, protect more patients from vaccine-preventable diseases and decrease opportunities for disease transmission in your healthcare setting.

Getting started

Integrate standing orders into the practice workflow so they can be used to their full potential. This requires some preparation so everyone in the practice understands how and why standing orders are being implemented. Suggested steps follow.

Step 1 Build Support of Leadership

Discuss the benefits of implementing standing orders with the leadership (medical director, clinicians, clinic manager, lead nurses) in your medical setting. It is important to get their buy-in from the start.

Involve these people from the start:

- **Medical Director** – This person is responsible for signing the standing orders protocols or supervises the clinician who signs them, so it is critical that he/she agrees with the need for standing orders and supports their use.

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- **Clinicians** – Determine which clinician(s) authorized by applicable state laws or regulations will review and sign the standing orders protocols for the practice.
- **Providers** – Identify issues that might lead to resistance among healthcare providers who administer vaccines.
- **Nurse Leaders** – Identify potential obstacles to efficient use of standing orders; train nursing staff.
- **Legal Counsel** – Consider discussing the standing order with your office's legal counsel to be sure the protocols comply with all applicable state requirements.

Check vaccination rates prior to leadership meetings because the need for standing orders may be evidenced by low vaccination rates. Measured vaccination rates are usually lower than perceived rates.

Step 2 Identify Who Will Lead the Standing Orders Program

- In most practices, the lead person will be a nurse, nurse practitioner, or physician assistant.
- The lead person must be an influential leader who has medical knowledge, understands the standing orders protocols, and is able to answer staff questions.
- The lead person must be motivated to protect patients by improving the vaccination levels in your practice — a true immunization champion.

Step 3 Which Vaccines?

- Reach agreement about which vaccine(s) your practice will give using standing orders.
- It may be best to start using standing orders only for one vaccine (e.g., influenza; second dose of HPV vaccine) if you have not implemented standing orders previously.
- Later, when staff are trained and are confident in the process, you can expand their use to additional vaccines.
- Standing orders work well for improving vaccination coverage for children, adolescents, and adults.

Step 4 Develop the Standing Order Protocol; Get sign-off

Don't reinvent the wheel! Immunize.org offers standing orders templates for all routinely recommended vaccines. These are available to download at no charge at www.immunize.org/standing-orders.

- Immunize.org's standing orders are developed by technical experts and are kept updated whenever a revision is needed.

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- Use Immunize.org's standing orders templates as written, or modify them to meet your practice's needs.
- Have the medical director or clinician responsible for the program review and sign the standing orders.

NOTE: Immunize.org also has standing orders templates available for managing vaccine reactions, which include the administration of medication. These templates are available at www.immunize.org/catg.d/p3082.pdf for adults and at www.immunize.org/catg.d/p3082a.pdf for children.

Step 5 Determine the Role Staff Members Will Play in Using Standing Orders

Here are some questions that will help you plan:

- Who is eligible under state law to assess a patient's vaccination needs and provide vaccinations using the standing orders protocols (e.g., RNs, pharmacists, others)?
- Who in your practice will fulfill each role?
- Who will determine a patient's need to be vaccinated?
  - Check the patient's chart (and state immunization registry, if applicable)
  - If no electronic vaccine record, ask for hand-held record; call previous practice
- Who will assess for contraindications and precautions? A screening checklist is available at www.immunize.org/handouts/screening-vaccines.asp. Consider: Can these questions be added to your electronic health record (EHR)? Who will review the patients' answers?

Step 6 Explain the Standing Orders Program to all Staff Members

It is crucial that all staff understand the program because they will all be involved directly or indirectly.

- To get buy-in from staff, you will need to explain why you are starting this program. (See "Why implement standing orders?" at the beginning of this handout.)
- Review how standing orders work and the specific protocols and procedures with all staff members who will be involved.

Step 7 Program Assessment

As with all quality improvement activities, it's wise to review your standing orders program shortly after it begins, check in with staff each week until it's running well, and then every few months until your immunization rates are at your goal or, in the case of influenza, the vaccination season has ended. Compare the number of doses of vaccine you gave before and

after your standing orders program was put in place. Consider whether you are ready to expand your use of standing orders to additional vaccines.

See "Using Standing Orders for Administering Vaccines: What You Should Know" at www.immunize.org/catg.d/p3066.pdf.

Improving vaccination delivery: beyond standing orders

Beyond standing orders, there are other ways to maximize your office immunization rates. Here are some modifications to consider:

- Assessment with feedback: If feasible, track your immunization rate improvements after implementing standing orders.
- Check immunization status: Check the chart, check the state immunization registry (if applicable), and ask every patient who enters the office about their immunization status.
- Staff prompts: If you use an EHR, consider whether the standing orders protocols and screening questionnaires can be added as prompts within your existing system
- Expand services: Once your team is using standing orders, consider expanding services. For example, can your team:
  - Offer walk-in vaccination visits (no appointment necessary)?
  - Hold vaccination clinics on evenings or weekends?
  - Have "vaccination-only" visits?
  - Offer "express" service for vaccination during regular office hours?

Be sure all aspects of your vaccine delivery are optimal. These aspects include proper storage and handling of vaccines, vaccine administration techniques, strategies to avoid vaccine administration errors, documentation requirements for administering vaccines, and materials to help answer questions of vaccine-hesitant patients. Visit www.immunize.org/clinic for many helpful resources.

Congratulations on implementing standing orders in your practice! Both you and your patients are now benefitting from this proven method to streamline your office practice while improving your patients' quality of care.

Reviewed April 2018

Talking with Parents about Vaccines for Infants

Doctors, nurses, physician assistants, and office staff all play a key role in establishing and maintaining a practice-wide commitment to communicating effectively about vaccines and maintaining high vaccination rates. You can all answer parents' questions, provide educational materials, and ensure that families make and keep vaccine appointments.

Parents consider their child's health care professionals to be their most trusted source of information when it comes to vaccines. This is true even for parents who are vaccine-hesitant or who have considered delaying one or more vaccines. Therefore, you have a critical role in helping parents choose vaccines for their child.

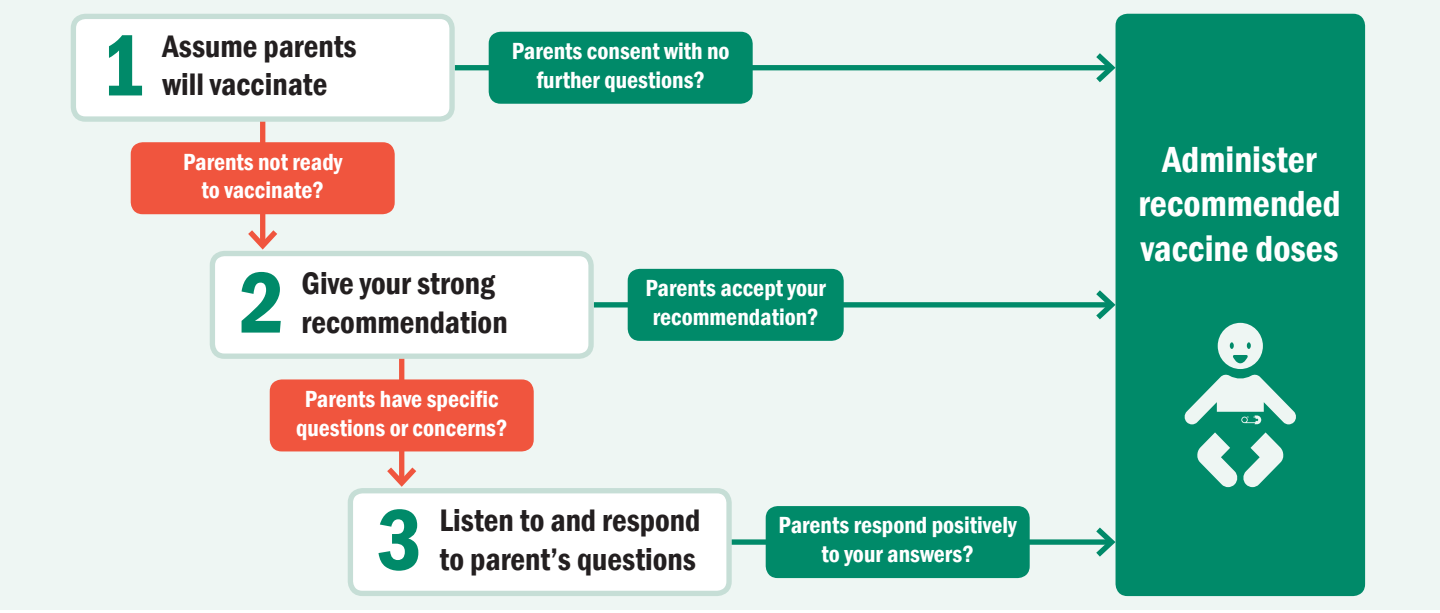
With all you do, you may feel that long vaccine conversations are stressful when you also need to check physical and cognitive milestones and have a full schedule of patients. Because of this, we designed this resource to guide you with conversational techniques and resources for discussing vaccines with parents.

Assume parents will vaccinate

State which vaccines the child needs to receive.
When discussing vaccines for children, it is best to remember most parents are planning to accept vaccines and to introduce the topic with that in mind. State the child will receive vaccines as though you presume that parents are ready to accept recommended vaccines for their child during that visit. For example:

> Instead of saying *"What do you want to do about shots?,"* say *"Your child needs three shots today."*
>
> Instead of saying *"Have you thought about the shots your child needs today?,"* say *"Your child needs DTaP, Hib, and Hepatits B shots today."*

A research study looking at health care professionals' (HCPs) and parents' interactions during vaccine visits showed that parents were more likely to express concerns when providers used language that asked parents about their vaccination plans. In this study, the presumptive approach resulted in significantly more parents accepting vaccines for their child, especially at first-time visits[1]. However, if parents still hesitate or express concerns, move to the next step and give your strong recommendation.



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

Give your strong recommendation

If parents express concerns, then share your strong vaccine recommendation.

Although parents frequently consult family members, friends, and webpages for information on vaccines, parents consistently rank their child's doctor as their most trusted source for vaccine information. With this unique position, your strong recommendation is critical for vaccine acceptance.

Clearly state your strong recommendation. If appropriate, you can add a brief supporting statement that uses a mix of science and anecdote, depending on what you think will be most effective with that parent. Share the importance of vaccines to protect children from potentially life threatening diseases, or talk about your personal experiences with vaccination. For example:

> *"I strongly recommend your child get these vaccines today..."*
> *"...These shots are very important to protect him from serious diseases."*
> *"...I believe in vaccines so strongly that I vaccinated my own children on schedule."*
> *"...This office has given thousands of doses of vaccines and we have never seen a serious reaction."*

Listen to and respond to parents' questions

Seek to understand parents' concerns and provide requested information.

Although research shows most parents in the U.S. *support vaccines*, you will encounter parents with questions. If a parent has concerns, resists following the recommended vaccine schedule, or questions your strong recommendation, this doesn't necessarily mean they won't accept vaccines. Sometimes parents simply want *your* answers to their questions. Your willingness to listen to their concerns will play a major role in building trust in you and your recommendation.

When listening, seek to understand the concerns behind parents' questions before responding with information the parent may not be asking about. If you encounter questions you do not know the answer to, or information from sources you are unfamiliar with, it is best to acknowledge the parent's concerns and share what you *do know*. Offer to review the information they have found and, if necessary, schedule another appointment to discuss it further.

What if parents refuse to vaccinate?

If parents decline immunizations after your strong recommendation and conversation, use the following strategies:

- Continue the conversation about vaccines during the next visit and restate your strong recommendation.
- Inform parents about clinical presentations of vaccine-preventable diseases, including early symptoms.
- Remind parents to call before bringing their child into the office, clinic, or emergency department when the child is ill so health care professionals can take precautions to protect others. Explain that when scheduling an office visit for an ill child who has not received vaccines, you will need take all possible precautions to prevent contact with other patients, especially those too young to be fully vaccinated and those who have weakened immune systems.
- Share *If You Choose Not to Vaccinate Your Child, Understand the Risks and Responsibilities* with parents. This fact sheet explains the risks involved with their decision, including risks to other members of their community, and additional precautionary responsibilities for parents.
- You may wish to have parents sign AAP's *Refusal to Vaccinate* form each time a vaccine is refused so that you have a record of their refusal in their child's medical file.

Wrapping up the conversation

Remember that success comes in many forms. It may mean that parents accept all vaccines when you recommend them, or that they schedule some vaccines for another day. For very vaccine-hesitant parents, success may simply mean agreeing to leave the door open for future conversations.

Work with parents to agree on at least one action, such as:

- Scheduling another appointment or
- Encouraging the parent to read additional information you provide them.

If a parent declines vaccines once, it does not guarantee they always will. Continue to remind parents about the importance of keeping their child up to date on vaccines during future visits and work with them to get their child caught up if they fall behind.

Find resources for specific parent questions:
Preparing For Vaccine Questions Parents May Ask

For information on vaccines, vaccine safety, and vaccine preventable diseases:
www.cdc.gov/vaccines/conversations

[1] Opel, D. J., MD, MPH. (2015). The Influence of Provider Communication Behaviors on Parental Vaccine Acceptance and Visit Experience. *The American Journal of Public Health*, 105(10), 1998-2004.

04/17/18

Top Ten Reasons to Protect Your Child by Vaccinating

Here are the top ten reasons to protect your child by vaccinating them against serious diseases.

1 Parents want to do all they can to be sure their children are healthy and protected from diseases. Vaccination is the best way to do that.

2 Vaccination protects children from serious illness. Vaccines prevent diseases that can lead to loss of an arm or leg, needing hospital care, pneumonia, hearing loss, convulsions, brain damage, and death.

3 Vaccination can prevent diseases such as measles, whooping cough, COVID-19, and influenza that are still a threat. These diseases keep harming U.S. children and leading to hospital care and deaths every year.

4 Some diseases, such as measles, are still common in other countries. A traveler can bring the disease to the U.S., or your child can get it while traveling.

5 Outbreaks of diseases that could be prevented by vaccination occur when many parents decide not to vaccinate their children.

6 Vaccination is safe and it works! Scientists, doctors, and the U.S. government do long and careful reviews of each vaccine to be sure they are safe.

7 Trusted leaders in the American Academy of Pediatrics, the American Academy of Family Physicians, and the Centers for Disease Control and Prevention all strongly support protecting children with recommended vaccinations. And, they get their own kids vaccinated!

8 Vaccination protects others you care about, including family members, friends, and community members.

9 If children aren't vaccinated, they can spread disease to others. Disease could spread to another child who is too young to be vaccinated. It could spread to a person with a weak immune system due to cancer and certain medicines. No one wants to cause these vulnerable people long-term harm or even death.

10 We all work to make our communities stronger and to protect each other and each other's children. Vaccinating our own family members is the best for them and our communities.

Immunize.org

www.immunize.org/catg.d/p4016.pdf
Item #P4016 (4/10/2023)

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

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Evidence Shows Vaccines Unrelated to Autism

Erroneous claims that vaccines cause autism have led some parents to delay or refuse vaccines for their children. Some of the claims are that autism is caused by measles-mumps-rubella (MMR) vaccine, vaccines that contain thimerosal, or by too many vaccines. Many studies have been done to test these claims. None has shown that vaccines cause autism. The real causes of autism are not fully known, but the past decade of research supports the role of genetics in an autism diagnosis. In fact, no scientific question into the causes of autism has been better researched, tested, and examined as the role of vaccines in autism. Volumes of evidence show no link between the two.
This sheet lays out the facts to help parents understand why experts do not think vaccines cause autism.

Medical and legal authorities agree that no evidence exists that vaccines cause autism.

The Institute of Medicine is an impartial group of the world's leading experts that advises Congress on science issues. After reviewing more than 200 studies in 2004 and more than 1,000 studies in 2011, their report strongly stated that the evidence did not show a link between vaccines and autism.

In 2014, researchers from the RAND Corporation published an update to the 2011 Institute of Medicine's report. In a systematic review of the evidence published on vaccine safety to date, they found the evidence was strong that MMR vaccine is not associated with autism.

In 2009, the U.S. federal court reviewed 939 medical articles in their hearings. The court found the evidence was "overwhelmingly contrary" to the theory that autism is linked to MMR vaccine, thimerosal, or a combination of the two. Since then, additional scientific evidence adds evidence to the conclusion that neither vaccines, nor the thimerosal in vaccines, was linked to autism.

Based on the research, the World Health Organization, the European Medicines Agency, Health Canada, and other national and international health groups have concluded that no link can be found between vaccines and autism.

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Institute of Medicine. *Immunization Safety Review: Vaccines and Autism*. National Academies Press. 2004. www.ncbi.nlm.nih.gov/pubmed/20669467

Maglione MA, Das L, Raaen L, et al. Safety of Vaccines Used for Routine Immunization of U.S. Children: A Systematic Review. *Pediatrics.* 2014; 134(2):325–337. https://pediatrics.aappublications.org/content/134/2/325

AUTISM SCIENCE FOUNDATION
autismsciencefoundation.org

The causes of autism are not fully understood, but the evidence does not point toward vaccines.

Parents often first notice the behaviors of autism when their child is 18–24 months old — the age by which most childhood vaccines have been given. Because of this, many parents incorrectly associate vaccination with the onset of autism. Developmental specialists, however, can identify early signs of autism in children when they are much younger. This research supports the scientific consensus that, in most cases, the precursors of autism are present before a child is born. Eric Courchesne and his colleagues at the University of California, San Diego, have confirmed that the brains of children with autism have distinct patches of architectural disorganization in their prefrontal and temporal cortical tissue. Because the organization of the cortex begins in the second trimester of pregnancy, the researchers conclude that the events leading to the malformation of the cortex must begin around this time or earlier, certainly well before a child is born or ever receives a vaccine.

The influence of vaccines on a child cannot explain the measurable differences in brain structure and brain function that exist between autistic and non-autistic children. Starting in the first six months of life, many autistic children experience unusually rapid growth in areas of the brain that are responsible for the skills typically impaired in autism. Researchers have used "functional" MRI scans to study the connections of nerve cells within the brains of autistic individuals. These scans show — in very young autistic infants and toddlers — abnormal connections in areas of the brain that control language, social, and emotional processes, suggesting that these abnormalities contribute to the development of autism. The results of these and other studies provide promising clues for future research on the causes of autism and emphasize that finding its causes will not be as simple as pointing to vaccines as the cause.

What is known with great certainty is that genetics play a major role in determining whether a child will be autistic. The study of twins bears this out. Identical twins have 100% of

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their genes in common; fraternal twins have 50% in common (like any other pair of siblings). In more than three out of four cases, when one identical twin has a form of autism, the other one does too. Among fraternal twins, though, this is true for one out of about seven pairs, at most. A child who has one or more older siblings with autism is between 20 and 50 times more likely to be diagnosed with a form of autism, compared with a child who has no autistic older siblings. The vaccination history of these infant siblings has been investigated (see below). In addition, in families affected by autism, many parents and non-autistic siblings display mild autistic-like traits. The inherited or spontaneous mutations that seem to be associated with autism are in genes that control the development of the brain – including how brain cells develop and make circuits that operate correctly. This finding agrees with the discovery of abnormalities in the way the brain operates even in very young infants and toddlers with autism.

Just like any complex disorder, there are environmental factors that play a role. Scientists found that being sick during pregnancy triggers an immune response that contributes to an autism spectrum disorder (ASD) diagnosis. Multiple studies have linked high levels of air pollution during pregnancy to risk of an ASD diagnosis. Metabolic disorders, like gestational diabetes and obesity, also increase the risk. Certain medications, such as valproic acid (Depakote), taken during pregnancy also have been shown to increase the risk of autism. Scientists are working with families to explore every possible association.

REFERENCES

Autism Science Foundation. www.autismsciencefoundation.org

Centers for Disease Control and Prevention (CDC), National Center for Birth Defects and Developmental Disabilities. Autism Spectrum Disorders. www.cdc.gov/ncbddd/autism/facts.html

National Institutes of Health. National Institute of Child Health and Development: Autism Spectrum Disorder (ASD): NICHD Research Information. www.nichd.nih.gov/health/topics/autism/researchinfo/Pages/default.aspx

A baby's immune system can easily handle the vaccines recommended for infants and toddlers.

Some people worry that receiving too many vaccines early in life can overwhelm a baby's immune system and that this might somehow lead to autism. This doesn't fit with what we know about the remarkable capacity of the immune system. From the moment of a baby's birth, the immune system begins coping with microorganisms in the form of bacteria, viruses, and fungi. Like vaccines, these microbes contain foreign antigens — proteins that stimulate the immune system. When you realize that a single bacterium contains a larger variety and number of antigens than are found in all the recommended early childhood vaccines combined, you can see that a baby's immune system, which copes with exposure to countless bacteria each day, can easily withstand exposure to the antigens in vaccines.

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Offit PA, Quarles J, Gerber MA, et al. Addressing Parents' Concerns: Do Multiple Vaccines Overwhelm or Weaken the Infant's Immune System? *Pediatrics.* 2002;109(1):124–129. doi:10/1542/peds.109.1.124.PMID:11773551

Vaccine Education Center, Children's Hospital of Philadelphia. Too Many Vaccines? What You Should Know. www.chop.edu/export/download/pdfs/articles/vaccine-education-center/too-many-vaccines.pdf

No links exist between autism and thimerosal.

A mercury-containing compound, thimerosal has been used since the 1930s as a vaccine preservative in vials that contain several doses of vaccine (called multi-dose vials). Before giving a vaccine, a healthcare professional inserts the needle of the syringe that will be used to administer the vaccine through the stopper of the multi-dose vial and draws out a single dose of vaccine. When the needle pierces the stopper, it is possible that contaminants from outside the vial might be introduced, even when good technique is used. Thimerosal keeps bacteria or other microorganisms that might have entered the vaccine vial from multiplying.

Studies to determine if a relationship exists between thimerosal-containing vaccines and autism have taken two different approaches: (1) some examined groups of children who had received childhood vaccines that contained varying amounts of thimerosal. Autism occurred at essentially the same rate, no matter how much or little thimerosal the children had received. (2) Other studies took the opposite approach, comparing autistic and non-autistic children to see if the autistic children had received more thimerosal-containing vaccines. No significant differences were found in the number of thimerosal-containing vaccines the two groups had received. Finally, researchers have utilized monkey models to mimic the administration of thimerosal in a number of vaccines and tracked outcomes.These studies were supported by anti-vaccine groups and found no effect of thimerosal on behavioral or neuropathological outcome in monkeys.

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Pichichero ME, Gentile A, Giglio N, et al., Mercury Levels in Newborns and Infants After Receipt of Thimerosal-Containing Vaccines. *Pediatrics.* 2008;121(2):e208–214. https://publications.aap.org/pediatrics/article-abstract/121/2/e208/68691/Mercury-Levels-in-Newborns-and-Infants-After?redirectedFrom=fulltext

Nelson KB, Bauman ML. Thimerosal and Autism? *Pediatrics.* 2003;111(3): 674–679. https://publications.aap.org/pediatrics/article-abstract/111/3/674/79865/Thimerosal-and-Autism?redirectedFrom=fulltext

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Why was thimerosal in childhood vaccines?

The mercury compound in thimerosal — ethylmercury — is chemically different from methylmercury, which is widely recognized as an environmental pollutant. A key difference is that, unlike methylmercury, ethylmercury is excreted from the body quickly. The amount of ethylmercury in a thimerosal-preserved vaccine is tiny compared with the amount of mercury that is required to cause symptoms of mercury poisoning. Also, the signs and symptoms of mercury poisoning are very different from the characteristics of autism. The chemical difference between ethylmercury and methylmercury is similar to the difference between ethyl alcohol, found in wine and beer, and methyl alcohol (wood alcohol), a poison found in antifreeze.

As a precaution, by 2001, all routinely recommended childhood vaccines were changed to single-dose packaging so they wouldn't require thimerosal. At the time, this was thought prudent, but all the evidence that has emerged since then shows that there was never a danger of children being harmed by thimerosal in vaccines. Some influenza vaccine formulations come in multi-dose vials that are preserved with thimerosal. Today, influenza vaccine is the only childhood vaccine used in the U.S. that contains more than a trace of thimerosal, and we know that it is safe for children.

REFERENCES

CDC. Notice to Readers: Thimerosal in Vaccines: A joint statement of the American Academy of Pediatrics and the Public Health Service. MMWR. 1999; 48(26):563–565. www.cdc.gov/mmwr/preview/mmwrhtml/mm4826a3.htm

U.S. Food and Drug Administration. Thimerosal and Vaccines. www.fda.gov/BiologicsBloodVaccines/SafetyAvailability/VaccineSafety/UCM096228

Studies have found no link between autism and MMR vaccine.

Some studies compared groups of children who had received MMR vaccine against those who had not. These studies found that neither group was more likely to develop autism. Other studies looked at comparable groups of autistic and non-autistic children. These studies found that autistic children were no more likely to have received MMR vaccine.

Rumors about the safety of MMR vaccine first arose in 1998 after a British physician (a gastroenterologist, not a person trained in either vaccinology or in neurological disorders) announced he had found virus from measles vaccines lingering in the intestines of 12 autistic children. He claimed this accounted for their autism. Other researchers, however, were never able to replicate these results, which implied the gastroenterologist's conclusions were erroneous. Later, a press investigation revealed that the doctor had falsified patient data and relied on laboratory reports that he had been warned were incorrect. The journal that originally published his study took the unusual step of retracting it from the scientific literature on the grounds that it was the product of dishonest and irresponsible research, and British authorities revoked the doctor's license to practice medicine.

Some concerned parents have suggested that there may be a genetically susceptible subgroup of babies that lead to an increased sensitivity to vaccine-caused regression. First, scientists are realizing that the sudden regression that has been reported is actually rare. Regression is part of a decline in function that, if monitored closely by a trained clinician, appears prior to when a vaccine is administered. Second, while siblings of those with a diagnosis called "infant sibs," are less likely to be vaccinated, they are 15% more likely to receive a diagnosis of autism. Finally, using large healthcare databases, two independent research studies examined the probability of an autism diagnosis in these infant siblings with a genetic predisposition to ASD, and found no such increased risk.

The fear that vaccines might cause autism is a dangerous myth. Much scientific research has been devoted to this topic. The result has been an ever-increasing and uniformly reassuring body of evidence that childhood vaccination is, in fact, entirely unrelated to the development of autism. The readings below may be of interest to parents who wish to learn more.

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Immunize.org. MMR Vaccine Does Not Cause Autism. www.immunize.org/catg.d/p4026.pdf

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Jain A, Marshall J, et al. Autism Occurrence by MMR Vaccine Status Among U.S. Children With Older Siblings With and Without Autism. *JAMA*, 2015; 312(15:1534-1540). https://jamanetwork.com/journals/jama/fullarticle/2275444

Offit PA. *Autism's False Prophets: Bad Science, Risky Medicine, and the Search for a Cure*. New York: Columbia University Press; 2008

What If You Don't Vaccinate Your Child?

Your child is at risk for developing a vaccine-preventable disease

Vaccines were developed to protect people from dangerous and often fatal diseases. These diseases remain a threat. Vaccines are safe and effective protection.

Influenza or "flu" is a serious respiratory disease that can be deadly. Healthy babies and toddlers are especially vulnerable to complications from influenza. Every year children in the United States die from influenza.

Pertussis or "whooping cough" is an extremely dangerous disease for babies. It is not easily treated and can result in permanent brain damage or death. Whooping cough is most dangerous in children younger than one year. Many infants with whooping cough have to be hospitalized and each year some babies die. In 2019, over 15,000 cases of whooping cough were reported to public health officials in the United States. It is hard to protect unvaccinated babies from whooping cough because it is very contagious and often not recognized in adults and older children who may only have a mild cough with no fever.

Measles is a highly contagious disease that can lead to serious complications, including death. It remains common in many countries and has been brought into the United States by returning vacationers and foreign visitors. Vaccination caused measles to decline rapidly during the 1990s. Recently, vaccine hesitancy among parents in the United States and abroad has led to a growing number of children and teens who are not vaccinated and are unprotected from measles. This has led to outbreaks of measles in the United States, Canada, and other countries.

Chickenpox is very contagious. Before the development of a vaccine, chickenpox killed approximately 100 people every year in the United States. Most were previously healthy. Children infected with chickenpox must be kept out of day care or school for a week or more so they don't spread the disease to others.

Your child can infect others in the community

Children who are not vaccinated can transmit vaccine-preventable diseases at schools and in the community.

- Unvaccinated children can infect babies who are too young to be fully immunized.
- Unvaccinated children can infect people of any age who can't be immunized for medical reasons. This includes children and adults with leukemia and other cancers, immune system problems, and people of all ages receiving treatments or medications that weaken their immune systems.

Your child may have to be excluded from school or child care

During disease outbreaks, unvaccinated children may be excluded from school or child care to protect them and others. This can cause hardship for the child and parent.

Next steps…

We strongly encourage you to vaccinate your child. Please discuss any concerns you have with a trusted healthcare provider or call the immunization coordinator at your local or state health department. Your vaccination decision affects not only the health of your child, but also your family, your child's friends, their families, and your community.

▶ For more information about vaccines, visit these websites:

American Academy of Pediatrics
https://www.healthychildren.org/english/safety-prevention/immunizations/pages/default.aspx

Centers for Disease Control and Prevention
www.cdc.gov/vaccines/parents

Vaccinate Your Family
www.vaccinateyourfamily.org

Immunize.org
www.immunize.org

Vaccine Education Center at the Children's Hospital of Philadelphia
www.chop.edu/centers-programs/vaccine-education-center

Immunize.org

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

www.immunize.org/catg.d/p4017.pdf
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Item #P4017 (3/8/2023)

Addressing Vaccination Anxiety for Infants and Toddlers

Strategies for Parents and Caregivers

Infants and toddlers are often distressed by injections, leading some parents to dread, delay, or avoid vaccinations, even when they understand why they are so important. You can do simple things to help your child have a better vaccination experience while you protect them from serious diseases.

Before the Visit

Pre-register for your visit, if possible, so your wait time is shorter.

Know what to expect. When setting up the visit, ask if vaccinations are expected. Do not reassure your child falsely. For example, don't promise your toddler "no shots today" if they may be needed.

Consider a numbing medicine that you can put on the skin. It may be a 5% lidocaine cream, spray, or patch. This can help with injection pain. To take effect, these medicines need to be put on the skin 30 to 60 minutes ahead of time. Many clinics do not have time to do this. Consider asking the clinic or a pharmacist how to do this before you arrive, using a numbing medicine you can get without a prescription.[1]

During the Visit[2]

Ask questions about the vaccination process so your feel prepared.

Breastfeeding, taking sugar water, or sucking on a pacifier while being held helps infants with pain. Have the baby sucking before, during, and after vaccination. If not breast-feeding, you can use sugar water (1 teaspoon of white sugar dissolved with 2 teaspoons of water). Start giving sugar water 1 to 2 minutes before vaccination. Place a dropper into the side of the baby's mouth between the cheek and gums or dip the pacifier into the sugar water before giving it.

Hold your child. After undressing the baby's limb(s) where the vaccine(s) will be given, hold the child on your lap during vaccination, either facing away from you or toward you. This should help the child stay still and feel secure but not be so tight that it increases distress. Rock the child after vaccination.[2]

Distraction helps most infants and toddlers. You can use a mobile device, toys, music, or bubbles.

Your words, tone, and attitude are important. If the adults act and speak calmly and confidently, the child will feel reassured.[3]

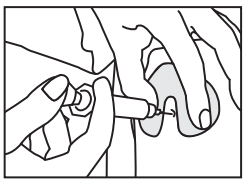
KEY IDEA: Let the person giving the vaccines know what helps your child feel calmer. They want to help!

Options for Making Shots Less Painful without Medicine

In addition to numbing medicines described in "Before the Visit", there are other ways to "distract" pain sensors in the skin so the child getting the vaccine won't notice it as much. Options include:

The person giving the vaccine may use a **cold ("freezy") spray** just before injection.

Before the injection, a **plastic device with several short, blunt contact points** can be placed on the skin around the injection site (one brand is ShotBlocker by Bionix, pictured right). This is non-prescription and inexpensive. You can clean and reuse it.



After the Visit

Experts do not recommend giving pain medicines (such as ibuprofen or acetaminophen) before vaccination because they might lower the body's response to vaccines. You may use these medicines to help with pain or fever that develops after vaccination, if needed.[4]

1. *Guide to Topical Anesthetics and Numbing Cream* from the Meg Foundation at www.megfoundationforpain.org/2022/7/22/topical-anesthetics-infographic/
2. *Reduce the Pain of Vaccination in Children Under 3 Years: A Guide for Parents* from Immunize Canada: https://caringforkids.cps.ca/uploads/handout_images/3p_babiesto1yr_e.pdf
3. *Improving the Vaccination Experience: What Health-Care Providers Say* from AboutKidsHealth (Canada) at assets.aboutkidshealth.ca/AKHassets/CARD_HCP_WhatYouCanSay.pdf?hub=cardcommvac#card
4. *After the Shots: What to do if your child has discomfort* (Immunize.org): www.immunize.org/catg.d/p4015.pdf

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Item #P4272a (8/21/2023)

Addressing Vaccination Anxiety for Children

Strategies for Healthcare Professionals

Fear of needles and vaccine visits is common in older children. What you do and say can help children experience less pain and help parents and children more readily accept recommended vaccinations. Below are strategies that can improve the vaccination experience, especially when combined. Consider what is practical. Simply acknowledging the feelings of both child and caregiver and letting them know you care can help.

Before the Visit

Pre-registration may minimize time in the waiting room where anxiety can mount.

Establish expectations. If possible, let families know the child will be offered any needed vaccinations and that you'll work with them to make the experience comfortable.

Have the caregiver bring a favorite comfort item or "fidget item" from home (e.g., spinner, game).

Set up the vaccination room/area so it's comfortable and private. Keep needles out of sight until necessary.

Consider topical analgesia (e.g., 5% lidocaine cream, spray, or patch). This may help with pain but needs to be applied to the vaccination site 30 to 60 minutes ahead of time. With guidance, some families may accomplish this before arriving.[1]

During the Visit

Ask the caregiver and child how the child handles vaccinations.[2] What helps them cope? If needed, remind the caregiver that their calm and supportive attitude will make the child feel more secure.

Invite the caregiver and child, as appropriate, to **ask questions** so they feel prepared.

Watch your words! Use words that help the child cope during vaccination. Using fear-provoking words (e.g., 'shot', 'sting') or false reassurances ("It won't hurt a bit") can increase a child's distress and pain.[3]

Offer suggestions of coping strategies, if needed. Slow deep breaths before, during, and after vaccination can be calming. Some children want to see the vaccination, but most children like to be distracted. Encourage those children to talk about something else pleasant or play with a mobile device. Displaying fun posters in the vaccination area can provide distraction, too.[4]

KEY IDEA: Asking parents and children what helps them cope is essential. Support their choices, when feasible.

Non-pharmacological Pain Management Options

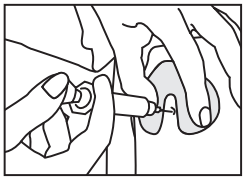
In addition to topical analgesics (see above), non-pharmacological pain control strategies can temporarily "confuse and distract" pain sensors. Options include:

Cooling the injection site with a vapocoolant spray immediately before injection.

Using pain-minimizing injection techniques: Don't aspirate before injecting. Inject quickly. If giving multiple injections, give the most painful vaccine last.

Placing a vibrating case with optional ice pack (e.g., Buzzy by Pain Care Labs) proximal to the injection site.

Placing a plastic device with several short, blunt contact points (e.g., ShotBlocker by Bionix, pictured right) on the patient's skin before injection. These are non-prescription, inexpensive and can be cleaned and reused. If helpful, some families may keep one for future vaccinations.



After the Visit

Use of pain-reducing medicines (e.g., ibuprofen or acetaminophen) before vaccination is not recommended because it might diminish the immune system's response to vaccination. These medicines may be used as needed to treat pain or fever after vaccination.

1. *Guide to Topical Anesthetics and Numbing Cream* from the Meg Foundation at www.megfoundationforpain.org/2022/7/22/topical-anesthetics-infographic/
2. Screening Checklists about Vaccine Contraindications and Precautions from Immunize.org at www.immunize.org/clinic/screening-contraindications.asp
3. *Improving the Vaccination Experience: What Health-Care Providers Say* from AboutKidsHealth (Canada) at assets.aboutkidshealth.ca/AKHassets/CARD_HCP_WhatYouCanSay.pdf?hub=cardcommvac#card
4. *Search and Find Poster* from AboutKidsHealth (Canada): assets.aboutkidshealth.ca/AKHAssets/CARD_SearchAndFind_Poster.pdf?hub=cardcommvac#card

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Addressing Vaccination Anxiety in Adolescents and Adults

Strategies for Healthcare Professionals

Anxiety about injections is common among adolescents and adults, and can contribute to dreading, delaying, or even refusing vaccination. However, anxiety and pain are subjective feelings: what you do and say can help an anxious patient gain confidence and more readily accept vaccinations in the future.

Below are strategies that can improve the vaccination experience for adolescents and adults. Consider what is practical. Simply acknowledging the patient's feelings and letting them know you care can help.

Before the Visit

Pre-registration may minimize time in the waiting room where anxiety can mount.

Establish expectations. If possible, let patients know they will be offered any needed vaccinations and that you'll work with them to make the experience comfortable.

Set up the vaccination room/area so it's comfortable and private. Keep needles out of sight until necessary.

Consider topical analgesia (e.g., 5% lidocaine cream, spray, or patch). This may help with pain but needs to be applied to the vaccination site 30 to 60 minutes ahead of time. With guidance, some patients may accomplish this before arriving.[1]

During the Visit

Screen for vaccination-related anxiety. Immunize.org's screening checklists for contraindications to vaccines now ask about anxiety.[2]

Invite patients to ask questions about the vaccination process so they feel prepared.

Watch your words! Use words that help the patient cope during vaccination. Using fear-provoking words (e.g., "shot," "sting") or false reassurances ("It won't hurt a bit") can increase distress and pain.

Ask each patient what helps them feel comfortable. Make suggestions, if needed. Slow deep breaths can be calming. A lot of people like to be distracted (some don't) and they can be encouraged to chat or use their mobile devices. Posters can serve as distractions, too. Offer pain management options, if feasible (see below).

KEY IDEA: Asking patients how they prefer to manage their anxiety is essential.

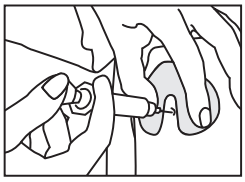
Non-pharmacological Pain Management Options (to minimize pain signals from the skin)

Cooling the injection site with a vapocoolant spray immediately before injection.

Using injection techniques that diminish the pain experience: Don't aspirate before intramuscular injections. Inject quickly. If giving multiple injections, give the most painful vaccine last.

Placing a vibrating case with optional ice pack (e.g., Buzzy by Pain Care Labs) proximal to the injection site (closer to the trunk).

Placing a plastic device with several short, blunt contact points (e.g., ShotBlocker by Bionix, pictured right) on the patient's skin before injection. These are non-prescription, inexpensive and can be cleaned and reused.



After the Visit

Use of pain-reducing medicines (e.g., ibuprofen or acetaminophen) before vaccination is not recommended because it might diminish the immune system's response to vaccination. They may be used to treat pain or fever after vaccination.

For more information, see Immunize.org's resources on Addressing Vaccination Anxiety, available at www.immunize.org/handouts.

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