


Resources to Help Immunization Providers PREVENT Vaccination Errors

Immunization Action Coalition


June 2018 • Item #S8022



Background


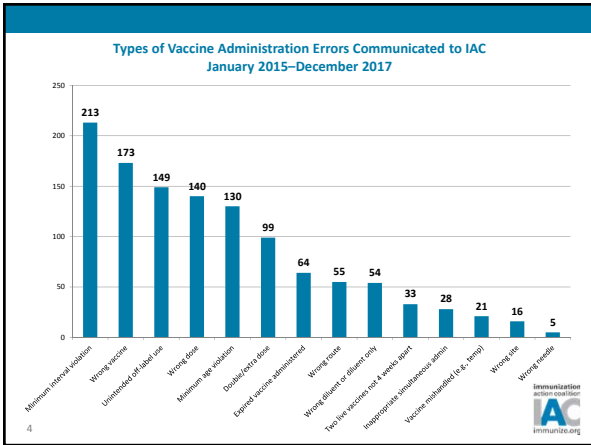
- Healthcare professionals and members of the public can contact IAC by writing to admin@immunize.org.
- We answer ~200–300 such emails each month.
- It appears that more errors are being made (IZ schedule more complex, additional available products, “alternative schedules,” more recommended adult vaccines). In addition, some types of errors that might have gone undetected in the past are now caught by state immunization information systems.

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From January 2015 through December 2017, IAC received questions about approximately **1,180 medical errors** related to vaccination, including errors in vaccine storage and handling, administration, scheduling, and documentation.


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Resources to help immunization providers AVOID errors

- **Vaccine Storage and Handling**
- Administration
- Scheduling
- Documentation

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Storage & handling resources

www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf

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Storage & handling resources

- CDC's "You Call the Shots" web-based course on storage & handling www.cdc.gov/vaccines/ed/youcalltheshots.html
- CDC's "Pink Book" chapter on storage & handling www.cdc.gov/vaccines/pubs/pinkbook/downloads/vac-storage.pdf
- CDC video: *Keys to Storage and Handling Your Vaccine Supply* www2.cdc.gov/vaccines/ed/shvideo
- CDC's Vaccine Label Examples www.cdc.gov/vaccines/hcp/admin/storage/guide/vaccine-storage-labels.pdf



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Haemophilus influenzae type b-containing Vaccines

<p>Hib (ActHIB) Ages: 6 weeks through 4 years Use for: Any dose in the series Route: Intramuscular (IM) injection Reconstitute Hib powder ONLY with manufacturer-supplied 0.4% sodium chloride diluent Beyond Use Time: If not used immediately after reconstitution, store at 2°C to 8°C (36°F to 46°F) and discard if not used within 24 hours. Should be shaken vigorously before injection.</p>	<p>Hib (PedvaxHIB) Ages: 6 weeks through 4 years Use for: Any dose in the series Route: Intramuscular (IM) injection Vial stopper contains latex.</p>
<p>Hib (Hiberix) Ages: 6 weeks through 4 years Use for: Any dose in the series Route: Intramuscular (IM) injection Reconstitute Hib powder ONLY with manufacturer-supplied 0.9% sodium chloride diluent Beyond Use Time: If not used immediately after reconstitution, store at 2°C to 8°C (36°F to 46°F) and discard if not used within 24 hours. Should be shaken vigorously before injection.</p>	



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Storage & handling resources

- CDC's *Temperature Monitoring Best Practices for Refrigerated Vaccines*
- CDC's *Temperature Monitoring Best Practices for Frozen Vaccines*
- CDC's *Storage Best Practices for Refrigerated Vaccines*
- CDC's *Storage Best Practices for Frozen Vaccines*

Each available in Celsius and Fahrenheit
 All available at www.cdc.gov/vaccines/hcp/admin/storage/index.html



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The infographic is divided into two main sections: Refrigerated Vaccines and Frozen Vaccines. It includes detailed instructions on how to use a refrigerator, how to use a freezer, and how to handle vaccines during these processes. It also features a 'Checklist for Safe Vaccine Storage and Handling' and a 'Don't Be Guilty of These Preventable Errors' section.



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Storage & handling resources

- IAC's "Storage and Handling" print resources www.immunize.org/handouts/vaccine-storage-handling.asp
- IAC's "Clinic Tools: Vaccine Storage and Handling" web page www.immunize.org/clinic/storage-handling.asp

Print resources include:



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Storage & handling resources

- *Checklist for Safe Vaccine Storage and Handling* www.immunize.org/catg.d/p3035.pdf
- *Don't Be Guilty of These Preventable Errors in Vaccine Storage and Handling!* www.immunize.org/catg.d/p3036.pdf
- *Emergency Response Worksheet* www.immunize.org/catg.d/p3051.pdf
- *Vaccines with Diluents: How to Use Them* www.immunize.org/catg.d/p3040.pdf
- Temperature logs in Celsius and Fahrenheit for refrigerators and freezers
- And more...



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Vaccines with Diluents: How to Use Them

When preparing the following vaccines, be sure to use the diluent provided by the manufacturer for that particular brand. This manual lists the diluent to use for the brand or brands indicated on the chart. Read the package insert for each vaccine for more information on the diluent and vaccine reconstitution process with the diluent (page 6) and/or other relevant information.

Vaccine/brand name	Manufacturer	Lot/expiration/lot number	Lot/expiration/lot number	Storage temperature	Storage temperature
Adenovirus (Adv)	Serono	250	2 1/2% sodium chloride	2-8°C	Refrigeration
Adenovirus (Adv)	GlaxoSmithKline	400	2 1/2% sodium chloride	2-8°C	Refrigeration
Adenovirus (Adv)	GlaxoSmithKline	500	2 1/2% sodium chloride	2-8°C	Refrigeration
Adenovirus (Adv)	GlaxoSmithKline	600	2 1/2% sodium chloride	2-8°C	Refrigeration
Adenovirus (Adv)	GlaxoSmithKline	700	2 1/2% sodium chloride	2-8°C	Refrigeration
Adenovirus (Adv)	GlaxoSmithKline	800	2 1/2% sodium chloride	2-8°C	Refrigeration
Adenovirus (Adv)	GlaxoSmithKline	900	2 1/2% sodium chloride	2-8°C	Refrigeration
Adenovirus (Adv)	GlaxoSmithKline	1000	2 1/2% sodium chloride	2-8°C	Refrigeration
Adenovirus (Adv)	GlaxoSmithKline	1100	2 1/2% sodium chloride	2-8°C	Refrigeration
Adenovirus (Adv)	GlaxoSmithKline	1200	2 1/2% sodium chloride	2-8°C	Refrigeration
Adenovirus (Adv)	GlaxoSmithKline	1300	2 1/2% sodium chloride	2-8°C	Refrigeration
Adenovirus (Adv)	GlaxoSmithKline	1400	2 1/2% sodium chloride	2-8°C	Refrigeration
Adenovirus (Adv)	GlaxoSmithKline	1500	2 1/2% sodium chloride	2-8°C	Refrigeration
Adenovirus (Adv)	GlaxoSmithKline	1600	2 1/2% sodium chloride	2-8°C	Refrigeration
Adenovirus (Adv)	GlaxoSmithKline	1700	2 1/2% sodium chloride	2-8°C	Refrigeration
Adenovirus (Adv)	GlaxoSmithKline	1800	2 1/2% sodium chloride	2-8°C	Refrigeration
Adenovirus (Adv)	GlaxoSmithKline	1900	2 1/2% sodium chloride	2-8°C	Refrigeration
Adenovirus (Adv)	GlaxoSmithKline	2000	2 1/2% sodium chloride	2-8°C	Refrigeration

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Temperature Log for Freezer – Celsius

MONTH/YEAR: _____ VFC PIN or other ID #: _____ Page 1 of 1

Facility Name: _____

Monitor temperatures closely!

- Never allow freezer to "thaw-out," and never let the door in "Open Freezer" state.
- Record the number of times the door is opened.
- Place an "X" on the Freezer Log corresponding to the freezer's temperature.
- Take a full range (10°C) temperature every 4 hours.
- Other actions require a change point.

This action if temp is out of range, too warm (above 10°C) or too cold (below -10°C):

- Do not thaw vaccine. Do not use. Contact your VFC program manager or state health department.
- Do not allow vaccine to be used. Notify your state health department and the manufacturer.
- Report the out of range status and the reason for the "X" mark on the bottom of the log.
- Health care provider responsible for all the immunization program at any time in that health department.
- Document the action taken on the "Vaccine Storage/Handling/Recovery Report" on page 6.

Class of Month: _____

Day of Month: _____

Hour of Day: _____

Minimum Temp: _____

Maximum Temp: _____

Change! Temperature above 10°C we take action! Write any out of range temps and reason below on the log below and call your state or local health department immediately!

TEMPERATURE (Celsius)

10°C to 15°C
 10°C
 5°C
 0°C
 -5°C
 -10°C
 -15°C
 -20°C
 -25°C
 -30°C

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Storage & handling resources

California's VFC program has many helpful resources at www.eziz.org

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Resources to help immunization providers AVOID errors

- Vaccine Storage and Handling
- Administration
- Scheduling
- Documentation

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Vaccine administration resources

- CDC's "Vaccine Administration" web section www.cdc.gov/vaccines/hcp/admin/admin-protocols.html
- CDC's "You Call the Shots" web-based course on vaccine administration www.cdc.gov/vaccines/ed/courses.html#elearn-vaccadmin
- CDC's "Pink Book" chapter on vaccine administration www.cdc.gov/vaccines/pubs/pinkbook/vac-admin.html

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YOU CALL THE SHOTS

Proper vaccine handling is essential for vaccine administration.

Make sure vaccination is safe. KNOW THE SITE, GET IT RIGHT!

www.cdc.gov/vaccines/hcp/infographics/call-the-shots.html

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Immunization Techniques: Best Practices with Infants, Children, and Adults

Purchase at www.immunize.org/dvd
Watch online at www.youtube.com/watch?v=JEMReaOrFRE

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Vaccine administration resources

- IAC's "Administering Vaccines" print resources www.immunize.org/handouts/administering-vaccines.asp
- IAC's "Clinic Tools: Administering Vaccines" web page www.immunize.org/clinic/administering-vaccines.asp

Print resources include:

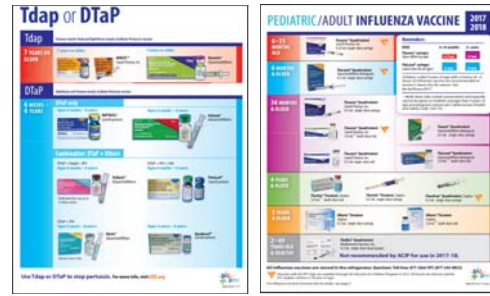
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Vaccine administration resources

- *Administering Vaccines: Dose, Route, Site, and Needle Size* www.immunize.org/catg.d/p3085.pdf
- *Don't Be Guilty of These Preventable Errors in Vaccine Administration!* www.immunize.org/catg.d/p3033.pdf
- *Skills Checklist for Vaccine Administration* www.immunize.org/catg.d/p7010.pdf
- *How to Administer Intradermal, Intranasal, and Oral Vaccinations* www.immunize.org/catg.d/p2021.pdf
- *Hepatitis A and Hepatitis B Vaccines: Be Sure Your Patients Get the Correct Dose* www.immunize.org/catg.d/p2081.pdf
- And more...

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Vaccine administration resources

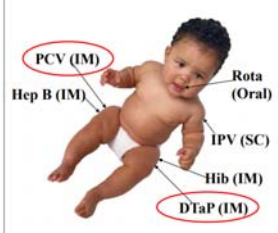


<http://eziz.org/resources/vaccine-admin-job-aids>

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Giving All the Doses Under 12 Months

- **Needle Lengths:** IM=1 inch SC=5/8 inch
- IM injections are given in the infant's thigh
- SC injections may be given in the arm or thigh
- Separate injection sites by 1-2 inches
- Using combination vaccines will decrease the number of injections
- May consider a 5/8 inch needle for IM injections only in newborns less than age 4 weeks



www.aimtoolkit.org/docs/Giving_all_doses_under_12mths.pdf
Alliance for Immunization in Michigan toolkit: www.aimtoolkit.org

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Quick Reference to Combination and/or Reconstituted Vaccines: Childhood: Birth through 18 Years

Brand Name	Contains	Use for Ages	Use for Dose	Administration Tips*
Peritac® SP	DTaP-IPV(Hb)	6 weeks through 6 years	1, 2, 3, or 4 of DTaP, IPV, or Hb	+DTaP-IPV should be packaged with Hib var +Draw up diluent, and to mix, use shake well +Administer within 30 minutes, give IM
ProQuad® GSK	DTaP-IPV(Hb)	6 weeks through 6 years	1, 2, or 3 of DTaP or IPV; any dose of Hib	+Shake well before administering, give IM +Pharmed
Novax® GSK	DTaP-IPV	4 through 6 years	IP: any dose of Hib IP: any dose of DTaP	+Shake well before administering, give IM +Pharmed
Quadrax™ SP	DTaP-IPV	4 through 6 years	IP: any 2 doses of IPV	+Shake well before administering, give IM +Pharmed
ProQuad® MMR, Var (MMRV)	MMR, Var (MMRV)	If 1st dose: ages 12-47 months, use separate MMR and var If 2nd dose: ages 4-12 years, use MMRV	1 or 2 of MMR	+Draw up reconstituted diluent +Add diluent to MMRV var, shake well +Administer within 30 minutes, give SC
MMRV (P) MMR	MMR	12 months and older	1 or 2 of MMR	+Draw up diluent packaged with Hib var +Add diluent to Hib var, shake well, give IM
AdiSP® SP	Hb	6 weeks through 6 years	Any dose of Hb	+Draw up diluent packaged with Hib var +Add diluent to Hib var, shake well, give IM
Hibvar® GSK	Hb	6 weeks through 6 years	Any dose of Hb	+Draw up diluent packaged with Hib var +Add diluent to Hib var, shake well, give IM
Varivax® MMR	Var	12 months and older	1 or 2 of Var	+Draw up diluent packaged with Hib var +Add diluent to Hib var, shake well, give IM +Administer within 30 minutes, give SC
Menaxyn® GSK	MenACWY	2 months through 65 years	Any dose of MenACWY	+MenACWY should be packaged with Hib var +Draw up MenACWY diluent, add to Hib var +Shake, dilute well, give IM
Rotarix® GSK	RV1 (Rotavirus)	6 weeks through 7 months	Any dose of RV1	+GSK diluent packaged with var +Shake diluent in pre-filled oral applicator +Add to RV1 var, shake, withdraw, give orally

*Refer to the manufacturer's package insert for further details regarding reconstituting and/or administering these products.
*When used in combination with Peritac® (DTaP-IPV(Hb)), Novax® may be used for the 3rd (IPV) dose of the 3rd (IPV) dose of the 3rd (IPV) dose.

www.michigan.gov/documents/mdhhs/QuickRefComboReconChild_Final_550773_7.pdf
Alliance for Immunization in Michigan toolkit: www.aimtoolkit.org

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Resources to help immunization providers AVOID errors

- Vaccine Storage and Handling
- Administration
- **Scheduling**
- Documentation



A clinician's best friend...

CDC's "Recommended and Minimum Ages and Intervals Between Doses of Routinely Recommended Vaccines"

www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/A/age-interval-table.pdf



Vaccine scheduling resources

- IAC's "Vaccine Recommendations" print resources www.immunize.org/handouts/vaccine-recommendations.asp
- IAC's "Clinic Tools: Scheduling Vaccines" web page www.immunize.org/clinic/scheduling-vaccines.asp
- IAC's "Standing Orders" web page www.immunize.org/standing-orders
- IAC's *The Importance of Minimum Ages and Intervals in the Vaccine Schedule* slide set www.immunize.org/catg.d/s8025.pdf



www.immunize.org/catg.d/p2010.pdf



www.immunize.org/catg.d/p2011.pdf



31 <http://eiz.org/administration/schedules-recs>

And/or check with your state immunization registry about when the next dose should be given *(before you give it!)*

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Resources to help immunization providers AVOID errors

- Vaccine Storage and Handling
- Administration
- Scheduling
- **Documentation**

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Vaccine documentation resources

- CDC's "Document the Vaccination(s)" web section (includes info about IIS and VAERS reporting www.cdc.gov/vaccines/hcp/admin/document-vaccines.html)
- CDC's "Standards for Practice: Vaccine Documentation" www.cdc.gov/vaccines/hcp/adults/for-practice/standards/documentation.html

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Vaccine documentation resources

- IAC's "Documenting Vaccination" print resources www.immunize.org/handouts/document-vaccines.asp
- IAC's "Clinic Tools: Documenting Vaccination" web page www.immunize.org/clinic/documenting-vaccination.asp
- IAC's "Vaccine Information Statements" web page www.immunize.org/vis
- IAC's "Screening Checklists" web page www.immunize.org/handouts/screening-vaccines.asp

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Vaccine documentation resources

- *Current Dates of Vaccine Information Statements* www.immunize.org/catg.d/p2029.pdf
- *Decision to Not Vaccinate My Child* www.immunize.org/catg.d/p4059.pdf
- *Vaccine Administration Record for Adults* www.immunize.org/catg.d/p2023.pdf
- *Vaccine Administration Record for Children & Teens* www.immunize.org/catg.d/p2022.pdf
- Screening checklists and more...


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Current Dates of Vaccine Information Statements (VISs) as of March 21, 2018

Check your supply of VISs against this list. If you have outdated VISs, get current versions at www.immunize.org/vis.


Adenovirus	6/11/14	MMRV	2/12/18
Anthrax	3/21/18	Multi-vaccine	11/15/15
Cholera	7/6/17	PCV13	11/15/15
DTap	5/17/07	PPSV	4/24/15
Hib	4/2/15	Polio	7/20/16
Hepatitis A	7/20/16	Rabies	10/6/09
Hepatitis B	7/20/16	Rotavirus	2/23/18
HPV	12/2/16	Td	4/11/17
Influenza	8/7/15	Tdap	2/24/15
Japanese enceph	1/24/14	Typhoid	5/29/12
MenACWY	3/31/16	Varicella	2/12/18
MenB	8/9/16	Yellow fever	3/30/11
MMR	2/12/18	Zoster	2/12/18

Immunization Action Coalition www.immunize.org/img/cip/2018.pdf Item #S8022 (6/18)




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Screening for contraindication and precautions to vaccination, and documenting such, is crucial to avoiding serious errors.




www.immunize.org/handouts/screening-vaccines.asp



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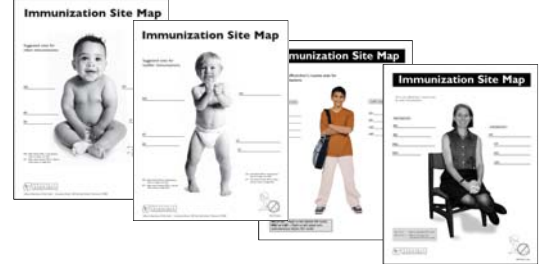
Vaccine documentation resources

- AAP's *Documenting Parental Refusal to Have Their Children Vaccinated* www.aap.org/en-us/documents/immunization_refusaltovaccinate.pdf
- Michigan's *Refusal to Consent to Child & Adolescent Vaccination: Birth through 18 years* (also available in Spanish and Arabic) and *Refusal to Consent to Adult Vaccination: 19 Years and Older* www.aimtoolkit.org/health-care/vaccine-administration.php




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Immunization Site Maps




www.immunize.org/clinic/documenting-vaccination.asp



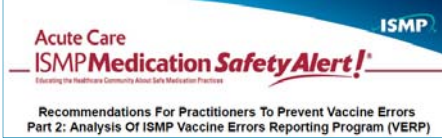
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Additional general resources

- ACIP's *General Best Practice Guidelines for Immunization* www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html
- CDC's "Pink Book" www.cdc.gov/vaccines/pubs/pinkbook/index.html#chapters
- CDC's "Immunization Schedules" web section www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html
- IAC's "Ask the Experts" web section www.immunize.org/askexperts
- IAC's *To Err Is Human; Not To Err Is Better!* slide set www.immunize.org/catg.d/s8020.pdf



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Acute Care ISMP Medication Safety Alert!

Recommendations For Practitioners To Prevent Vaccine Errors
Part 2: Analysis Of ISMP Vaccine Errors Reporting Program (VERP)

In March 2015, ISMP published an excellent guide titled *Recommendations For Practitioners To Prevent Vaccine Errors*

www.ismp.org/newsletters/acute-care/showarticle.aspx?id=104



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Questions?

- Email CDC's experts: nipinfo@cdc.gov.
- Contact your vaccine representative or call the manufacturer.
- Call your state's immunization program manager (contact information for can be found at www.immunize.org/coordinators).
- Email IAC: admin@immunize.org



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