

**To Err Is Human;  
Not To Err Is Better!  
Vaccination Errors and How to  
Prevent Them: The 2010 Edition**

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CDC National Immunization Conference  
Atlanta, Georgia  
April 19, 2010**

**With thanks to**

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# Types of vaccination errors

- Storage and handling
- Administration
- Scheduling
- Documentation



# Vaccine storage and handling



- Vaccines are fragile and must be kept in recommended range of temperatures at all times
- Vaccines are expensive and must be protected
- Better to **not vaccinate** than to administer a dose of damaged vaccine



# Repercussions of storage and handling errors

- Financial loss
- Patients inadequately protected from disease
- Recall of patients who received compromised vaccine
- Need to explain to some irate parents why their children must repeat the vaccine doses.
- The media may provide your practice with some undesirable publicity.



# Negative publicity

- “1,900 doses of flu vaccine spoil in hospital’s faulty fridge” (West Allis, WI; 11/3/04)
- “Kaiser mishandles flu vaccine” (Fresno, CA; 12/15/04)
- “Storage errors cause thousands to be vaccinated again” (Knoxville, TN; 1/21/05)
- “U.S. doctor accused of giving last year’s flu vaccine” (Bellingham, WA; 11/6/04)
- “Frozen vaccine could cost state more than \$30,000” (Arkansas; 11/19/04)



# From our IAC email archive...



**HELP!**

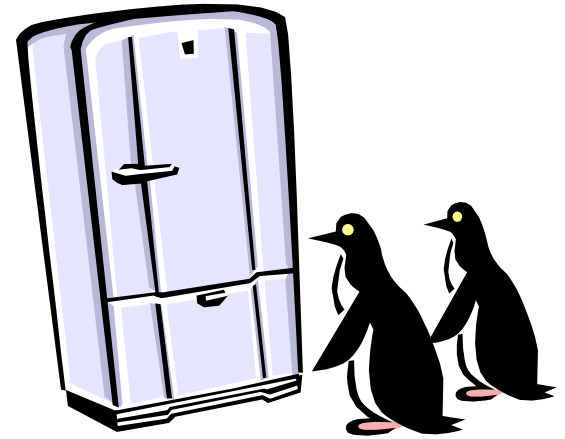




**HELP!** “We have a local practice where their refrigerator temperatures were too cold for an extended period. All the vaccines that were given for many months are now considered invalid. They have many toddlers who received many doses of vaccines, all of which were stored improperly...”



# How to avoid storage and handling problems



- Assign a “vaccine manager” to be responsible for taking care of vaccines and training all staff about safeguarding vaccines
- Make sure your refrigerator and freezer are suitable for vaccines
- Use only certified calibrated thermometers
- Monitor and record refrigerator and freezer temperatures twice daily and **review** the results twice a day
- Take **immediate** action for out-of-range temperatures
- Develop a vaccine emergency plan

# Take **immediate** action for out-of-range temperatures

## Temperature Log for Vaccines (Fahrenheit)

Month/Year: August, 2004 Days 1-15

\*Instructions: Place an "X" in the box that corresponds with the temperature. The hatched zones represent unacceptable temperature ranges. If the temperature recorded is in the hatched zone: 1. **Store the vaccine under proper conditions as quickly as possible.** 2. **Call the vaccine manufacturer(s) to determine whether the potency of the vaccine(s) has been affected.** 3. **Call the immunization program at your local health department for further assistance: (404) 555-8212.** and 4. **Document the action taken on the reverse side of this log.**

Day of Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Exact Time	Time	Time	Time	Time	Time										
Temp	am - pm	am - pm	am - pm	am - pm	am - pm										
49°															
48°															
47°															
46°															
45°															
44°															
43°															
42°															
41°															
40°															
39°															
38°	X	X													
37°			X												
36°			X												
35°			X												
34°				X											
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11°															
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9°															
8°															
7°															
6°															
5°															
4°	X	X													
3°			X												
2°			X												
1°			X	X	X										
0°			X	X	X										
Room temp															
Staff Initials	am - pm	am - pm	am - pm	am - pm	am - pm										

Adapted by the Immunization Action Coalition courtesy of the Michigan Department of Community Health

www.immunize.org/catg.d/p3039.pdf • Item #P3039 (8/04)

# Storage and handling resources from IAC – 1

- Checklist for Safe Vaccine Handling and Storage  
[www.immunize.org/catg.d/p3035.pdf](http://www.immunize.org/catg.d/p3035.pdf)
- Don't Be Guilty of These Errors in Vaccine Storage and Handling  
[www.immunize.org/catg.d/p3036.pdf](http://www.immunize.org/catg.d/p3036.pdf)
- Vaccine Handling Tips  
[www.immunize.org/catg.d/p3048.pdf](http://www.immunize.org/catg.d/p3048.pdf)
- Maintaining the Cold Chain During Transport  
[www.immunize.org/catg.d/p3049.pdf](http://www.immunize.org/catg.d/p3049.pdf)
- Emergency Response Worksheet  
[www.immunize.org/catg.d/p3051.pdf](http://www.immunize.org/catg.d/p3051.pdf)



# Storage and handling resources from IAC – 2

- Temperature Log for Vaccines (Fahrenheit)  
[www.immunize.org/catg.d/p3039.pdf](http://www.immunize.org/catg.d/p3039.pdf)
- Temperature Log for Vaccines (Celsius)  
[www.immunize.org/news.d/celsius.pdf](http://www.immunize.org/news.d/celsius.pdf)
- Storage and handling materials, more  
[www.immunize.org/printmaterials/topic\\_storage.asp](http://www.immunize.org/printmaterials/topic_storage.asp)



# Storage and handling resources - CDC

CDC's comprehensive "Vaccine Storage and Handling Training Material Toolkit" can be accessed online at

[www2a.cdc.gov/vaccines/ed/shtoolkit](http://www2a.cdc.gov/vaccines/ed/shtoolkit)

Vaccine Management: Recommendations for Storage and Handling of Selected Biologics

[www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/C/storage-handling.pdf](http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/C/storage-handling.pdf)



# Types of vaccination errors

- Storage and handling
- Administration
- Scheduling
- Documentation



# Types of Administration Errors

- Wrong vaccine or wrong diluent
- Wrong dosage
- Expired vaccine
- Wrong route / site / needle size
- Wrong time
- Wrong patient



# “5 Rights” Framework

- **The Right Drug**
- **The Right Dose**
- **The Right Route**
- **The Right Time**
- **The Right Patient**
  
- *The Right Technique*
- *The Right Documentation*



“Pediatric vaccination errors: Application of the ‘5 rights’ framework to a national error reporting database,” *Vaccine* 27 (2009) 3890-3896

# Most common error – wrong vaccine

A study using the largest medication error reporting database in the U.S. found that administration of the wrong vaccine was commonly reported.

Such errors usually involved vaccines whose generic or trade names looked or sounded alike (Tdap and DTaP; Adacel and Daptacel) or those with similar packaging.

“Pediatric vaccination errors: Application of the ‘5 rights’ framework to a national error reporting database,” Vaccine 27 (2009) 3890-3896



Is it  
Tdap,  
DTaP,  
or Td?

# Check Your Vials: is it Tdap DTaP or Td?

## Tdap: Tetanus, Reduced Diphtheria, Acellular Pertussis

**ADACEL™ (sanofi pasteur)**  
Ages 11-64 years



**Boostrix® (GlaxoSmithKline)**  
Ages 10-64 years



## Preteens - Adults

## DTaP: Diphtheria, Tetanus, Acellular Pertussis

**DAPTACEL® (sanofi pasteur)**  
Ages 6 weeks up to 7 years



**TRIPEDIA® (sanofi pasteur)**  
Ages 6 weeks up to 7 years



## Infants - Young Children

**Infanrix® (GlaxoSmithKline)**  
Ages 6 weeks up to 7 years



**Pediarix® (GlaxoSmithKline)**  
Ages 6 weeks up to 7 years



**Pentacel® (sanofi pasteur)**  
Ages 6 weeks up to 5 years



**Kinrix® (GlaxoSmithKline)**  
Ages 4 years through 6 years



## Td: Tetanus, Diphtheria

**Td (sanofi pasteur)**  
Ages 7 years and older



Age indications for use of products in the VFC program may differ from age indications on this guide or in the package inserts. Not all formulations are available from the VFC Program. Questions: Toll-free: 877-2Get-VFC (877-243-8832)

California Department of Public Health, Immunization Branch IMM-508 (6/09)

Check  
the vial  
3 times!



**HELP!** “A community health center in our area inadvertently gave a 5-year-old a dose of Tdap, instead of a DTaP. What is their next best step to take under this circumstance?”

**HELP!** “Someone in our clinic gave a 50-year-old DTaP instead of Tdap. How should this be handled?”



# What to do about DTaP and Tdap errors

## Error

## Action

DTaP given to person  $\geq 7$  yrs

Count dose as valid

Tdap given to child  $< 7$  yrs as DTaP #1, 2, or 3

Do not count dose; give DTaP now

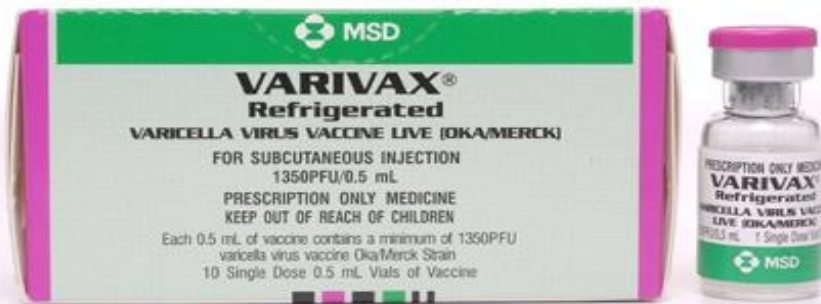
Tdap given to child  $< 7$  yrs as DTaP #4 or 5

Count dose as valid

Tdap given to child 7-9 yrs

Count dose as valid

# Another source of confusion: varicella-containing vaccines



Varivax (chickenpox)  
(12 mos of age and older)



Zostavax (shingles)  
(60 yrs of age and older)



**HELP!** “One of the nurses gave a 1-year-old Zostavax vaccine. She knew it wasn't Varivax, but the physician told her it was ‘basically the same thing’ and to give it. I know this was a HUGE medication error. Does the dose count?”

## ANSWER

Yes, this is a serious vaccine administration error. The event should be documented and procedures put in place to prevent this from ever happening again. Zostavax vaccine contains about 14 times as much varicella antigen as Varivax. The dose should be counted as valid.





**HELP!** “A 60-year-old patient was given varicella instead of zoster vaccine. Does the patient still need zoster vaccine? If so, how long an interval should we wait after varicella vaccine before the zoster vaccine?”

## **ANSWER**

The dose should is not valid and the patient should be given a dose of zoster vaccine during the same visit. If the error is not immediately detected, a dose of zoster vaccine should be administered as soon as feasible but not within 28 days of the varicella vaccine dose to prevent potential interference of 2 doses of live attenuated virus.



# More errors... using the wrong diluents

## Lyophilized (freeze-dried) vaccine + diluent

ActHIB<sup>®</sup> + 0.4% Sodium chloride

Hiberix + 0.9% Sodium chloride

TriHIBit = ActHIB<sup>®</sup> + Tripedia<sup>®</sup>

Pentacel = ActHIB +  
DTaP(Daptacel)/IPV

Rotarix = RV1 + Sterile water/  
calcium carbonate/ xanthan

MMR + Sterile water

Varivax + Sterile water

ProQuad<sup>®</sup> = MMRV + Sterile  
water

Zostavax<sup>®</sup> + Sterile water

Menomune<sup>®</sup> + Sterile water

Menveo = Serogroup A +  
Serogroups C/Y/W-135

# Diluents are not interchangeable

- If the wrong diluent is inadvertently used, the immunization needs to be repeated.
- The diluent for MMR, MMRV, Var, and Zos are the same (sterile water). If an error occurs among these, the dose will count





**HELP!** “One of the nursing staff reconstituted ActHib with the sterile water diluent from MMR instead of 0.4% sodium chloride. Does it need to be repeated or will it be okay?”

## **ANSWER**

If the wrong diluent is mistakenly used, the vaccination needs to be repeated. The only exception is MMR, MMRV, Var, and Zos. The diluent is the same (sterile water) and made by the same company.



# Reconstituted vaccine timeline

- Live virus vaccines and some inactivated vaccines must be administered within a certain time limit after reconstitution
- If not administered within the time limit, these vaccinations need to be **discarded**.



# Time limits for using vaccines after reconstitution

- Varicella  $\leq 30$  min (and protect from light)
- Zostavax  $\leq 30$  min (and protect from light)
- MMRV  $\leq 30$  min (and protect from light)
- MMR  $\leq 8$  hrs (and protect from light)
- Pentacel – administer immediately (within 30 min)
- Menomune single dose vial  $\leq 30$  min
- Menveo – give ASAP but OK for up to 8hrs
- ActHib and Hiberix – within 24hrs
- TriHIBit  $\leq 30$  min





# Giving the wrong vaccine

**HELP!** “Yesterday my 18-month-old’s pediatrician informed me that they made a mistake with her vaccines. They gave her two doses of Prevnar and did not vaccinate for Hib. Will this harm my child? I am very concerned for my child and the impact it could have on her.”



# Giving the wrong vaccine will rarely cause a serious complication, but...

- Extra dose may lead to more vigorous local reaction
- Patient may be left unprotected against disease
- Additional cost for wrong dose
- Inconvenience to patient or parent
- May cause loss of confidence in provider or a dissatisfied parent





# Another administration error: giving the wrong dose

**HELP!** “If an adult patient got a child’s dose of hepatitis B vaccine, should he be given an adult dose? If so, how soon?”

**ANSWER:** If you give less than a full age-appropriate dose of any vaccine, the dose is invalid. You should revaccinate the person with the appropriate dose as soon as feasible.



# Hepatitis A & B Vaccines

Be sure your patient gets the correct dose!

Recommended dosages and schedules of hepatitis A vaccines					
Vaccine	Age group	Dose	Volume	# Doses	Dosing Interval
Havrix (GlaxoSmithKline)	1-18 yrs	720 ELISA Units	0.5 mL	2	0, 6-12 mos
	19 yrs & older	1440 ELISA Units	1.0 mL	2	0, 6-12 mos
Vaqta (Merck)	1-18 yrs	25 Units	0.5 mL	2	0, 6-18 mos
	19 yrs & older	50 Units	1.0 mL	2	0, 6-18 mos

Recommended dosages and schedules of hepatitis B vaccines					
Vaccine	Age group	Dose	Volume	# Doses	Schedule/Dosing Interval
Engerix-B (GlaxoSmithKline)	0-19 yrs	10 µg	0.5 mL	3	Age: birth, 1-4, 6-18 mos Dose intervals for older children: 0, 1-2, 4 mos*
	20 yrs & older	20 µg	1.0 mL	3	Dose interval: 0, 1, 6 mos*
Recombivax HB (Merck)	0-19 yrs	5 µg	0.5 mL	3	Age: birth, 1-4, 6-18 mos Dose intervals for older children: 0, 1-2, 4 mos*
	11-15 yrs	10 µg	1.0 mL	2	Dose intervals: 0, 4-6 mos*
	20 yrs & older	10 µg	1.0 mL	3	Dose intervals: 0, 1, 6 mos*

**Notes:** For adult dialysis patients, the Engerix-B dose required is 40µg/2.0mL (not the adult 20µg/mL formulation) on a schedule of 0, 1, 2, and 6 months. For Recombivax HB, a special formulation for dialysis patients is available. The dose is 40µg/1.0mL and is given on a schedule of 0, 1, and 6 months.

\*The schedule for administering hepatitis B vaccine is flexible and can vary.

Combinations using hepatitis A and/or hepatitis B vaccines					
Vaccine	Age group	Volume	# Doses	Schedule/Dosing Interval	
Comvax** Hib-HepB (Merck)	6 wks - 4 yrs	0.5 mL	3	Age: 2, 4, 12-15 mos	
Pediarix** DTaP-HepA-IPV (GlaxoSmithKline)	6 wks - 6 yrs	0.5 mL	3	Age: 2, 4, 6 mos	
Twintrix HepA-HepB (GlaxoSmithKline)	18 yrs & older	1.0 mL	3	Dose intervals: 0, 1, 6 mos	
		1.0 mL	4	Dose intervals: 0, 7, 21-30 days, 12 mos	

Licensed combination vaccines may be used whenever any component of the combination is indicated and its other component(s) is/are not contraindicated. The use of licensed combination vaccines is preferred over separate injection of their equivalent component vaccines.

\*\*Cannot be used for the hepatitis B vaccine birth dose and cannot be administered before age 6 weeks. Engerix-B or Recombivax HB should be used for the hepatitis B vaccine birth dose.

**Notes:**

\* Formulation of Hepatitis A Through Acute or Chronic Infections. *Journal of Infectious Diseases*, July 15, 2002; 185: 1622-1627.

\*\* A Combination Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection. *Journal of Infectious Diseases*, July 15, 2002; 185: 1622-1627.

\*\* A Combination Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection. *Journal of Infectious Diseases*, July 15, 2002; 185: 1622-1627.

\*\* *Journal of Infectious Diseases*, 2002; December 15, 2002; 185: 1622-1627.

\*\* *Journal of Infectious Diseases*, 2002; December 15, 2002; 185: 1622-1627.

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\*\* *Journal of Infectious Diseases*, 2002; December 15, 2002; 185: 1622-1627.

What hepatitis B question is asked over and over and over again?

Robin, it's been a year since my patient had his first hepatitis B shot. Should I start the series over again?



Holy shot in the arm. Batman! How many times do I have to tell you! You don't have to restart the series! As with all other vaccines, you just continue from where you left off.



Don't restart the series!




# Error: Giving vaccine to a patient with a contraindication

- Use a checklist to screen every patient for contraindications and precautions prior to vaccination

Patient name: \_\_\_\_\_ Date of birth: \_\_\_\_/\_\_\_\_/\_\_\_\_  
(mo.) (day) (yr)

### Screening Questionnaire for Child and Teen Immunization



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

	Yes	No	Don't Know
1. Is the child sick today?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Does the child have allergies to medications, food, or any vaccine?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Has the child had a serious reaction to a vaccine in the past?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Has the child had a health problem with asthma, lung disease, heart disease, kidney disease, metabolic disease (e.g., diabetes), or a blood disorder?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. If the child to be vaccinated is between the ages of 2 and 4 years, has a healthcare provider told you that the child had wheezing or asthma in the past 12 months?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the child had a seizure, brain, or other nervous system problem?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Does the child have cancer, leukemia, AIDS, or any other immune system problem?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Has the child taken cortisone, prednisone, other steroids, or anticancer drugs, or had radiation treatments in the past 3 months?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Has the child received a transfusion of blood or blood products, or been given immune (gamma) globulin or an antiviral drug in the past year?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is the child/teen pregnant or is there a chance she could become pregnant during the next month?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Has the child received vaccinations in the past 4 weeks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Form completed by: \_\_\_\_\_ Date: \_\_\_\_\_  
Form reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

**Did you bring your child's immunization record card with you?** yes  no


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

Information received from the Centers for Disease Control and Prevention, April 2009. www.immunize.org/catg.d/p4060.pdf • Item #P4060 (4/09)

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Patient name: \_\_\_\_\_ Date of birth: \_\_\_\_/\_\_\_\_/\_\_\_\_  
(mo.) (day) (yr)

### Screening Questionnaire for Adult Immunization



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

	Yes	No	Don't Know
1. Are you sick today?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Do you have allergies to medications, food, or any vaccine?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Have you ever had a serious reaction after receiving a vaccination?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do you have a long-term health problem with heart disease, lung disease, asthma, kidney disease, metabolic disease (e.g., diabetes), anemia, or other blood disorder?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Do you have cancer, leukemia, AIDS, or any other immune system problem?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Do you take cortisone, prednisone, other steroids, or anticancer drugs, or have you had radiation treatments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Have you had a seizure, brain, or other nervous system problem?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. During the past year, have you received a transfusion of blood or blood products, or been given immune (gamma) globulin or an antiviral drug?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. For women: Are you pregnant or is there a chance you could become pregnant during the next month?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Have you received any vaccinations in the past 4 weeks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Form completed by: \_\_\_\_\_ Date: \_\_\_\_\_  
Form reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

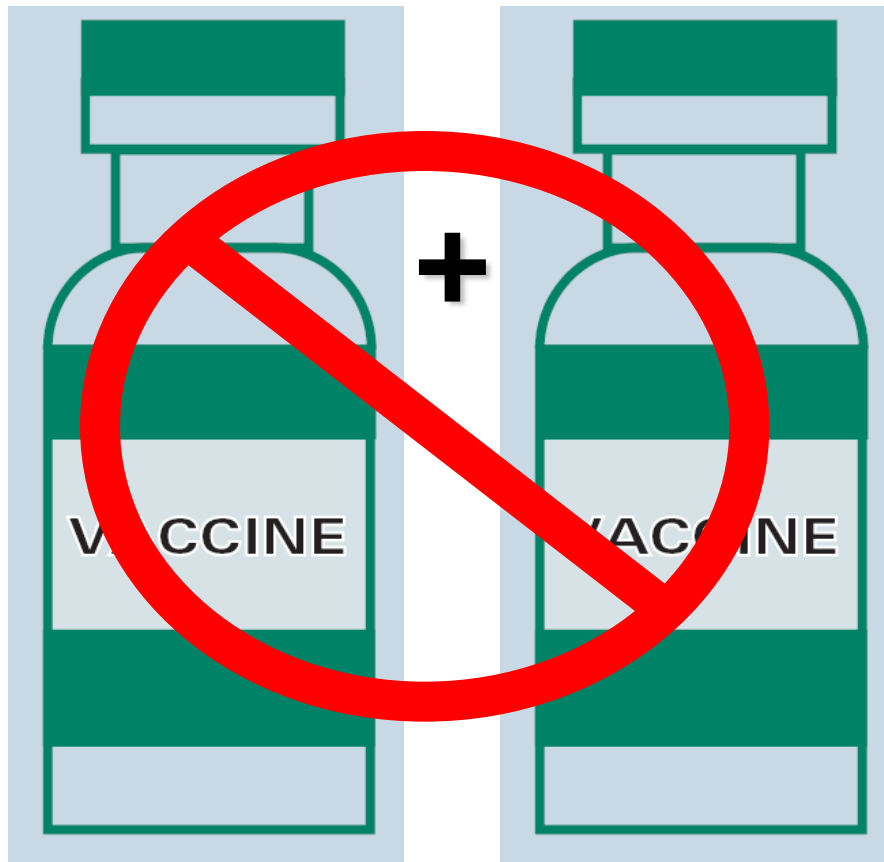
**Did you bring your immunization record card with you?** yes  no

It is important for you to have a personal record of your vaccinations. If you don't have a personal record, ask your healthcare provider to give you one. Keep this record in a safe place and bring it with you every time you seek medical care. Make sure your healthcare provider records all your vaccinations on it.

Information received from the Centers for Disease Control and Prevention, April 2009. www.immunize.org/catg.d/p4065.pdf • Item #P4065 (4/09)

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# Error: combining vaccines into one syringe that shouldn't be together



- Two different vaccines should **NEVER** be combined in the same syringe unless FDA licensed for use in this way

# Another administration error: using expired vaccine

Vaccine Expiration Date:

**8/15/06**

Note Use through  
**August 15, 2006**. Do  
**NOT** use on or after  
August 16, 2006



Vaccine Expiration Date:

**8/06**

Note Use through  
**August 31, 2006**. Do  
**NOT** use on or after  
September 1, 2006



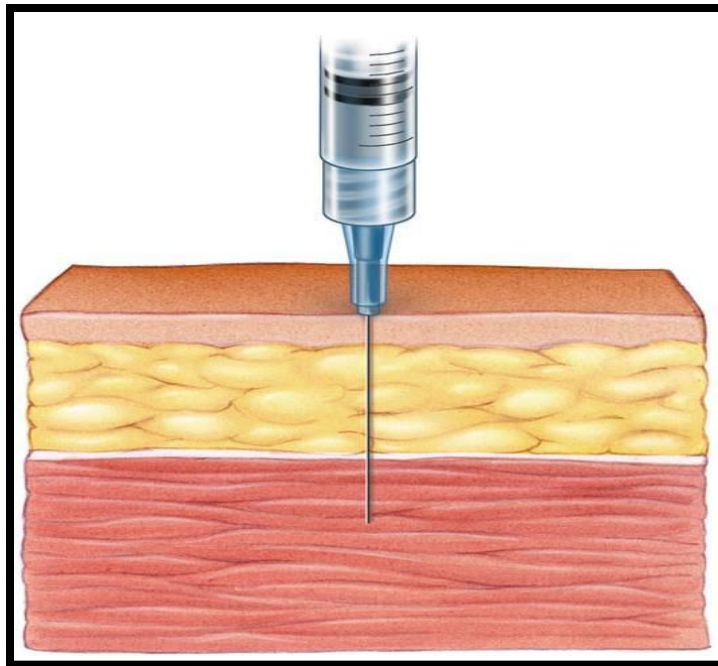
**HELP!** “A physician just called and gave a child a dose of expired vaccine. I am assuming the dose should be re-administered. Please advise.”

## ANSWER

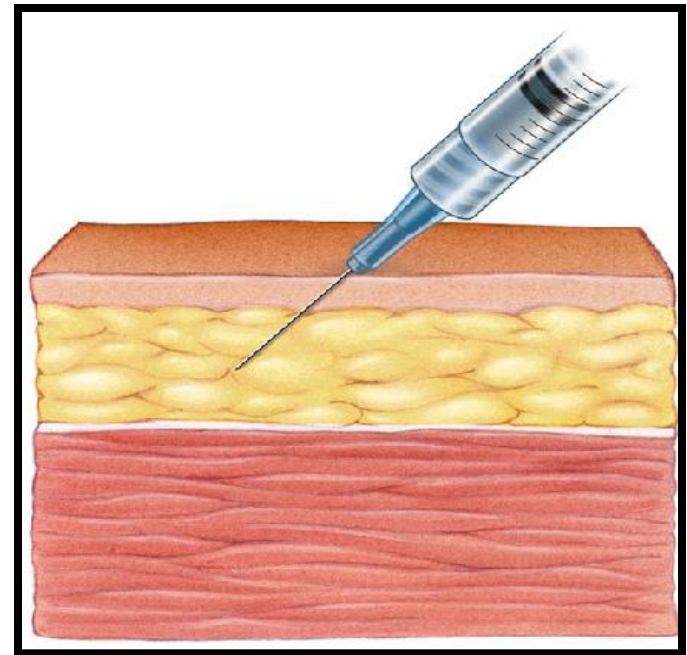
The dose should be repeated. If the expired dose is a **live** virus vaccine (e.g., MMR, Var) you must wait at least 4 weeks after the previous (expired) dose was given before repeating it. If the expired dose was an **inactivated** vaccine, it can be given on the same day or any other time.



# Another administration error: incorrect route, site, or needle size



**intramuscular**



**subcutaneous**

# Injectable Vaccines – Which route is right?

## Intramuscular

- DTaP, DT, Td, Tdap
- HepA
- HepB
- Hib
- HPV
- Influenza (TIV)
- MCV4
- PCV
- DTaP + HepB + IPV (Pediatrix)
- DTaP + Hib + IPV (Pentacel)
- DTaP + IPV (Kinrix)
- HepA + HepB (Twinrix)

## SubC

- MMR
- Var
- MMRV
- Zos
- MPSV4

## IM / SC

- IPV
- PPSV23



**HELP!** “One of our nurses accidentally gave Zostavax IM instead of SC. Can you tell me what we need to do?”

## ANSWER

Vaccines should always be given by the route recommended by the manufacturer. However, ACIP says vaccines given by the wrong route be counted as valid with two exceptions -- **HepB or rabies vaccine -- if not given IM should be repeated.**



# Vaccine administration resources from IAC

- How to Administer Intramuscular (IM) Injections  
[www.immunize.org/catg.d/p2020.pdf](http://www.immunize.org/catg.d/p2020.pdf)
- How to Administer IM and SC Injections to Adults  
[www.immunize.org/catg.d/p2020a.pdf](http://www.immunize.org/catg.d/p2020a.pdf)
- Administering Vaccines to Adults: Dose, Route, Site, Needle Size, and Preparation  
[www.immunize.org/catg.d/p3084.pdf](http://www.immunize.org/catg.d/p3084.pdf)
- Administering Vaccines: Dose, Route, Site, and Needle Size [www.immunize.org/catg.d/p3085.pdf](http://www.immunize.org/catg.d/p3085.pdf)



# Vaccine administration resource from California Dept. of Health Services



"Immunization Techniques: Safe, Effective, Caring" is a 35-minute DVD that teaches best practices about how to administer IM and SC vaccines. It is designed for use as a "hands-on" instructional program for staff

The DVD discusses the following:

- Anatomic sites
- Choice of needle size
- Routes of administration
- How to draw up doses of vaccine

[www.immunize.org/shop](http://www.immunize.org/shop)



# Types of vaccination errors

- Storage and handling
- Administration
- Scheduling
- Documentation



# Common scheduling errors

- Not giving HepB #1 in the hospital before discharge
- Completing infant HepB series before age 24 wks
- Giving rotavirus vaccine after 8 months 0 days
- Giving the 4<sup>th</sup> dose of DTaP before age 12 mos or less than 6 months after 3<sup>rd</sup> dose
- Giving last dose of IPV <6mos after previous dose
- Giving HPV #3 sooner than 24 wks after HPV #1
- Giving PPSV every 5 years



# A vaccinator's best reference on vaccine intervals

## 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](http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/A/age-interval-table.pdf)

Recommended and Minimum Ages and Intervals Between Doses of Routinely Recommended Vaccines <sup>1</sup>				
Vaccine and dose number	Recommended age for this dose	Minimum age for this dose	Recommended interval to next dose	Minimum interval to next dose
Hepatitis B (HepB)-1 <sup>1</sup>	Birth	Birth	1-4 months	4 weeks
HepB-2	1-2 months	4 weeks	2-17 months	8 weeks
HepB-3 <sup>1</sup>	6-18 months	24 weeks	—	—
Diphtheria-tetanus-acellular pertussis (DTaP)-1 <sup>1</sup>	2 months	6 weeks	2 months	4 weeks
DTaP-2	4 months	10 weeks	2 months	4 weeks
DTaP-3	6 months	14 weeks	6-12 months <sup>4</sup>	6 months <sup>4</sup>
DTaP-4	15-18 months	12 months	3 years	6 months <sup>4</sup>
DTaP-5	4-6 years	4 years	—	—
<i>Haemophilus influenzae</i> type b (Hib)-1 <sup>1,4</sup>	2 months	6 weeks	2 months	4 weeks
Hib-2	4 months	10 weeks	2 months	4 weeks
Hib-3 <sup>1</sup>	6 months	14 weeks	6-9 months <sup>4</sup>	8 weeks
Hib-4	12-15 months	12 months	—	—
Inactivated poliovirus (IPV)-1 <sup>1</sup>	2 months	6 weeks	2 months	4 weeks
IPV-2	4 months	10 weeks	2-14 months	4 weeks
IPV-3	6-18 months	14 weeks	3-5 years	6 months
IPV-4	4-6 years	4 years	—	—
Pneumococcal conjugate (PCV)-1 <sup>1</sup>	2 months	6 weeks	2 months	4 weeks
PCV-2	4 months	10 weeks	2 months	4 weeks
PCV-3	6 months	14 weeks	6 months	8 weeks
PCV-4	12-15 months	12 months	—	—
Measles-mumps-rubella (MMR)-1 <sup>1</sup>	12-15 months	12 months	3-5 years	4 weeks
MMR-2 <sup>2</sup>	4-6 years	13 months	—	—
Varicella (Var)-1 <sup>1</sup>	12-15 months	12 months	3-5 years	12 weeks <sup>3</sup>
Var-2 <sup>2</sup>	4-6 years	15 months	—	—
Hepatitis A (HepA)-1 <sup>1</sup>	12-23 months	12 months	6-18 months <sup>4</sup>	6 months <sup>4</sup>
HepA-2	18-41 months	18 months	—	—
Influenza, inactivated (TI) <sup>1,6</sup>	6-59 months	6 months <sup>11</sup>	1 month	4 weeks
Influenza, Live attenuated (LAIV) <sup>1,6</sup>	—	2 years	1 month	4 weeks
Meningococcal Conjugate (MCV)	11-12 years	2 years	—	—
Meningococcal Polysaccharide (MPSV)-1	—	2 years	5 years <sup>12</sup>	5 years <sup>12</sup>
MPSV-2 <sup>13</sup>	—	7 years	—	—
Tetanus-diphtheria (Td)	11-12 years	7 years	10 years	5 years
Tetanus-diphtheria-acellular pertussis (Tdap) <sup>14</sup>	≥11 years	10 years	—	—
Pneumococcal polysaccharide (PPSV)-1	—	2 years	5 years	5 years
PPSV-2 <sup>15</sup>	—	7 years	—	—



# Scheduling resources from IAC and CDC

- IAC's Summary of Recommendations for Childhood and Adolescent Immunization [www.immunize.org/childrules](http://www.immunize.org/childrules)
- IAC's Summary of Recommendations for Adult Immunization [www.immunize.org/adultrules](http://www.immunize.org/adultrules)
- U.S. Immunization Schedule for Children and Teens – 2010 and U.S. Immunization Schedule for Adults – 2010 [www.immunize.org/cdc/schedules](http://www.immunize.org/cdc/schedules)



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# Errors in following legal requirements for VIS use

- Not offering the VIS to the vaccinee or parent
- Not providing the VIS **prior to** vaccination
- Not providing VISs **every time** a vaccine is given
- Not recording all needed information in patient's medical record



# Legally required information to document on the patient chart

- Edition date of the individual VIS
- Date the VIS was given out
- Date vaccine is administered
- Vaccine manufacturer and lot #
- Name, address, & title of vaccinator



**HELP!** “My 2-month-old was recently inoculated at his pediatrician’s office. The next day, my son spiked a high fever. I was extremely concerned and called our local hospital and found out that I should have been given a VIS for each of the vaccines my child got. I brought this matter up with the doctor’s office and was told by the office manager that she didn’t know of any law that mandated they give information sheets out... My question is to whom do I report this? I no longer take my child to their office, but I want them to start doing things right.”

A vaccine side effect becomes a big problem because the parent wasn’t given a VIS...



# “5 Rights” Framework

- **The Right Drug**
- **The Right Dose**
- **The Right Route**
- **The Right Time**
- **The Right Patient**
  
- *The Right Technique*
- *The Right Documentation*



“Pediatric vaccination errors: Application of the ‘5 rights’ framework to a national error reporting database,” *Vaccine* 27 (2009) 3890-3896

# Stay current!

- Consult CDC's "Pink Book"  
[www.cdc.gov/vaccines/pubs/pinkbook/pinkchapters.htm](http://www.cdc.gov/vaccines/pubs/pinkbook/pinkchapters.htm)
- Consult relevant ACIP recommendations  
[www.immunize.org/acip](http://www.immunize.org/acip)
- Consult IAC's "Ask the Experts" Q&As  
[www.immunize.org/askexperts](http://www.immunize.org/askexperts)
- Subscribe to *IAC Express* for weekly updates  
[www.immunize.org/subscribe](http://www.immunize.org/subscribe)



# Need more help?

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



# The End

