

## VACCINE STANDING ORDERS

VACCINE	BRAND NAME	DATE LICENSED	COMPANY
IPV	IPOL	12-01-90	Sanofi Pasteur
DTaP	Tripedia	07-31-96	Sanofi Pasteur
DTaP	Daptacel	05-14-02	Sanofi Pasteur
DTaP	Infanrix	01-29-97	GlaxoSmithKline
DTaP-HepB-IPV	Pediarix	12-20-02	GlaxoSmithKline
DTaP-IPV-Hib	Pentacel	06-01-08	Sanofi Pasteur
DTaP-IPV	Kinrix	06-24-08	GlaxoSmithKline
DTaP-Hib	Trihibit	09-27-96	Sanofi Pasteur
DT	DT	09-18-84	Sanofi Pasteur
Td	Td	01-03-78	Sanofi Pasteur
Tdap	Boostrix	05-17-05	GlaxoSmithKline
Tdap	ADACEL	06-10-05	Sanofi Pasteur
Hepatitis B	Engerix-B	08-28-89	GlaxoSmithKline
Hepatitis B	Recombivax HB	07-23-86	Merck
Hib-HepB	Comvax	10-02-96	Merck
Hib	ACTHib	03-30-93	Sanofi Pasteur
Hib	PedvaxHIB	12-20-89	Merck
Hepatitis A	Havrix	02-22-95	GlaxoSmithKline
Hepatitis A	Vaqta	03-29-96	Merck
MMR	MMR II	04-22-71	Merck
Varicella	Varivax	03-17-95	Merck
MMRV	ProQuad	09-06-05	Merck
PCV7	Prevnar	02-01-00	Wyeth
MCV4	Menactra	01-14-05	Sanofi Pasteur
Rotavirus	RotaTeq (RV5)	02-03-06	Merck
Rotavirus	Rotarix (RV1)	04-03-08	GlaxoSmithKline
(HPV) Human Papillomavirus	Gardasil	06-08-06	Merck
Influenza	FluMist	06-17-03	MedImmune
Influenza	Fluzone	12-09-99	Sanofi Pasteur
Influenza	Fluvirin	09-14-05	Novartis

## VACCINE ADMINISTRATION

- The recommendations on route, site, and dosages of immunobiologics are derived from theoretical considerations, experimental trials, and clinical experience. The Advisory Committee on Immunization Practices (ACIP) **strongly discourages** any variations from the recommended route, site, volume, or number of doses of any vaccine.
- For all intramuscular (IM) injections, the needle should be long enough to reach the muscle mass and prevent vaccine from seeping into subcutaneous tissue. An individual decision on needle size and site of injection must be made for each person based on **age**, the **volume** of the material to be administered, the **size of the muscle**, and the **depth below the muscle surface** into which the material is to be injected.
- Subcutaneous (SQ) injections are usually administered into the thigh of infants and in the deltoid area of older children and adults. A 5/8 to 3/4 inch, 23 to 25 gauge needle should be inserted into the tissues below the dermal layer of the skin.
- The anterolateral aspect of the thigh is the recommended site for intramuscular injections of infants.
- The deltoid may be used for intramuscular injections of toddlers (**if the muscle mass is adequate**), and older children.

Source: Centers for Disease Control and Prevention. General Recommendations on Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1994;43 (No. RR-1): 6-8.

### **Kansas Immunization Program/Recommendations for IM/SQ Injections**

AGE	ROUTE	SITE	NEEDLE GAUGE	NEEDLE LENGTH
Infants	IM	Thigh	22-25	7/8-1 inch
	SQ	Thigh	23-25	5/8-3/4 inch
Toddlers	IM	Thigh	22-25	7/8-1 1/4 inches
	SQ	Deltoid	23-25	5/8-3/4 inch
Older Children	IM	Deltoid	22-25	7/8-1 1/4 inches
	SQ	Deltoid	23-25	5/8-3/4 inch
Adults	IM	Deltoid	20-25	1-1 1/2 inches
	SQ	Deltoid	23-25	5/8-3/4 inch

## Inactivated Poliomyelitis Vaccine (IPV)

Manufacturer Sanofi Pasteur

Brand Name IPOL

Formulation - 10-dose vial

Dosage - 0.5ml

Storage - Refrigerate immediately. Store at 2°-8° C (35°-46° F). Do not freeze.

Injection Site -	Anterolateral thigh or Upper arm	Anterolateral thigh or deltoid
Route -	Subcutaneous (SC)	Intramuscular (IM)
Needle Size -	23 to 25 gauge, 3/8 inch	22 to 25 gauge, 1-1.5 inches

Administration: Simultaneously or at any interval between doses of an inactivated or live antigen.

### Recommended IPV schedule

Dose 1 - 2 months

Dose 2 - 4 months

Dose 3 - 6-18 months

Dose 4 - 4-6 years

### Minimum Interval Schedule:\*

Dose 1 - 6 wks

Dose 2 - 4wks after Dose 1

Dose 3 - 4wks after Dose 2

Dose 4- 6months after Dose 3 and  $\geq$  4yrs of age \*\*

Dose 5 -6 months after Dose 4, if needed

\* The use of the minimum age (6wks) and intervals between the first three doses (4wks) should only be used if:

1. Mass vaccination campaigns to control outbreaks of paralytic polio.
  2. Unvaccinated children who will be traveling in <4weeks to areas where polio is endemic or epidemic.
- ACIP recommends this precaution because shorter intervals and earlier start date lead to lower seroconversion rates.

\*\* *The final dose in the IPV series should be administered at age  $\geq$ 4 years regardless of the number of previous doses.*

Reference: MMWR August 7, 2009 / 58(30);829-830

[http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5830a3.htm?s\\_cid=mm5830a3\\_e](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5830a3.htm?s_cid=mm5830a3_e)

Contraindications to IPV vaccination:

1. Anaphylactic reaction to a previous dose of IPV
2. Hypersensitivity to any component of the vaccine, including 2-phenoxyethanol, formaldehyde, neomycin, streptomycin and polymyxin B.

Precaution to IPV vaccination:

1. Moderate or severe acute illness

## Diphtheria and Tetanus Toxoids and Acellular Pertussis Vaccine (DTaP)

<b>Manufacturer</b>	Sanofi Pasteur
<b>Brand Name</b>	Tripedia
<b>Formulation</b>	10 one-dose vials
<b>Dosage</b>	0.5ml
<b>Storage</b>	Refrigerate immediately. Store at 2°-8° C (35°-46° F). <b>Do not freeze.</b>
<b>Injection Site</b>	Anterolateral aspect of the upper thigh or deltoid
<b>Route</b>	Intramuscular (IM)
<b>Needle Size</b>	22 to 25 gauge, 7/8 to 1¼ inches
<b>Administration</b>	May be administered simultaneously or at any interval between doses with inactivated or live antigen.

### Detailed schedule for Tripedia vaccination of children:

Dose	Customary Age	Minimum Interval
1	2 months	6 weeks or older
2	4 months	4 weeks after first dose
3	6 months	4 weeks after second dose
4*	15-18 months	6 months after third dose
5	4-6 years	6 months after the fourth dose. The fifth dose is not necessary if the fourth dose is administered on or after the 4th birthday.

\*The 4th dose of DTaP may be administered as early as 12 months of age, provided 6 months have elapsed since the 3rd dose, and if the child is considered unlikely to return at 15-18 months of age.

\*If any of the first four doses were a DTP, any licensed DTaP vaccine may be administered for the fifth dose.

### Contraindications to DTaP vaccination:

1. Moderate to severe illness (i.e. child appears ill).
2. Anaphylactic reaction following prior dose of vaccine.
3. Encephalopathy, not due to another cause, occurring within 7 days following DTP/DTaP vaccination.
4. Anaphylactic reaction to thimerosal.

### Precautions to DTaP vaccination:

1. Temperature equal to or greater than 40.5° C (105° F) within 48 hours of previous DTP/DTaP vaccination not due to another identifiable cause.
2. Collapse or shock-like state (hypotonic-hyporesponsive episode) within 48 hours of previous DTP/DTaP vaccination.
3. Persistent, inconsolable crying lasting more than 3 hours, occurring within 48 hours of previous DTP/DTaP vaccination.
4. Convulsions with or without fever occurring within 3 days of previous DTP/DTaP vaccination.
5. Progressive or evolving neurologic disorder.

**DAPTACEL®**  
**Diphtheria and Tetanus Toxoids and Acellular Pertussis Vaccine**  
**DTaP**

<b>Manufacturer</b>	Sanofi Pasteur
<b>Brand Name</b>	DAPTACEL®
<b>Formulation</b>	10 one-dose vials
<b>Dosage</b>	0.5ml
<b>Storage</b>	Refrigerate immediately. Store at 2°-8° C (35°-46° F). <b>Do not freeze.</b>
<b>Injection Site</b>	Anterolateral aspect of the upper thigh or deltoid
<b>Route</b>	Intramuscular (IM)
<b>Needle Size</b>	22 to 25 gauge, 1 -1.5 inch
<b>Administration</b>	May be administered simultaneously or at any interval between doses with inactivated or live antigen.

**Schedule for DAPTACEL vaccination of children:**

<b>Dose</b>	<b>Customary Age</b>	<b>Minimum Interval</b>
Dose 1	2 months	6 weeks or older
Dose 2	4 months	4 weeks after first dose
Dose 3	6 months	4 weeks after second dose
Dose 4	15-18 months	6 months after third dose*
Dose 5	4-6 years	6 months after the fourth dose

The fifth dose is not necessary if the fourth dose was administered on or after the 4th birthday.

\*The 4th dose of DTaP may be administered as early as 12 months of age, provided 6 months have elapsed since the 3rd dose, and if the child is considered unlikely to return at 15-18 months of age.

DTaP series should be completed with the same brand of vaccine if possible however there is limited data that suggests that DTaP interchangeability with other DTaP brands does not adversely affect the safety and immunogenicity of the vaccine.

**Contraindications to DTaP vaccination:**

1. Severe allergic reaction (anaphylactic) to a vaccine component in DAPTACEL® or following prior dose of vaccine.
2. Encephalopathy, not due to another cause, occurring within 7 days following DTP/DTaP vaccination.

**Precautions to DTaP vaccination:**

1. Moderate to severe illness, if vaccination is deferred vaccinate when condition improves
2. Temperature equal to or greater than 40.5° C (105° F) within 48 hours of previous DTP/DTaP vaccination not due to another identifiable cause.
3. Collapse or shock-like state (hypotonic-hyporesponsive episode) within 48 hours of previous DTP/DTaP vaccination.
4. Persistent, inconsolable crying lasting more than 3 hours, occurring within 48 hours of previous DTP/DTaP vaccination.

5. Convulsions with or without fever occurring within 3 days of previous DTP/DTaP vaccination.
6. Evolving neurologic disorder (e.g. uncontrolled epilepsy, infantile spasms, and progressive encephalopathy) a history of seizures that has not been evaluated, or a neurologic event that occurs between doses of pertussis vaccine

Reference: Centers for Disease Control and Prevention. Epidemiology and Prevention of Vaccine-Preventable Diseases. Atkinson W, Wolfe S, Hamborsky J, McIntyre L, eds. 11th ed. Washington DC: Public Health Foundation, 2009

<http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/pert.pdf>

U.S FDA Licenses DAPTACEL® Vaccine for the Fifth Consecutive Dose in the Pediatric DTaP Immunization Series/Sanofi Pasteur

Rev. 09/17/09

## Diphtheria and Tetanus Toxoids and Acellular Pertussis Vaccine (DTaP)

<b>Manufacturer</b>	GlaxcoSmithKline
<b>Brand Name</b>	Infanrix
<b>Formulation</b>	10 1-dose vials
<b>Dosage</b>	0.5ml
<b>Storage</b>	Refrigerate immediately. Store at 2°-8° C (35°-46° F). <b>Do not freeze.</b>
<b>Injection Site</b>	Anterolateral aspect of the upper thigh or deltoid
<b>Route</b>	Intramuscular (IM)
<b>Needle Size</b>	22 to 25 gauge, 7/8 to 1¼ inches
<b>Administration</b>	May be administered simultaneously or at any interval between doses with inactivated or live antigen.

### Routine schedule for DTaP vaccination for children:

<b>Dose</b>	<b>Customary Age</b>	<b>Minimum Interval</b>
1	2 months	6 weeks or older
2	4 months	4 weeks after first dose
3	6 months	4 weeks after second dose
4*	15-18 months	6 months after third dose
5	4-6 years	6 months after the fourth dose. The fifth dose is not necessary if the fourth dose is administered on or after the 4th birthday.

\*The 4th dose of DTaP may be administered as early as 12 months of age, provided 6 months have elapsed since the 3rd dose, and if the child is considered unlikely to return at 15-18 months of age.

\* **May use different brand if necessary to complete the series.** No efficacy or safety data available to this schedule.

\*If any of the first four doses were a DTP, any licensed DTaP vaccine may be administered for the fifth dose.

### Contraindications to DTaP vaccination:

1. Moderate to severe illness (i.e. child appears ill)
2. Anaphylactic reaction following prior dose of vaccine.
3. Encephalopathy, not due to another cause, occurring within 7 days following DTP/DTaP vaccination.
4. Anaphylactic reaction to thimerosal.

### Precautions to DTaP vaccination:

1. Temperature equal to or greater than 40.5° C (105° F) within 48 hours of previous DTP/DTaP vaccination not due to another identifiable cause.
2. Collapse or shock-like state (hypotonic-hyporesponsive episode) within 48 hours of previous DTP/DTaP vaccination.
3. Persistent, inconsolable crying lasting more than 3 hours, occurring within 48 hours of previous DTP/DTaP vaccination.
4. Convulsions with or without fever occurring within 3 days of previous DTP/DTaP vaccination.
5. Progressive or evolving neurologic disorder.

**Diphtheria and Tetanus Toxoids and Acellular Pertussis Vaccine (DTaP)  
Hepatitis B Vaccine, Recombinant (HepB)  
Inactivated Poliomyelitis Vaccine (EIPV)**

<b>Manufacturer</b>	GlaxoSmithKline
<b>Brand Name</b>	PEDIARIX
<b>Formulation</b>	5 one-dose vials Single dose Tip-Lok syringe (no needle)
<b>Dosage</b>	0.5 ml
<b>Storage</b>	Refrigerate immediately. Store at 2°-8° C (35°-46° F). <b>Do not freeze.</b>
<b>Injection Site</b>	Anterolateral aspect of the upper thigh or deltoid
<b>Route</b>	Intramuscular (IM)
<b>Needle Size</b>	22 to 25 gauge, 7/8 to 1¼ inches
<b>Administration</b>	May be administered simultaneously or at any interval between doses of inactivated or live antigen.

**Routine DTaP/HepB/EIPV Combination schedule for vaccination of children:**

<b>Dose</b>	<b>Customary Age</b>	<b>Minimum Interval</b>
1	2 months	6 weeks or older
2	4 months	4 weeks after first dose
3	6 months	8 weeks after second dose

1. PEDIARIX is interchangeable with all US-licensed **EIPV** and **HepB** vaccines

2. PEDIARIX is indicated to complete the first 3 doses of the primary series in infants who started the series with *Infanrix*.

3. Because the pertussis antigen components of PEDIARIX are the same as those in INFANRIX, these children should receive INFANRIX as their fourth and fifth dose of DTaP.

**4. However, if previously administered DTaP vaccine cannot be determined or is not available, any licensed DTaP vaccine may be used to complete the series.** No efficacy or safety data is available for this schedule.

5. A birth dose of monovalent hepatitis B vaccine remains a part of the infant immunization schedule when PEDIARIX is used. Although not labeled for this indication by FDA, PEDIARIX may be used in infants whose mothers are HBsAg positive or whose HBsAg status is not known.

6. Children who have received a 3-dose primary series of PEDIARIX should receive a fourth dose of EIPV at 4 to 6 years of age.

7. PEDIARIX may be administered at 2, 4, and 6 months to infants who received a birth dose of hepatitis B vaccine (total of 4 doses of hepatitis B vaccine)

**Contraindications to DTaP/HepB/EIPV Combination vaccination:**

1. Moderate to severe illness (i.e. child appears ill)
2. Anaphylactic reaction following a prior dose of vaccine
3. Hypersensitivity to yeast, neomycin or polymyxin B
4. Encephalopathy, not due to another cause, occurring within 7 days following a DTP/DTaP vaccination.

**Precautions to DTaP/HepB/EIPV Combination vaccination:**

1. Fever equal to or greater than 40.5° C (105° F) within 48 hours of previous DTP/DTaP vaccination not due to another identifiable cause.
2. Collapse or shock-like state (hypotonic-hyporesponsive episode) within 48 hours of previous DTP/DTaP vaccination.
3. Persistent, inconsolable crying lasting more than 3 hours, occurring within 48 hours of previous DTP/DTaP vaccination.
4. Convulsions with or without fever occurring within 3 days of previous DTP/DTaP vaccination.
5. Progressive or evolving neurologic disorder.

**Diphtheria and Tetanus Toxoids and Acellular Pertussis Vaccine (DAPTACEL)  
Inactivated Poliomyelitis Vaccine (IPOL)  
Haemophilus b Conjugate Vaccine (ActHib)**

**Manufacturer** Sanofi Pasteur

**Brand Name** PENTACEL®

**Formulation** 5 one-dose vials of DTaP/IPV to be used to reconstitute 5 one dose vials of ActHib

**Dosage** 0.5 ml

**Storage** Refrigerate immediately. Store at 2°-8° C (35°-46° F). **Do not freeze.**

**Injection Site** Anterolateral aspect of the upper thigh or deltoid

**Route** Intramuscular (IM)

**Needle Size** 22 to 25 gauge, 7/8 to 1 inches

**Administration** May be administered simultaneously or at any interval between doses of inactivated or live antigen.

**Pentacel® vaccine is indicated for children 6 weeks through 4 years of age**

**Recommended Schedule:**

**Dose 1-** 2 months    **Dose 2** -4 months    **Dose 3-** 6 months    **Dose 4-** 15-18 months

**Minimum Interval:**

**Dose 1-** 6 weeks    **Dose 2-** 4 weeks after first dose    **Dose 3-** 4 weeks after second dose

**Dose 4-** 6 months after third dose and no earlier than 12 months of age

If the primary series has been started with single- antigen vaccines of DTaP, IPV or Hib the series can be completed with PENTACEL®.

Note if the clinic is using both Pediarix (DTaP/IPV/HepB) and Pentacel® (DTaP/IPV/Hib) combination vaccines are overlapping in DTaP and IPV, but Pediarix contains HepB and not Hib. Pentacel contains Hib and not Hep B.

**Contraindications to DTaP-IPV/Hib Combination vaccination:**

1. Anaphylactic reaction following a prior dose of PENTACEL® or any antigens contained in PENTACEL® vaccine
2. Encephalopathy, not due to another cause, occurring within 7 days following a pertussis containing vaccine
3. Progressive neurologic disorder, including infantile spasm, uncontrolled epilepsy, progressive encephalopathy.

Continued

**Diphtheria and Tetanus Toxoids and Acellular Pertussis Vaccine (DAPTCEL)  
Inactivated Poliomyelitis Vaccine (IPOL)  
Haemophilus b Conjugate Vaccine (ActHib)  
PENTACEL®**

**Precautions if the following events occurred 48 hours after receiving pertussis vaccine:**

1. Fever equal to or greater than 40.5° C (105° F) within 48 hours of previous DTaP vaccination not due to another identifiable cause.
2. Collapse or shock-like state (hypotonic-hyporesponsive episode) within 48 hours of previous DTP/DTaP vaccination.
3. Persistent, inconsolable crying lasting more than 3 hours, occurring within 48 hours of previous DTP/DTaP vaccination.
4. Convulsions with or without fever occurring within 3 days of previous DTP/DTaP vaccination.

**Precaution if the following event occurred 6 weeks after receipt of a tetanus toxoid vaccine**

1. Guillain-Barre' syndrome

**Diphtheria and Tetanus Toxoids and Acellular Pertussis Vaccine (DTaP)  
Inactivated Poliovirus Vaccine (IPV)**

<b>Manufacturer</b>	GlaxoSmithKline
<b>Brand Name</b>	Kinrix™
<b>Formulation</b>	10 1-dose vials or 5 prefilled TIP-LOK syringes
<b>Dosage</b>	0.5ml
<b>Storage</b>	Refrigerate immediately. Store at 2°-8° C (36°-46° F). <b>Do not freeze.</b>
<b>Injection Site</b>	Deltoid muscle of the upper arm
<b>Route</b>	Intramuscular (IM)
<b>Needle Size</b>	22 to 25 gauge, 7/8 to 1¼ inches
<b>Administration</b>	May be administered simultaneously or at any interval between doses with inactivated or live antigen.

**Routine schedule for DTaP vaccination for children:**

<b>Dose</b>	<b>Customary Age</b>	<b>Indication</b>
1	4-6 Years (up to 7 <sup>th</sup> Birthday)	5 <sup>th</sup> dose of DTaP and 4 <sup>th</sup> dose of IPV

1. Kinrix™ is indicated for the **5<sup>th</sup> dose of DTaP and 4<sup>th</sup> dose of IPV** in children whose previous DTaP doses have been Infanrix® and/or Pediarix®
2. **If necessary, any available DTaP vaccine may be used to complete the series.** No efficacy or safety data available to this schedule.
3. If any of the first four doses were a DTP, any licensed DTaP vaccine should be administered for the fifth dose.

**\* Contraindications to DTaP vaccination:**

1. Anaphylaxis after a previous dose of any diphtheria toxoid, tetanus toxoid, pertussis or poliovirus-containing vaccine, or to any component of Kinrix™ including neomycin and polymyxin B.
2. Encephalopathy within 7 days of administration of a previous pertussis-containing vaccine
3. Progressive neurologic disorders.

**Precautions to DTaP vaccination:**

1. If any of the following events occurred within 48 hours following a pertussis-containing vaccine, the decision to give KINRIX™ should be based on potential benefits and risks.
  - Temperature  $\geq 40.5^{\circ}$  C (105° F), collapse or shock-like state
  - Inconsolable crying lasting  $\geq 3$ hours
2. If Guillain-Barre´ syndrome occurs within 6 weeks of a prior vaccine containing tetanus toxoid, the decision to give KINRIX™ should be based on potential benefits and risks.
3. For children at higher risk for seizures, an antipyretic may be administered at the time of vaccination.
4. The needleless prefilled syringes contain dry natural latex rubber and may cause allergic reaction.

## **Diphtheria and Tetanus Toxoids and Acellular Pertussis Vaccine (DTaP) Haemophilus Influenzae type B Vaccine (Hib)**

<b>Manufacturer</b>	Sanofi Pasteur
<b>Brand Name</b>	Trihibit
<b>Formulation</b>	5 vials of ACT-Hib (1 dose each) and 5 vials of Tripedia (1 dose each) ACT-Hib must be reconstituted with 0.6ml of Tripedia
<b>Dosage</b>	0.5ml
<b>Storage</b>	Refrigerate immediately. Store at 2°-8° C (35°-46° F). <b>Do not freeze.</b>
<b>Injection Site</b>	Anterolateral aspect of the upper thigh or deltoid
<b>Route</b>	Intramuscular (IM)
<b>Needle Size</b>	22 to 25 gauge, 7/8 to 1¼ inches
<b>Administration</b>	May be administered simultaneously or at any interval between doses with inactivated or live antigen.

### **Detailed schedule for Trihibit vaccination of children:**

Dose	Customary Age	Minimum Interval
4*	15-18 months	6 months after third dose

\*Trihibit is **only** licensed for the 4th dose of the primary vaccinating series for children 15-59 months of age.

\*The 4th dose of DTaP may be administered as early as 12 months of age, provided 6 months have elapsed since the 3rd dose, and if the child is considered unlikely to return at 15-18 months of age.

### **Contraindications to DTaP-Hib vaccination:**

1. Moderate to severe illness (i.e. child appears ill).
2. Anaphylactic reaction following prior dose of the vaccine.
3. Encephalopathy, not due to another cause, occurring within 7 days following DTP, DTaP, or DTaP-Hib vaccination.
4. Anaphylactic reaction to thimerosal.

### **Precautions to DTaP-Hib vaccination:**

1. Temperature equal to or greater than 40.5° C (105° F) within 48 hours of previous DTP, DTaP, or DTaP-Hib vaccination not due to another identifiable cause.
2. Collapse or shock-like state (hypotonic-hypo-responsive episode) within 48 hours of previous DTP, DTaP, or DTaP-Hib vaccination.
3. Persistent, inconsolable crying lasting more than 3 hours, occurring within 48 hours of previous DTP, DTaP, or DTaP-Hib vaccination.
4. Convulsions with or without fever occurring within 3 days of previous DTP, DTaP, or DTaP-Hib vaccination.
5. Progressive or evolving neurologic disorder.

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## Diphtheria Toxoid-Tetanus Toxoid (DT) Pediatric Formulation

<b>Manufacturer</b>	Sanofi Pasteur
<b>Brand Name</b>	DT
<b>Formulation</b>	10-dose vial
<b>Dosage</b>	0.5ml
<b>Storage</b>	Store at 2°-8° C (35°-46° F). <b>Do not freeze.</b>
<b>Injection Site</b>	Anterolateral aspect of upper thigh or deltoid
<b>Route</b>	Intramuscular (IM)
<b>Needle Size</b>	22 to 25 gauge , 7/8 to 1¼ inches
<b>Administration</b>	May be administered simultaneously or at any interval between doses with inactivated or live antigen.

### Routine schedule for DT vaccination of children:

Dose	Customary Age	Minimum Interval
1	2 months	6 weeks or older
2	4 months	4 weeks after first dose
3	6 months	4 weeks after second dose
4*	15-18 months	6 months after third dose
5	4-6 years	6 months after the fourth dose. The fifth dose is not necessary if the fourth dose is administered on or after the 4th birthday.

\*The 4th dose of DT may be administered as early as 12 months of age, provided 6 months have elapsed since the 3rd dose, and if the child is considered unlikely to return at 15-18 months of age.

Note: DTaP is the vaccine preferred for primary immunization of infants and children up to 7 years of age. If there is a true medical contraindication to pertussis vaccine, DT should be used.

### Contraindications to DT vaccination:

1. Moderate to severe illness (i.e. child appears ill).
2. Anaphylactic reaction following prior dose of vaccine.
3. Persons 7 years of age and older should **not** be immunized with DT.

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## Diphtheria Toxoid-Tetanus Toxoid (Td) Adult Formulation

<b>Manufacturer</b>	Sanofi Pasteur
<b>Brand Name</b>	Td
<b>Formulation</b>	Single-dose syringe and/or single-dose vial
<b>Dosage</b>	0.5 ml
<b>Storage</b>	Store at 2-8° C (35-46° F). <b>Do not freeze.</b>
<b>Injection Site</b>	Anterolateral aspect of upper thigh or deltoid.
<b>Route</b>	Intramuscular (IM)
<b>Needle Size</b>	20 to 25 gauge, 1 to 1½ inches
<b>Administration</b>	May be administered simultaneously or at any interval between doses with inactivated or live antigen.

### Routine schedule for Td vaccination of adults and children 7 years of age and older:

Dose	Minimum Interval
1	7 years of age and older
2	4 weeks after first dose
3	6 months after second dose
Booster	Repeat every 10 years or at 11-12 year-old assessment as recommended by ACIP

### Contraindications to Td vaccination:

1. Moderate to severe febrile illness (i.e. child appears ill)
2. Anaphylactic reaction following prior dose of vaccine.
3. Only persons 7 years of age and older should be immunized with Td. DTaP is the vaccine recommended for children 6 weeks through 6 years of age up to 7 years of age.

**Tetanus Toxoid, Reduced Diphtheria Toxoid and  
Acellular Pertussis Vaccine  
Tdap**

**Manufacturer:** GlaxoSmithKline

**Brand Name:** Boostrix®

**Formulation:** Single dose vials and disposable prefilled TIP-LOK syringes

**Dosage:** 0.5ml

**Storage:** Store at 2-8°C (35-46°F). **Do not freeze.**

**Injection Site:** Deltoid

**Route:** Intramuscular (IM)

**Needle Size:** 20 to 25 gauge, 1 to 1½ inch needle

**Administration:** Boostrix® vaccine **must not** be mixed with any vaccine in the same syringe.

**Indications:** Boostrix® is indicated for active booster immunization for the prevention of tetanus, diphtheria and pertussis as a single dose in individual's age 10-64 years. Not recommended for treatment of actual disease.

**Schedule:** **Five years should elapse between the last dose of DTaP or Td vaccine and the administration of Boostrix®.** There is no data to support repeat administration of Boostrix®.

**Contraindications:**

- 1.) A known hypersensitivity to any component of tetanus toxoid, diphtheria toxoid or pertussis-containing vaccine reaction after previous administration of a vaccine containing similar components.
- 2.) Encephalopathy within 7 days of administration of a previous dose of a pertussis-containing vaccine.  
If a decision is made to withhold pertussis vaccine, immunization with Td should be given.

**Warnings and Precautions:**

- 1.) Progressive neurologic disorder or uncontrolled epilepsy.
- 2.) Guillain-Barre' occurred within 6 weeks following a prior dose of tetanus toxoid
3. Experienced an Arthus-type hypersensitivity reaction following a prior dose of tetanus toxoid
- 4.) The needleless prefilled syringes contain dry natural rubber latex that may cause allergic reaction in latex sensitive individuals. The vial stopper is latex-free.
- 5.) Safety and effectiveness has not been established in pregnant women, nursing mothers, and children younger than 10 years of age

**References:** Boostrix® vaccine package insert, GlaxoSmithKline, (12/2008).

**Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine – Tdap  
(Preservative Free)**

<b>Manufacturer:</b>	Sanofi Pasteur Inc.
<b>Brand Name:</b>	ADACEL TM
<b>Formulation:</b>	Single dose vials
<b>Dosage:</b>	0.5 ml
<b>Storage:</b>	Store at 2°-8° C (35°-46° F) <b>Do not freeze</b>
<b>Injection Site:</b>	Deltoid
<b>Route:</b>	Intramuscular (IM)
<b>Needle Size:</b>	20 to 25 gauge, 1 to 1½ inch needle
<b>Administration:</b>	ADACEL vaccine <b>must not</b> be mixed with any vaccine in the same syringe
<b>Indications:</b>	<b>ADACEL</b> vaccine is indicated for active booster immunization for the prevention of tetanus, diphtheria and pertussis as a single dose in persons 11 through 64 years of age. Not recommended for treatment of actual disease.
<b>Schedule:</b>	<b>Five years should elapse between the last dose of DTaP vaccine and administration of ADACEL.</b> There are no data to support repeat administration of ADACEL
<b>Contraindications:</b>	<ol style="list-style-type: none"><li>1. A known hypersensitivity to any component of tetanus toxoid, diphtheria toxoid or pertussis-containing vaccine or a life-threatening reaction after previous administration of a vaccine containing similar components.</li><li>2. Encephalopathy not attributable to another identifiable cause within 7 days of administration of a previous dose.</li><li>3. Progressive neurological disorder, uncontrolled epilepsy or progressive encephalopathy</li><li>4. When a decision is made to withhold pertussis vaccine, Td vaccine should be given.</li></ol>
<b>Reference:</b>	ADACEL vaccine package insert, Sanofi Pasteur Inc. (June 2005)

## Hepatitis B Vaccine (Recombinant)

**Manufacturer**                    GlaxcoSmithKline  
**Brand Name**                    Engerix-B  
**Formulation/Dosage:**        10 one-dose vials

Patient age and status	Pediatric Formulation (Blue Cap) 10mcg/0.5ml	Adult Formulation (Orange Cap) 20mcg/1.0ml
<b>Infant born to HBsAg Positive woman*</b>	10mcg/0.5ml	
<b>Infant born to HBsAg Negative woman</b>	10mcg/0.5ml	
<b>1-10 years of age</b>	10mcg/0.5ml	
<b>11-19 years of age</b>	10mcg/0.5ml	10mcg/0.5 ml
<b>Adult ≥ 20 years of age</b>		20mcg/1.0ml

**Storage**                            Refrigerate immediately. Store at 2°-8° C (35°-46° F). **Do not freeze.**

**Injection Site**                    Anterolateral aspect of the upper thigh or deltoid

**Route**                                Intramuscular (IM)

**Needle Size**                    20 to 25 gauge, 7/8 to 1½ inches

**Administration**                May be administered simultaneously or at any interval between doses with inactivated or live antigen. **Hepatitis B vaccines made by different manufacturers are interchangeable, except for the 2-dose schedule for adolescents aged 11-15 years.**

**Routine schedule for Hepatitis B vaccination of children:**

Dose	HBsAg Positive woman**	HBsAg Negative woman***	Minimum Interval
1	Birth	Birth-2 months	Initial visit
2	1-2 months	1-4 months	1 month after first dose
3	6 months	6-18 months	2 months after second dose <b>and</b> 4 months after first dose <b>and</b> no earlier than 6 months of age

\* HBIG given simultaneously at a different site within 12 hours of birth.

\*\*If mother is HBsAg positive, administer hepatitis B vaccine regardless of infant's weight.

\*\*\*If mother is HBsAg negative, infant must weigh at least 2000 grams or 4.4 pounds.

**Contraindications to Hepatitis B vaccination:**

1. Moderate to severe illness (i.e. child appears ill).
2. Anaphylactic reaction following prior dose of vaccine.
3. Anaphylactic reaction to baker's yeast.

## Hepatitis B Vaccine (Recombinant)

**Manufacturer** Merck  
**Brand Name** Recombivax HB  
**Formulation/Dosage:** 10 one-dose vials

Patient age and status	Pediatric/ Adolescent Formulation (Yellow Cap) 5mcg/0.5ml	Adult Formulation (Green Cap) 10mcg/1.0ml
Infant born to HBsAg Positive woman*	5mcg/0.5ml	5 mcg/0.5 ml
Infant born to HBsAg Negative woman	5mcg/0.5ml	5 mcg/0.5 ml
1-10 years of age	5mcg/0.5ml	5 mcg/0.5 ml
11-19 years of age	5mcg/0.5ml	5 mcg/0.5 ml
Adult ≥ 20 years of age	10mcg/1.0ml	10mcg/1.0ml

Note: If the suggested formulation is not available, the appropriate dose can be achieved from another formulation, provided the total volume of vaccine does not exceed 1.0ml.

**Storage** Refrigerate immediately. Store at 2°-8° C (35°-46° F). **Do not freeze.**

**Injection Site** Anterolateral aspect of the upper thigh or deltoid

**Route** Intramuscular (IM)

**Needle Size** 20 to 25 gauge, 7/8 to 1½ inches

**Administration** May be administered simultaneously or at any interval between doses with inactivated or live antigen.  
**Hepatitis B vaccines made by different companies are interchangeable, except for the 2-dose schedule for adolescents aged 11-15 years.**

### Routine schedule for Hepatitis B vaccination of children:

Dose	HBsAg Positive woman**	HBsAg Negative woman***	Minimum Interval
1	Birth	Birth-2 months	Initial visit
2	1-2 months	1-4 months	1 month after first dose
3	6 months	6-18 months	2 months after second dose <b>and</b> 4 months after first dose <b>and</b> no earlier than 6 months of age

\* HBIG given simultaneously at a different site within 12 hours of birth.

\*\*If mother is HBsAg positive, administer hepatitis B vaccine regardless of infant's weight.

\*\*\*If mother is HBsAg negative, infant must weigh at least 2000 grams or 4.4 pounds.

### Contraindications to Hepatitis B vaccination:

1. Moderate to severe illness (i.e. child appears ill).
2. Anaphylactic reaction following prior dose of vaccine.
3. Anaphylactic reaction to baker's yeast.

**Haemophilus Influenzae type B Vaccine (Hib)  
Hepatitis B Vaccine (Recombinant)**

<b>Manufacturer</b>	Merck
<b>Brand Name</b>	Comvax
<b>Formulation</b>	10 one-dose vials
<b>Dosage</b>	0.5 ml
<b>Storage</b>	Refrigerate immediately. Store at 2°-8° C (35°-46° F). <b>Do not freeze.</b>
<b>Injection Site</b>	Anterolateral aspect of the upper thigh or deltoid
<b>Route</b>	Intramuscular (IM)
<b>Needle Size</b>	22 to 25 gauge, 7/8 to 1¼ inches
<b>Administration</b>	May be administered simultaneously or at any interval between doses with inactivated or live antigen.

**Routine schedule for Hib-Hep B combination:\***

Dose	Customary Age	Minimum Interval
1	2 months	6 weeks of age or older
2	4 months	1 month after first dose
3	12-15 months	12 months of age

A birth dose of monovalent hepatitis B vaccine remains a part of the infant immunization schedule when COMVAX is used

**Contraindications to Hib-Hep B vaccination:**

1. Moderate to severe illness (i.e. child appears ill).
2. Anaphylactic reaction following prior dose of vaccine.
3. Anaphylactic reaction to baker's yeast.

## Haemophilus Influenzae type B Vaccine (Hib)

<b>Manufacturer</b>	Sanofi Pasteur
<b>Brand Name</b>	ACT-Hib
<b>Formulation</b>	5 vials of ACT-Hib (1 dose each) and 5 vials of 0.4% Sodium Chloride (1 dose each) ACT-Hib must be reconstituted with 0.6ml of Sodium Chloride
<b>Dosage</b>	0.5ml
<b>Storage</b>	Refrigerate immediately. Store at 2°-8° C (35°-46° F). <b>Do not freeze.</b>
<b>Injection Site</b>	Anterolateral aspect of the upper thigh or deltoid
<b>Route</b>	Intramuscular (IM)
<b>Needle Size</b>	22 to 25 gauge, 7/8 to 1 1/4 inches
<b>Administration</b>	May be administered simultaneously or at any interval between doses with inactivated or live antigen.

### Routine schedule for ACT-Hib vaccination of children:

Dose	Customary Age	Minimum Interval
1	2 months	6 weeks or older
2	4 months	1 month after first dose
3	6 months	1 month after second dose
Booster*	12-15 months	2 months after third dose <b>and</b> no earlier than 12 months of age

\*Any Hib conjugate vaccine may be used as the booster dose after a primary series. When possible, the Hib conjugate vaccine used at the first vaccination should be used for all subsequent vaccinations in the primary series. However, any combination of three doses of Hib conjugate vaccines licensed for use among infants will provide adequate protection.

### Detailed schedule for Hib vaccination of children:

Age at 1st dose	Primary series	Booster
2-6 months	3 doses, 2 months apart	12-15 months
7-11 months	2 doses, 2 months apart	12-18 months
12-14 months	2 doses, 2 months apart	-----
15-59 months	1 dose	-----

### Contraindications to Hib vaccination:

1. Moderate to severe illness (i.e. child appears ill)
2. Anaphylactic reaction following prior dose of vaccine

## Haemophilus Influenzae type B Vaccine (Hib)

<b>Manufacturer</b>	Merck
<b>Brand Name</b>	PedvaxHIB (PRP-OMP)
<b>Formulation</b>	10 one-dose vials
<b>Dosage</b>	0.5ml
<b>Storage</b>	Refrigerate immediately. Store at 2°-8° C (35°-46° F). <b>Do not freeze.</b>
<b>Injection Site</b>	Anterolateral aspect of the upper thigh or deltoid
<b>Route</b>	Intramuscular (IM)
<b>Needle Size</b>	22 to 25 gauge, 7/8 to 1 1/4 inches
<b>Administration</b>	May be administered simultaneously or at any interval between doses with inactivated or live antigen.

### Routine schedule for PedvaxHIB vaccination:

Dose	Customary Age	Minimum Interval
1	2 months	6 weeks or older
2	4 months	1 month after first dose
Booster*	12-15 months	2 months after second dose <b>and</b> no earlier than 12 months of age

\*Any Hib conjugate vaccine may be used as the booster dose after a primary series. When possible, the Hib conjugate vaccine used at the first vaccination should be used for all subsequent vaccinations in the primary series. However, any combination of three doses of Hib conjugate vaccines licensed for use among infants will provide adequate protection.

### Detailed schedule for Hib vaccination of children:

Age at 1st dose	Primary series	Booster
2-6 months	2 doses, 2 months apart	12-15 months
7-11 months	2 doses, 2 months apart	12-18 months
12-14 months	2 doses, 2 months apart	-----
15-59 months	1 dose	-----

### Contraindications to Hib vaccination:

1. Moderate to severe illness (i.e. child appears ill)
2. Anaphylactic reaction following prior dose of vaccine

## Hepatitis A Vaccine (Inactivated)

<b>Manufacturer</b>	GlaxoSmithKline		
<b>Brand Name</b>	Havrix		
<b>Formulation</b>	Children & Adolescents (Red Cap)-0.5ml contains 720 EI.U. Adult Formulation (Purple Cap)-1.0ml contains 1440 EI.U.		
<b>Dosage</b>	<b>Group</b>	<b>Dose</b>	<b>Formulation</b>
	12 months-18 year	720EI.U./0.5ml	Children/Adolescents
	19 years & older	1440EI.U./1.0ml	Adults
<b>Storage</b>	Refrigerate immediately. Store at 2°-8° C (35°-46° F). Do not freeze.		
<b>Injection Site</b>	Deltoid		
<b>Route</b>	Intramuscular (IM)		
<b>Needle Size</b>	20 to 25 gauge, 7/8 to 1½ inches		
<b>Administration</b>	May be administered simultaneously or at any interval between doses with inactivated or live antigen.		

### **Routine schedule for Havrix vaccination:**

ONE dose of 720 EI.U. in 0.5ml given to children 12 months and older. Booster dose given 6-12 months after the primary dose.

ONE dose of 1440 EI.U. in 1.0ml given to adults. Booster dose given 6-12 months after the primary dose.

### **Contraindications to Hepatitis A vaccination:**

1. Moderate to severe illness (i.e. child appears ill)
2. Anaphylactic reaction following prior dose of vaccine
3. Anaphylactic reaction to yeast

## Hepatitis A Vaccine (Inactivated)

<b>Manufacturer</b>	Merck		
<b>Brand Name</b>	VAQTA		
<b>Formulation</b>	<b>Children &amp; Adolescents (Purple Cap)</b> -0.5ml contains 25 U <b>Adult Formulation (Orange Cap)</b> -1.0ml contains 50 U		
<b>Dosage</b>	Group	Dose	Formulation
	12 months-18 years	25U/0.5ml	Children/Adolescents
	19 years & older	50U/1.0ml	Adults
<b>Storage</b>	Refrigerate immediately. Store at 2°-8° C (35°-46° F). <b>Do not freeze.</b>		
<b>Injection Site</b>	Deltoid		
<b>Route</b>	Intramuscular (IM)		
<b>Needle Size</b>	20 to 25 gauge, 7/8 to 1½ inches		
<b>Administration</b>	May be administered simultaneously or at any interval between doses with inactivated or live antigen.		

### **Routine schedule for VAQTA vaccination:**

**ONE** dose containing 25 U in 0.5ml given to children 12 months-18 years.  
Booster dose containing 25 U in 0.5 ml given 6-18 months after the primary dose.

**ONE** dose of 50 U in 1.0ml given to adults. Booster dose given 6-12 months after the primary dose.

### **Contraindications to Hepatitis A vaccination:**

1. Moderate to severe illness (i.e. child appears ill)
2. Anaphylactic reaction following prior dose of vaccine
3. Anaphylactic reaction to yeast

## Measles-Mumps-Rubella Vaccine (MMR-Live)

<b>Manufacturer</b>	Merck
<b>Brand Name</b>	MMR II
<b>Formulation</b>	10 one-dose vials which must be reconstituted with 0.7ml of diluent
<b>Dosage</b>	0.5ml
<b>Storage</b>	Refrigerate immediately. Store at 2°-8° C (35°-46° F) or at freezer temperature. <b>Protect from light at all times</b> , since such exposure may inactivate the virus. Diluent may be stored at 15°-30° C (59°-86° F) room temperature. <b>Do not freeze.</b>
<b>Injection Site</b>	Deltoid
<b>Route</b>	Subcutaneous (SC)
<b>Needle Size</b>	23 to 25 gauge, $\frac{5}{8}$ to $\frac{3}{4}$ inch
<b>Administration</b>	May be administered simultaneously or at any interval between doses containing inactivated antigens. Must have at least a 4 week interval if not administered simultaneously with Varicella vaccine.

### Routine schedule for MMR vaccination of children:

Dose	Customary Age	Minimum Interval
1	12-15 months	After 12 months of age
2	4-6 years	1 month after first dose

### Contraindications to MMR vaccination:

1. Moderate to severe illness (i.e. child appears ill).
2. Anaphylactic reaction following prior dose of vaccine.
3. Immunosuppression\*
4. Pregnancy
5. Receipt of antibody-containing blood products
6. Anaphylactic reaction to neomycin

\*MMR should be considered for asymptomatic HIV patients.

## Varicella Virus Vaccine (Live)

<b>Manufacturer</b>	Merck
<b>Brand Name</b>	Varivax
<b>Formulation</b>	10 one-dose vials which must be reconstituted with 0.7ml of diluent
<b>Dosage</b>	0.5ml
<b>Storage</b>	Maintain continuously frozen at an average temperature of -15° C (5 F) or colder. If unconstituted vaccine is left out, clearly mark the vial, place in the freezer, and contact Merck at 1-800-9VARIVAX (1-800-9-827-4829) for instructions. Varivax must be used within 30 minutes of reconstitution.
<b>Injection Site</b>	Deltoid
<b>Route</b>	Subcutaneous (SC)
<b>Needle Size</b>	23 to 25 gauge, 5/8 to 3/4 inch
<b>Administration</b>	May be administered simultaneously or at any interval between doses containing inactivated antigens. Must have at least a 4 week interval if not administered simultaneously with MMR vaccine.

**Should a second dose of Varicella vaccine be indicated for children aged 12 months-12 years (e.g. during a Varicella outbreak), at least 3 months should elapse between administration of any 2 doses of Varicella-containing vaccine, including single antigen Varicella vaccine or MMRV vaccine.**

### **Routine schedule for Varicella vaccination of children:**

Dose	Customary Age	Minimum Interval
1	12-15 months	3 months for children aged 12 months-12 years
2	4-6 years	3 months for children aged 12 months-12 years

\* ACIP recommends Varicella vaccine for use in susceptible persons following exposure to Varicella. Varicella vaccine is effective in preventing illness or modifying Varicella severity if administered within 3 -5 days of exposure.

### **Contraindications to Varivax vaccination:**

1. Moderate to severe illness (i.e. child appears ill).
2. Anaphylactic reaction following prior dose of vaccine.
3. Immunosuppression
4. Pregnancy
5. Receipt of antibody-containing blood products
6. Anaphylactic reaction to neomycin

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## Measles, Mumps, Rubella and Varicella (Live Vaccine) (Preservative Free)

<b>Manufacturer:</b>	Merck & Co., Inc
<b>Brand Name:</b>	ProQuad®
<b>Formulation:</b>	10 one-dose vials which must be reconstituted with supplied diluent
<b>Dosage:</b>	0.5 ml
<b>Storage:</b>	Place vaccine in <b>freezer</b> immediately upon receipt. Store at 5° F (-15° C) Diluent should be stored separately at room temperature 68°-77°F (20°-25° C) or in a refrigerator 36°-46° F (28° C). <b>Do Not Freeze Diluent</b>
<b>Injection Site:</b>	Upper outer triceps of the arm or Anterolateral fatty tissue of the thigh
<b>Route:</b>	Subcutaneous (SubQ)
<b>Needle Size:</b>	23 to 25 gauge, 5/8 to 3/4 inch
<b>Administration:</b>	May be administered simultaneously or at any interval between doses containing inactivated antigens. <b>Administer immediately after reconstitution.</b> Discard if reconstituted vaccine is not used within 30 minutes. Do not freeze reconstituted vaccine.

### Routine schedule for MMRV vaccination of children:

<u>Dose</u>	<u>Indication</u>	<u>Age range</u>
1	When the first dose of MMR and Varicella vaccines is indicated	12 months—12 years only
2.	When the second dose of MMR is indicated <b>and</b> either The first or second dose of Varicella vaccine is indicated.	

**At least 1 month should elapse between a dose of measles containing vaccine, such as MMR vaccine, and a dose of MMRV vaccine. Should a second dose of Varicella vaccine be indicated for children aged 12 months—12 years (e.g. during a Varicella outbreak) at least 3 months should elapse between administration of any 2 doses of Varicella-containing vaccine, including single antigen Varicella vaccine or MMRV vaccine.**

### Contraindications to MMRV vaccination:

1. Moderate to severe illness (child appears ill).
2. Anaphylactic reaction to neomycin
3. Hypersensitivity to any component of the vaccine including gelatin and egg allergy
4. Pregnancy
5. Receipt of antibody-containing blood products
6. Immunosuppression\*

\*MMRV vaccine should not be administered as a substitute for the component vaccines when vaccinating children with human immunodeficiency virus (HIV) infection until revised recommendations can be considered for the use of MMRV vaccine in this population

Reference: MMWR Vol 54NoMM47; 1212; ProQuad® package inset –Merck & Co., Inc. 08/05

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## Pneumococcal Conjugate Vaccine (PCV7)

<b>Manufacturer</b>	Wyeth
<b>Brand</b>	Prevnar
<b>Formulation</b>	5 one-dose vials
<b>Dosage</b>	0.5 ml
<b>Storage</b>	Refrigerate @ 2°C - 8°C (36°F - 46°F) Do Not Freeze
<b>Injection Site</b>	Vastus Lateralis or Deltoid
<b>Route</b>	Intramuscular (IM)
<b>Needle Size</b>	22 to 25 gauge, 7/8 to 1 1/4 inches

Age at first Vaccination	No shortage**	Moderate Shortage	Severe Shortage
<6months	2,4,6 and 12-15 months	2,4, and 6 months (defer 4 <sup>th</sup> dose)	2 doses at 2-month interval in 1 <sup>st</sup> 6 months of life (defer 3 <sup>rd</sup> and 4 <sup>th</sup> doses)
7-11 months	2 doses at 2-month interval; 12-15 month dose	2 doses at 2-month interval; 12-15 month dose	2 doses at 2-month interval (defer 3 <sup>rd</sup> dose)
12-23 months	2 doses at 2-month interval	2 doses at 2-month interval	1 dose (defer 2 <sup>nd</sup> dose)
>24 months	1 dose should be considered	No vaccination	No vaccination

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High Risk 24-59 months*	2 doses 1 dose of PPV23	8 weeks between doses at least 2 months after last dose of PCV7
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**\* Recommendations do not include children who have undergone bone marrow transplant.**

### High Risk Children:

- < 24 months of age
- Sickle cell disease or anatomic asplenia
- HIV infection
- chronic illness
- Weakened immune system
- African American, American Indian or Alaskan Native descent
- Attend daycare for more than 4 hour per week

ACIP recommends the routine use of PCV7 for all children 23 months and younger, and for children 24-59 months of age who are of high risk for pneumococcal disease.

### Contraindications to vaccination:

- Allergy to one of the vaccine components
- Acute, moderate or severe illness with or without a fever.

\*\* The vaccine schedule for no shortage is included as a reference. Providers should not use the no shortage schedule regardless of their vaccine supply until the national shortage is resolved.

## **Meningococcal (Groups A, C, Y and W-135) Polysaccharide Diphtheria Toxoid Conjugate Vaccine - MCV4 (Preservative Free)**

- Manufacturer:** Sanofi Pasteur
- Brand Name:** Menactra
- Formulation:** Single dose vials
- Dosage:** 0.5ml
- Storage:** Store at 2°-8° C (35°-46° F). **Do not freeze.**
- Injection Site:** Deltoid (upper arm) for adolescent/adults  
Vastus lateralis (anterolateral thigh) for child that does not have adequate muscle mass
- Route:** Intramuscular (IM)
- Needle Size:** 20 to 25 gauge, 1 to 1½ inches
- Administration:** May be administered simultaneously or at any interval between doses of inactivated or live antigens. Menactra vaccine **must not** be mixed with any vaccine in the same syringe. Therefore, separate injection sites and different syringes should be used in case of concomitant administration.
- Indications:** Menactra vaccine is indicated for active immunization for individuals **2–55 years of age** for the prevention of invasive meningococcal disease caused by *N meningitidis* serogroups A, C, Y and W-135.
- Target Population**
- **Adolescents aged 11-12 yrs. during preadolescent assessment visit**
  - **Adolescents aged 13-18 yrs. who were not vaccinated during preadolescent visit**
  - **College freshman who live in dormitories**
  - **Children 2-10 yrs at high risk for invasive meningococcal disease**
- Risk factors are: traveling to countries where *N. meningitidis* is hyperendemic or has epidemic areas, HIV infection, terminal deficiencies, anatomic or functional asplenia.**

Menactra vaccine is not indicated for immunization against diphtheria.

**Schedule:** Single dose.

**Contraindications:**

- 1.) Hypersensitivity to any component of Menactra vaccine including diphtheria toxoid, or a life-threatening reaction after previous administration of a vaccine containing similar components.
- 2.) Hypersensitivity to dry natural rubber latex.

**Precautions:**

- 1.) History of Guillain-Barre' Syndrome
- 2.) Moderate or severe illness with or without fever

**Reference:** Menactra vaccine package insert, Aventis Pasteur, (October 2007). "Prevention and Control of Meningococcal Disease", MMWR; CDC, (Dec.7, 2007;56(48):1265-6.

**Rotavirus Vaccine: RotaTeq® RV5 and Rotarix® RV1**  
Live, attenuated vaccines

	RV5 (RotaTeq)	RV1 (Rotarix)
Manufacturer	Merck	GlaxoSmithKline
Number of doses in series	3	2
Recommended schedule	2, 4, and 6 months	2 and 4 months
Vaccine Administration (Oral)	2ml (premixed)	1ml (reconstitute)
Storage and Handling	35-46°F (2-4°C°) Do Not Freeze	Protect from light
First dose-Minimum age	6 weeks	
First dose-Maximum age	14 weeks, 6 days	
Minimum age between doses	4 weeks	
Last dose-Maximum age	8 months, 0 days	

ACIP recommends that the rotavirus vaccine series be completed with the same product whenever possible. However, vaccination should not be deferred if the product used for previous doses is not available or is unknown. If any dose in the series is Rotateq (RV5) or the product is unknown for any dose in the series, a total of three doses of rotavirus vaccine should be given by 8 months, 0 days.

**Contraindications**

1. Serious allergic reaction to a previous dose of rotavirus vaccine or to any of the components in the vaccine.

**Precautions**

1. Moderate to severe acute gastroenteritis
2. Moderate to severe illness
3. Pre-existing chronic gastrointestinal disease
4. Previous history of Intussusception (IS)
5. Altered immunocompetence due to blood dyscrasias, leukemia, lymphomas or malignant neoplasms affecting the bone marrow or lymphatic system, immunosuppressive therapy, HIV/AIDS.
6. Infant with mother's testing HIV/AIDS positive and infant HIV is unknown
7. History of receiving a blood transfusion or blood products, including immunoglobulin within 42 days.

**Special Situations**

- \* Premature infants (<37 weeks gestation), immunize if they are 1) at least 6 weeks of age, 2) clinically stable, 3) are being or have been discharged from nursery
- \* Protection of immunocompromised household member(s) from exposure to wild virus if infant living in household with immunocompromised person(s).
- \* Re-administration not recommended if infant regurgitates, spits out or vomits during or after administration of vaccine dose.
- \* Infants living in household with pregnant women can be vaccinated
- \* If recently vaccinated child is hospitalized for any reason, no precautions, other than routine universal precautions need be taken to prevent the spread of vaccine virus in the hospital setting.

2006 ACIP recommendations for the Prevention of Rotavirus gastroenteritis among infants and children; <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5512a1.htm>  
ACIP Provisional Recommendations for the Prevention of Rotavirus gastroenteritis among infants and children; <http://www.cdc.gov/vaccines/recs/provisional/downloads/roto-7-1-08-508.pdf>

**Quadrivalent Human Papillomavirus (Types 6, 11, 16, 18)  
Recombinant Vaccine (Preservative Free)**

**Manufacturer:** Merck

**Brand Name:** Gardasil®

**Formulation:** Single dose vials and prefilled single dose syringes

**Dosage:** 0.5 ml

**Storage:** Store at 2° - 8° C (35° - 46° F). **Do Not Freeze**

**Injection site:** Deltoid or Anterolateral area of thigh

**Route:** Intramuscular (IM)

**Needle Size:** 20 to 25 gauge, 1 to 1½ inches

**Indications:** Gardasil® vaccine is indicated by FDA in females 9-26 years of age. ACIP recommends routine vaccination for all females 11-12 years of age.

VFC-eligible females 9 through 18 years of age are entitled to receive VFC vaccine. The advisory committee has noted that the vaccination series can be started as early as 9 years of age at the discretion of the physician or health care provider.

**Schedule: Dosage Intervals**

Dose 1	(Dose 1 to 2)	(Dose 2 to 3)
Elected date	2 months	4 months

**There must be 6 months separating dose 1 and dose 3.**

**Contraindications:**

Anaphylactic reaction following prior dose of Gardasil® vaccine.

Individuals with hypersensitivity, including severe allergic reactions to yeast

Note: Because vaccine recipients may develop syncope, sometimes resulting in falling with injury, observation for 15 minutes after administration is recommended. Syncope, sometimes associated with tonic-clonic movements and other seizure-like activity, has been reported following vaccination with Gardasil®. When syncope is associated with tonic-clonic movements, the activity is usually transient by maintaining a supine or Trendelenburg position.

**Precautions:**

Gardasil® should be used during pregnancy only if clearly needed.

The immunologic response to Gardasil® may be diminished in immunocompromised individuals

It is not known if Gardasil® is secreted through breast milk.

**Reference:** Gardasil vaccine package insert, Merck & Co., Inc. (Updated June 29, 2009)

<http://www.fda.gov/BiologicsBloodVaccines/Vaccines/ApprovedProducts/ucm165145.htm>.

**Additional information regarding syncope following vaccination may be found in the May 2, 2008, issue of the *Morbidity and Mortality Weekly Report* at**

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5717a2.htm>.

Rev. 10/20/09

## Seasonal Influenza Virus Vaccine Live, Intranasal (LAIV)

<b>Manufacturer</b>	MedImmune
<b>Brand Name</b>	<b>FluMist®</b>
<b>Age Healthy people</b>	<b>2 years - 49 years of age</b>
<b>Formulation</b>	10 pre-filled single-use sprayers (0.2 ml)
<b>Dosage</b>	0.2 ml dose with 0.1 ml in each nostril (Thimerosal mercury content = 0 mcg)
<b>Storage</b>	Stored in a refrigerator between 2-8°C (35-46°F) <b>Do Not Freeze</b>
<b>Route</b>	Intranasal only

### Administration

Should not be administered until 48 hours after cessation of influenza antiviral therapy  
Influenza antiviral medications should not be administered for 2 weeks after receipt of FluMist®

### Schedule for FluMist® administration

Age	Dose	Number of Doses	Route and Site
Children 2 - 8 years not previously vaccinated with influenza vaccine	0.2 ml	2 doses* Interval at least 4 weeks apart	Intranasal 0.1ml in each nostril
Children 2 – 8 years who received only one dose for the first time last influenza season	0.2 ml	2 doses* Interval at least 1 weeks apart	Intranasal 0.1ml in each nostril
Children 2 – 8 years, not included in the above groups, who have had two previous influenza vaccinations	0.2 ml	1 dose	Intranasal 0.1 ml in each nostril
Children, adolescents and adults age 9 - 49 years	0.2 ml	1 dose	Intranasal 0.1 ml in each nostril

\* Children aged 6 months-8 years who have never received influenza vaccine before should receive 2 doses, at least 4 weeks apart. Those who only received 1 dose in their first year of vaccination should receive 2 doses in the following year, spaced 4 weeks apart.

### Contraindications and Precautions for Use of LAIV

The effectiveness or safety of LAIV is not known for the following groups and administration of LAIV is contraindicated:

- persons with a history of hypersensitivity, including anaphylaxis, to any of the components of LAIV or to eggs.
- persons aged <2 years or those aged ≥50 years;
- adults and children who have chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, neurological/neuromuscular, hematological, or metabolic disorders (including diabetes mellitus);

- adults and children who have immunosuppression (including immunosuppression caused by medications or by HIV);
- children aged 2--4 years whose parents or caregivers report that a health-care provider has told them during the preceding 12 months that their child had wheezing or asthma, or whose medical record indicates a wheezing episode has occurred during the preceding 12 months;
- children or adolescents aged 6 months--18 years receiving aspirin or other salicylates (because of the association of Reye syndrome with wild-type influenza virus infection); or
- pregnant women.

A moderate or severe illness with or without fever is a precaution for use of LAIV. GBS within 6 weeks following a previous dose of influenza vaccine is considered to be a precaution for use of influenza vaccines. LAIV should not be administered to close contacts of immunosuppressed persons who require a protected environment.

Report all adverse reactions to influenza vaccine to the federal Vaccine Adverse Event Report System (VAERS) at [www.vaers.hhs.gov](http://www.vaers.hhs.gov) or (800) 822-7967

Medical Director's Signature: \_\_\_\_\_ Effective Date:

\_\_\_\_\_

Reference: MMWR, July 24, 2009/58; 1-52

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr58e0724a1.htm>

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**Seasonal Influenza Vaccine  
Inactivated, Injectable**

**Manufacturer** Sanofi Pasteur

**Brand Name** Fluzone®

**Age** 6 months of age and older

**Dose/Presentation** 0.25 ml prefilled syringe (thimerosal mercury content = 0 mcg)  
0.5 ml prefilled syringe (thimerosal mercury content = 0 mcg)  
0.5 ml vial (thimerosal mercury content = 0 mcg)  
5.0 ml multi-dose vial (thimerosal mercury content = 25 mcg/0.5 ml dose)

**Storage** Refrigerate immediately. Store at 2°-8° C (35°-46° F). **Do not Freeze.**

**Injection Site** Anterolateral aspect of the upper thigh or deltoid

**Route** Intramuscular (IM)

**Needle Size** 22 to 25 gauge, 7/8 to 1¼ inches

**Administration** May be administered simultaneously or at any interval between doses with inactivated or live antigen.

Schedule for **Fluzone®** vaccination

Age	Dose	Number of Doses	Route and Site
6-35 months	0.25 ml	1 or 2 *	Intramuscular (IM) in anterolateral aspect of thigh(or in deltoid if muscle mass is sufficient)
3-8 years	0.5 ml	1 or 2 *	Intramuscular (IM) in anterolateral aspect of thigh(or in deltoid if muscle mass is sufficient)
9 years and older	0.5 ml	1	Intramuscular (IM) in deltoid muscle

\* Children aged 6 months-8 years who have never received influenza vaccine before should receive 2 doses, at least 4 weeks apart. Those who only received 1 dose in their first year of vaccination should receive 2 doses in the following year, spaced 4 weeks apart.

**Contraindications to Influenza vaccination:**

1. Persons with a severe allergic reaction to a previous dose of influenza vaccine
2. Persons known to have anaphylactic hypersensitivity to eggs or to other components of the influenza vaccine unless the recipient has been desensitized.
3. Persons with acute febrile illness, until their symptoms have abated

**Precautions:**

Persons who developed Guillain-Barre' (GBS) within 6 weeks of a previous influenza vaccination

**Seasonal Influenza Recommendations of the Advisory Committee on Immunization Practices (ACIP)**

- all children 6 months -18years
- children aged 6—59 months at risk for influenza-related complications and severe disease
- pregnant women
- persons 50 years or older
- persons of any age with certain chronic medical conditions: long-term heart or lung problems, including asthma any condition (cognitive dysfunction, spinal cord injuries, seizure disorders, or other neuromuscular disorders) that can compromise respiratory function or the handling

of respiratory secretions, or that can increase the risk for aspiration, renal dysfunction, chronic metabolic diseases including diabetes, anemia, hemoglobinopathies or immunosuppression including immunosuppression caused by medications or by HIV, long-term aspirin therapy

- residents of nursing homes and other chronic-care facilities that house persons of any age who have chronic medical conditions
- persons who live with or care for persons at high risk, including
  - household contacts that have frequent contact with persons at high risk to influenza
  - infants < 6 months of age
  - health-care workers

Report all adverse reactions to influenza vaccine to the federal Vaccine Adverse Event Report System (VAERS) at [www.vaers.hhs.gov](http://www.vaers.hhs.gov) or (800) 822-7967

Medical Director's Signature: \_\_\_\_\_ Effective Date:

\_\_\_\_\_

Reference: MMWR, July 24, 2009/58; 1-52

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr58e0724a1.htm>

Revised 09/11/09

## Seasonal Influenza Vaccine Inactivated, Injectable

**Manufacturer** Novartis Vaccine Corporation

**Brand Name** Fluvirin™

**Age** 4 years of age and older

**Dose/Presentation** 0.5 ml prefilled syringe (thimerosal mercury content = <1.0 mcg/0.5 ml dose)  
5.0 ml multi-dose vial (thimerosal mercury content = 24.5 mcg/0.5 ml dose)

**Storage** Refrigerate immediately. Store at 2°-8° C (35°-46° F). **Do not Freeze.**

**Injection Site** Anterolateral aspect of the upper thigh or deltoid

**Route** Intramuscular (IM)

**Needle Size** 22 to 25 gauge, 7/8 to 1¼ inches

**Administration** May be administered simultaneously or at any interval between doses of any other inactivated or live vaccine.

Schedule for **Fluvirin™** vaccination

Age	Dose	Number of Doses	Route and Site
4 yrs of age and older	0.5 ml	1 or 2 *	Intramuscular (IM) in anterolateral aspect of thigh (or in deltoid if muscle mass sufficient)

\* Children aged 6 months-8 years who have never received influenza vaccine before should receive 2 doses, at least 4 weeks apart. Those who only received 1 dose in their first year of vaccination should receive 2 doses in the following year, spaced 4 weeks apart.

**Contraindications to Influenza vaccination:**

1. Persons with a severe allergic reaction to a previous dose of influenza vaccine
2. Persons known to have anaphylactic hypersensitivity to eggs or to other components of the influenza vaccine unless the recipient has been desensitized.
3. Persons with acute febrile illness, until their symptoms have abated

**Precautions:**

Persons who developed Guillain-Barre' (GBS) within 6 weeks of a previous influenza vaccination

**Seasonal Influenza Recommendations of the Advisory Committee on Immunization Practices (ACIP)**

---all children 6 months -18years

---children aged 6—59 months at risk for influenza-related complications and severe disease

---pregnant women

---persons 50 years or older

---persons of any age with certain chronic medical conditions:

long-term heart or lung problems, including asthma

any condition (cognitive dysfunction, spinal cord injuries, seizure disorders, or other neuromuscular disorders) that can compromise respiratory function or the handling of respiratory secretions, or that can increase the risk for aspiration, renal dysfunction, chronic metabolic diseases including diabetes, anemia, hemaglobinopathies or immunosuppression including immunosuppression caused by medications or by HIV, long-term aspirin therapy

- residents of nursing homes and other chronic-care facilities that house persons of any age who have chronic medical conditions
- persons who live with or care for persons at high risk, including
  - household contacts that have frequent contact with persons at high risk to influenza
  - infants < 6 months of age
  - health-care workers

Report all adverse reactions to influenza vaccine to the federal Vaccine Adverse Event Report System (VAERS) at [www.vaers.hhs.gov](http://www.vaers.hhs.gov) or (800) 822-7967

Medical Director's Signature: \_\_\_\_\_ Effective Date:

\_\_\_\_\_

Reference: MMWR, July 24, 2009/58; 1-52  
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr58e0724a1.htm>

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