Department of Public Health & Social Services

IMMUNIZATION ADVISORY #11

for Guam Schools

September 2005

All of the information contained in this Immunization Protocol is based on the recommendations of the Advisory Committee on Immunization Practices (ACIP), the American Academy of Pediatrics (AAP), and the American Academy of Family Physicians (AAFP).

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ABBREVIATIONS

1. **DT**	=	Diphtheria-Tetanus Vaccine
2. **DTP**	=	Diptheria-Tetanus-Pertussis Vaccine
3. **DTaP**	=	Diphtheria-Tetanus-acellular Pertussis Vaccine
4. **Hep B**	=	Hepatitis B Vaccine
5. **HbOC**	=	Haemophilus b Conjugate Vaccine (Diphtheria protein conjugate)
6. **Hib**	=	*Haemophilus influenzae* type b Conjugate Vaccine
7. **FLU**	=	Influenza Vaccine
8. **IM**	=	Intramuscular
9. **IPV**	=	Inactivated Polio Vaccine
10. **MMR**	=	Measles-Mumps-Rubella Vaccine
11. **OPV**	=	Live Oral Polio Vaccine
12. **PO**	=	Per Orem (Oral)
13. **PCV7**	=	Pneumococcal 7-valent Conjugate Vaccine (PEDS)
14. **PPV23**	=	Pneumococcal Polysaccharide 23-valent Vaccine (ADULT)
15. **PRP-OMP**	=	Polyribosylribitol Phosphate - Outer Membrane Complex
16. **PRP-T**	=	Polyribosylribitol Phosphate - Tetanus Toxoid Conjugate
17. **SC**	=	Subcutaneous
18. **Td**	=	Tetanus-diptheria
19. **TIG**	=	Tetanus Immune Globulin
20. **Var**	=	Varicella

I. REQUIRED IMMUNIZATIONS FOR SCHOOL ENROLLMENT:

The **minimum** immunizations required by the Department of Public Health and Social Services which are a prerequisite for school attendance are as follows:

Diphtheria/Tetanus/Pertussis: DTaP #1 or Tetanus/diphtheria: Td # 1 for students unimmunized in infancy who are now 7 years or older. (Pediatric DT may be substituted for DTP if the pertussis component is contraindicated.)

Trivalent oral or inactivated polio vaccine: TOPV #1 or IPV #1.

Measles/Mumps/Rubella: MMR #1 must be administered on or after twelve months of age in order to be considered valid.

MMR #2 for all students, kindergarten through twelfth grade, effective January 3, 2006.

Haemophilus influenzae type b: for Headstart students only, effective August 20, 1998 - either:

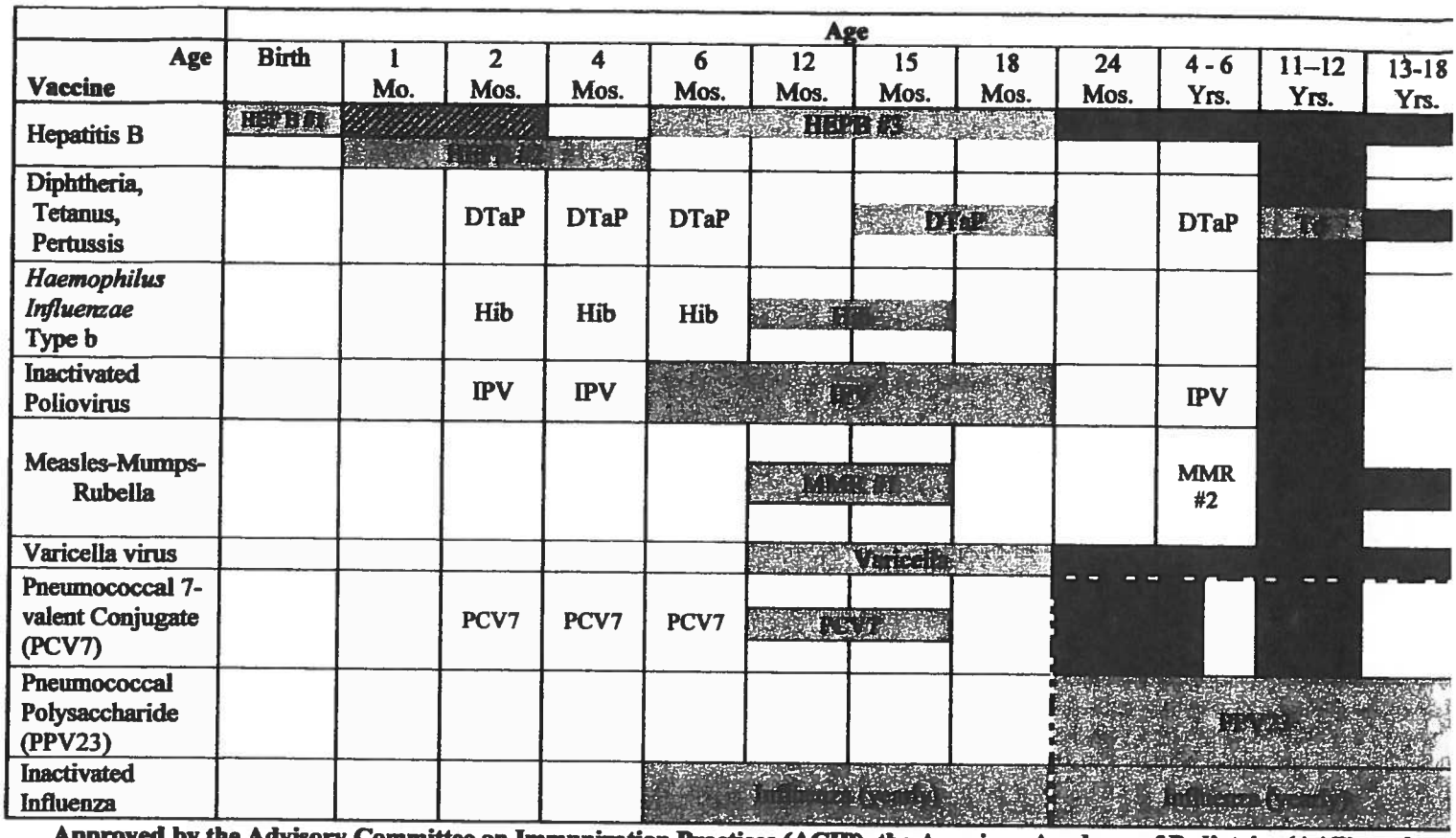
a. Four doses of Hib according to the schedule on Table 1.a, or
b. One dose of Hib received after 15 months of age

Hepatitis B: Hep B #1 for all students, kindergarten through twelfth grade, effective January 3, 2006.

Students must also receive all follow-up immunizations needed to complete the series indicated by the above immunizations as required by the most current immunization advisory provided by the Department of Public Health and Social Services.

II. GENERAL CONSIDERATION

Table 1
Recommended Childhood Immunization Schedule



Approved by the Advisory Committee on Immunization Practices (ACIP), the American Academy of Pediatrics (AAP), and the American Academy of Family Physicians (AAFP).

Range of recommended ages

Only if mother HBsAg (-)

Preadolescent assessment

Catch-up immunization

Vaccines below red line are for selected populations

* This schedule indicates the recommended age for routine administration of currently licensed childhood vaccines for children through age 18 years. Any dose not administered at the recommended age should be administered at any subsequent visit when indicated and feasible. Licensed combination vaccines are available and may be used whenever any of the components of the combination are indicated and its other components are not contraindicated. Providers should consult the manufacturers' package inserts for detailed recommendations. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting Sytem (VAERS). Guidance about how to obtain and complete a VAERS form is available at www.vaers.org or by telephone, 1-800-822-7967.

[1]Hepatitis B

All children born on Guam should receive High-Risk vaccine, because the Pacific Islands are considered endemic for Hepatitis B, either 5 μg of Merck vaccine (Recombivax® HB) or 10 μg of GlaxoSmithKline vaccine (Engerix-B®).

Infants born to HBsAg-positive mothers should receive Hep B immune globulin (HBIG) within 12 hours of birth, and Hep B #1 at a separate site. The 2nd dose is recommended at 1 month of age and the 3rd dose at 6 months of age. (See Table 1.b on page 7)

Infants born to mothers whose HBsAg status is unknown should receive the first dose of Hep B and HBIG at birth. The 2nd dose of vaccine is recommended at 1-2 months of age and the 3rd dose at 6 months of age. Maternal blood should be drawn at the time of delivery to determine the mother's HBsAg status; if it is positive, the infant should receive HBIG as soon as possible (no later than age 1 week). The dosage and timing of subsequent vaccine doses should be based on the mother's HBsAg status. (See Table 1.b on page 7)

ROUTINE INFANT SCHEDULE

HIGH RISK INFANTS*	NON-HIGH RISK INFANTS
Dose 1 Birth (within 12 hours)	Dose 1 Birth
Dose 2 1 month	Dose 2 2 month
Dose 3 2 mo. after dose #2 & 6 mo. of age or older	Dose 3 2 mo. after dose #2 & 6 mo. of age or older

*** High risk infants (HBsAg + mother, status unknown, infant given HBIG)**

ROUTINE ADOLESCENT SCHEDULE

	Minimum Interval
Dose 1	--
Dose 2	1 month
Dose 3	2 mo. after dose #2

Children and adolescents who have not been vaccinated against Hep B during infancy may be given the series during any childhood visit. Those who have not previously received 3 doses of Hep B should initiate or complete the series at the 11-12 year-old visit, and older adolescents should be vaccinated whenever possible. The 2nd dose should be administered 1 month after the 1st dose, and the 3rd dose should be 2 months after the 2nd dose.

Hep B vaccine series will be required for all students, kindergarten to 12th grade, effective January 3, 2006. At the 11-12 year-old visit, Hep B vaccine should be administered to children not previously vaccinated.

Booster doses are NOT recommended, nor are routine serologic testing to assess immune status of vaccines indicated.

[2]DTaP

DTaP is the preferred vaccine for all doses in the vaccination series, including completion of the series in children who have received one or more doses of whole-cell DTP vaccine. Whole-cell DTP is an acceptable alternative to DTaP. If a child has a valid contraindication to pertussis vaccine, pediatric DT should be used to complete the vaccination series.

ROUTINE SCHEDULE
(For children 6 weeks - 6 years old)

	Age	Minimum Interval
Dose 1	2 months (Minimum 6 weeks old)	--
Dose 2	4 months	1 month
Dose 3	6 months	1 month
Dose 4	15-18 months	6 months
Dose 5 (Booster)	4-6 years	6 months

- The fourth dose of DTaP may be administered as early as 12 months of age provided 6 months has elapsed since the third dose and if the child is considered unlikely to return at age 15-18 months.

- Children 6 years of age and under are required to receive a 4th or 5th booster dose of DTaP on or after the 4th birthday to "boost" immunity to pertussis, since it will be the last dose of pertussis they will receive. (Tetanus and diphtheria toxoids are potent antigens and do not require as many doses.)

- Children who have received four primary vaccination doses before their 4th birthday should receive a fifth dose of DTaP at 4-6 years of age or before entering kindergarten or elementary school. There should be a 6 months spacing between doses 4-5. The total number of DTaP, DPT or DT toxoids should not exceed six before the seventh birthday.

- DTP5/DTaP5 is not needed if DTP4/DTaP4 is given at ≥4 years of age.

- If a child received DTP5/DTaP5 before the 4th birthday, another dose of DTP/DTaP is needed. There should be a 6 months spacing between doses 5-6.

The DTP and DTaP doses administered to children <7 years of age who remain incompletely vaccinated at ≥7 years of age should be counted as prior exposures to tetanus and diphtheria toxoids. Thus, for example, a child who previously received two doses of DTP needs only one dose of Td to complete a primary series. If three (3) doses of DTP were administered before the 4th birthday, but the child is now ≥7 years of age, the child would already be considered complete. However, DTP2 and DTP3 should be 6 months apart; otherwise, an additional booster dose of Td is required. If the primary series is considered complete, a Td booster is recommended at 11 years of age if 5 years has elapsed from the last dose of DTP, DTaP or DT.

[3]Td

Td, adsorbed, for adult use, is **recommended** at 11-12 years of age (Adolescent visit) if at least 5 years have elapsed since the last dose of DTP, DTaP, or DT toxoids. (Tetanus Toxoid alone will **NOT** fulfill this requirement.)

Td is **required** for school enrollment if 10 years has elapsed since the last receipt of DTP, DTaP or DT.

If a dose is given as part of wound management, the next booster is not indicated for ten years thereafter. Currently, the Guam Immunization Program does not provide the Td vaccine for wound management purposes.

For adults, a Td booster is recommended every 10 years. More frequent booster is not indicated and has been reported to result in an increased incidence and severity of adverse reactions.

ROUTINE SCHEDULE
(For Unvaccinated children 7 years and older)

	Minimum Interval
Dose 1	--
Dose 2	1 month
Dose 3	6 months
Booster dose	Every 10 years

[4]Hib

Three *Haemophilus influenzae* type b (Hib) conjugate vaccines are licensed for infant use. If PRP-OMP (PedvaxHIB® or ComVax ®, [Merck]) is administered at ages 2 and 4 months, a dose at 6 months is **not** required (for the primary series). After completing the primary series, any Hib conjugate vaccine may be used as a booster.

- Hib vaccine is given up to the 5th birthday.
- Only one dose of Hib is needed if given after 15 months of age.
- Booster dose (3rd dose of PedvaxHIB® or ComVax ® or 4th dose of HibTITER® [Wyeth] or ActHIB® [Aventis-Pasteur]) is given after the first birthday and at least 2 months after the previous dose of Hib vaccine.
- Only the DTaP (Tripedia®) manufactured by Aventis-Pasteur can be reconstituted with ActHIB and can only be used for the 4th dose.

[5]Polio

Currently, only inactivated poliovirus vaccine (IPV) is licensed in the United States and only one vaccine (IPOL®, Aventis-Pasteur) is distributed.

ROUTINE SCHEDULE

	Age	Minimum Interval
Dose 1	2 months (Minimum 6 weeks old)	--
Dose 2	4 months	1 month
Dose 3	6-18 months	1 month
Dose 4	4-6 years	1 month

- If dose # 3 of an all-OPV or all-IPV series is given at < 4 years of age, dose #4 is needed at ≥ 4 years of age. However, if a child has received 4 doses of all OPV or IPV spaced one month apart, it is not necessary to receive a fifth dose at 4-6 years of age.
- If dose # 3 of an all-IPV or all-OPV series is given at ≥ 4 years of age, dose #4 is not needed.
- Children on an IPV/OPV "sequential" schedule must receive all 4 doses (in any combination), regardless of when first initiated. For example, if a child has received 1 OPV at 2 months of age and the second dose was IPV at 1 year of age, the child is now 4 years of age, the child still needs two more doses of IPV. IPV3 and IPV 4 should be 4 weeks apart.
- Primary poliovirus vaccination is not routinely recommended for persons ≥ 18 years of age. When polio vaccine is administered to a previously unvaccinated person ≥18 years of age, IPV is preferred.

[6]MMR

Effective January 3, 2006, two doses of MMR before school entry will be required for all students, kindergarten to 12th grade, unless the receipt of MMR#1 temporarily contraindicates the receipt of MMR#2.

ROUTINE SCHEDULE

	Age	Minimum Interval
Dose 1	12-15 months (Minimum 12 months old)	--
Dose 2	4-6 years	1 month

- MMR is administered routinely to infants on or after their first birthday. In case of a measles epidemic, MMR or measles vaccine is administered to infants 6 months of age or older.

- Infants who received their MMR before 12 months of age should be revaccinated on or after their first birthday and be given a booster shot between 4 to 6 years of age or at time of school entry. The MMR vaccine received less than 12 months of age is **NOT** counted.

- The 2nd dose of MMR is routinely recommended at age 4-6 years. Although, it may be administered at any visit, provided one month has elapsed since receipt of the first dose and that both doses are administered on or after 12 months of age.

- It is strongly recommended that individuals born on or after 1957 receive two doses of MMR if they have no documentation of two doses of MMR, if they have never had measles (physician-diagnosed), or if they do not have confirmed laboratory evidence of measles immunity.

- Doses of MMR or other measles-containing vaccines should be separated by at least one month.

- Separate or single components of Measles, Mumps, and Rubella count as 1 dose of MMR. All 3 single vaccine components must be present, if 1 of these vaccine components is missing it is **NOT** considered as MMR. All 3 single vaccine components must be administered on or after 12 months of age, if 1 of these vaccine components is invalid, it is not considered as MMR.

- For spacing intervals used to separate antibody-containing products (IG or other blood products) and MMR vaccine, see Table 9.

[7]Varicella (Chickenpox)

Varivax® (Merck) is indicated for vaccination against varicella in individuals 12 months of age and older. Currently, Varivax® is not required for school attendance but is highly recommended.

ROUTINE SCHEDULE

Age Group	Recommendation	Minimum Interval
Children (1-12 years old)	1 dose at 12-18 months (Minimum 12 months old)	--
Susceptible Adolescents and Adults (13 years and older)	2 doses	1 month

- Children with a reliable history of chickenpox can be assumed to be immune to varicella. Children without a reliable history or uncertain history of chickenpox should be considered susceptible.
- Prior history of chickenpox is not a contraindication to the varicella vaccination.
- For spacing intervals used to separate antibody-containing products (IG or other blood products) and varicella vaccine, see Table 9.

Table 2
Recommended accelerated immunization for infants and children < 7 years of age who start the series late or who are > 1 month behind in the immunization schedule (i.e., children for whom compliance with scheduled return visits cannot be assured.*)

Timing	Vaccine/Toxiod				
First Visit (≥ 4 months of age)	DTaP1	Hib1	Hep B1	IPV1 or OPV1	MMR1 (≥12 mos. of age)
Second visit (1 month after first visit)	DTaP2	Hib2	Hep B2	*IPV2 or *OPV2	
Third visit (1 month after second visit)	DTaP3	Hib3		*IPV3 or *OPV3	
Fourth visit (≥ 6 months after 3rd visit)	DTaP4	Hib4	Hep B3		
Additional visits (4-6 years)	DTaP5			**IPV4	MMR2
11-16 Years	Td (Repeat Every 10 Years Throughout Life.)				

* Dose #3 for IPV, OPV and Hep B can be given earlier than 6 months, please refer to minimum spacing, Table 7, page 25.

** Any combination "sequential" series of IPV/OPV must receive all 4 doses (in any order), regardless of when first initiated. If dose #3 in an all IPV or an all OPV series is given at ≥ 4 yrs. of age, dose #4 is not needed.

† Some combination vaccines are available and may be used whenever any of the components of the combination are indicated and its other components are not contraindicated. Providers should consult the manufacturers' package inserts for detailed recommendations.

Table 3
Immunization Schedule for Children ≥ 7 years of age Not Immunized at the Recommended Time in Early Infancy

Timing	Vaccine/ Toxoid			
First visit	Td1	IPV1 or OPV1	Hep B1	MMR1
Second visit (1 month after 1st visit)	Td2	IPV 2 or OPV2	Hep B2	MMR2
Third visit (6 months after 2nd visit)	Td3	*IPV3 or *OPV3	*Hep B3	
Fourth visit (4 weeks after 3rd visit)		**IPV 4		
Additional visits	Td (Repeat Every 10 years Throughout life.)			

* Dose #3 for IPV, OPV and Hep B can be given earlier than 6 months, please refer to minimum spacing, Table 7, page 25.

** Any combination "sequential" series of IPV/OPV must receive all 4 doses (in any order), regardless of when first initiated. If dose #3 in an all IPV or an all OPV series is given at ≥ 4 yrs. of age, dose #4 is not needed.

III. GENERAL RULES

A. DOSAGE, ROUTE, NEEDLE SIZE AND SITE OF ADMINISTRATION

Table 4
Administering Vaccines: Dose, Route, Site and Needle Size

Vaccine/Toxoid	Dosage	Needle Size	Route†	Preferred site
DTaP	0.5mL	22-25g 1-2"	IM	Anterolateral aspect of the thigh or the deltoid muscle
Td	0.5 mL	22-25g 1-2"	IM	Deltoid muscle
IPV	0.5 mL	23-25g 5/8"	SC	Mid-lateral thigh
MMR	0.5 mL	23-25g 5/8"	SC	Outer aspect of upper arm (deltoid)
Haemophilus influenzae type b conjugate (Hib)	0.5 mL	22-25g 1-2"	IM	Mid-thigh or deltoid
Hep B	*	22-25g 1-2"	IM	Mid-lateral thigh
Varicella virus vaccine (VARIVAX)	0.5mL	23-25g 5/8"	SC	Outer aspect of upper arm (deltoid)
Pneumococcal 7-valent Conjugate (PCV7) (PREVNAR)	0.5 mL	22-25g 1-2"	IM	**Infants:** Anterolateral aspect of the thigh **Toddlers and young children:** deltoid muscle
Pneumococcal 23-valent Polysaccharide (PPV 23) (Pneumovax 23)	0.5mL	22-25g 1-2"	IM	Deltoid muscle
		23-25g 5/8"	SC	Mid-lateral thigh
Inactivated Influenza Vaccine (Fluzone, Fluvirin)	**	22-25g 1-2"	IM	**Adults and older children:** Deltoid muscle **Infants and young children:** Anterolateral aspect of the thigh

* See Table 1.b on page 8
**See Current Standing Order
†**DO NOT INJECT INTRAVENOUSLY UNLESS STATED IN MANUFACTURER'S INSERT.**

Note: If vaccinating older children with adequate muscle mass, DTaP, Hep B, MMR or IPV vaccines <u>should</u> be given at the deltoid muscle.

B. SIMULTANEOUS AND NON-SIMULTANEOUS ADMINISTRATION

General Rule #1: There are no contraindications to simultaneous administration of any vaccines except cholera and yellow fever.

1. The simultaneous administration of the most widely used live and inactivated vaccines does not result in decrease antibody responses or increased rates of adverse reaction. **However, yellow fever and cholera vaccines should NOT be administered simultaneously.** It has been observed that simultaneous administration of these vaccines decreases the antibody response to both vaccines. These vaccines should be separated by at least 3 weeks if possible.

2. Simultaneous administration of all vaccines for which a child is eligible can be very important in childhood vaccination programs because it increases the probability that a child will be immunized at the appropriate age.

3. In some situations, vaccines which could be given simultaneously are not given at the same time (e.g., if the child is receiving vaccines from two different providers). Table 6 gives the suggested intervals if vaccines are not administered simultaneously.

4. If two inactivated vaccines are not administered simultaneously, they can be administered at any time without a waiting period between the vaccine.

5. If an inactivated and a live vaccine are not administered simultaneously, they can be administered at any time without a waiting period between the vaccine.

6. **Live vaccines which are not administered simultaneously should be separated by at least four (4) weeks.** This would apply to the combinations of yellow fever and MMR/Varicella, MMR and Varicella, or a situation when MMR is divided into its component vaccines (e.g. single antigen measles, mumps and rubella vaccine should be separated by 4 weeks if not given simultaneously as MMR). This separation of live virus vaccine is due to theoretical concern about immunologic interference as the virus replicates. **However, this rule does not apply to the combination of oral polio and live injected vaccines (MMR, varicella, or yellow fever). These vaccines may be administered at any time before or after OPV.** There is no data that suggest that OPV and these vaccines interfere with each other, even if the interval between them is only a few days.

Table 5
Timing of Live and Inactivated Vaccines

Combination	Simultaneous	Minimum Interval if not administered simultaneously
Two inactivated	Yes	None
Inactivated and live	Yes*	None (3 weeks for yellow fever and cholera)*
Two live	Yes	4 weeks (None for MMR and OPV combination)**

* Except yellow fever and cholera. If time permits, these antigens should not be administered simultaneously, and at least 3 weeks should elapse between administration of yellow fever vaccine and cholera vaccine. If the vaccines must be administered simultaneously or within 3 weeks of each other, the antibody response may not be optimal.

** This rule does not apply to the combination of oral polio and MMR vaccines. Either vaccine may be administered at any time before or after the other. There are no data which suggest that OPV and MMR interfere with each other, even if the interval between them is only a few days.

C. INTERVAL BETWEEN DOSES OF VACCINE

General rule #2: **Increasing the interval between doses of a multi-dose vaccine does not diminish the effectiveness of the vaccine.**

Decreasing the interval between doses of a multi-dose vaccine may interfere with antibody response and protection.

1. All vaccines should be administered as close to the recommended schedule as possible in order to maximize the protection from the vaccine. Recommended spacing between doses should be maintained.

2. In some cases, the interval between two doses of vaccine may be longer than recommended. If this occurs, the next dose in the series should be given at the next visit. **It is not necessary to restart the series of any vaccine due to extended intervals between doses.**

3. Doses of vaccine too close together could compromise the effectiveness of the dose. Table 7 on page 27 shows the **minimum** interval acceptable between doses of vaccine. **If doses of vaccine given at intervals earlier than those shown below - even one (1) day earlier - the second dose should <u>not</u> be counted.**

Table 6
Minimum age for initial vaccination and minimum interval between vaccine doses, by type of vaccine

Vaccine	Minimum age for first dose	Interval between Dose 1 to 2	Interval between Dose 2 to 3	Interval between Dose 3 to 4
DTaP	6 weeks	1 month	1 month	6 months
Td	7 years	1 month	6 months	--
HbOC (HibTITER) **PRP-T (ActHib)** **PRP-OMP (PedvaxHIB)**	6 weeks 6 weeks 6 weeks	1 month 1 month 1 month	1 month 1 month 2 months	2 months 2 months
IPV	6 weeks	1 month	1 month	1 month
Measles-mumps-rubella	12 months	1 month	--	--
Hepatitis B	Birth	1 month	2 months	--
Varicella	12 months	1 month	--	--
Pneumococcal 7-valent Conjugate (PCV7/ Prevnar)	6 weeks	1 month	1 month	2 months
Inactivated Influenza: **Fluzone** **Fluvirin**	 6 months 4 years	 1 month 1 month	--	--
Pnuemococcal 23-valent Polysaccharide (PPV23/ Pneumovax 23)	2 years	≥5 years**	--	--

* Effective January 1, 2000, the Guam Immunization Program defines 1 month as at least 28 days. However, to help expedite assessment, the Guam Immunization program suggests that **when administering shots, it be given the same day of the following month,** since this will always be both 28 days and 1 month, even in February.

**For Revaccination recommendations, see page 20.

D. NUMBER OF DOSES

General rule #3: **Live attenuated vaccines generally produce long-lasting immunity with a single dose.**

Inactivated vaccines require multiple doses and may require periodic boosting to maintain immunity.

E. ANTIBODY-VACCINE INTERACTION

General rule #4: **Live attenuated vaccines may be affected by circulating antibody to the antigen.**

Inactivated vaccines generally are not affected by circulating antibody to the antigen.

Table 7
Interval Required Between Administration of a Vaccine and Receipt of an Antibody-containing Blood Products, such as Immune Globulin

Timing of Vaccines and Immune Globulin		
Immunobiologic Administered		**Recommended minimum Interval between doses**
FIRST	**SECOND**	
Inactivated vaccine	Immune globulin	None
Immune Globulin	Inactivated vaccine	None
Live vaccine	Immune globulin	2 weeks
Immune globulin	Live vaccine	Dose related

1. Since inactivated vaccines are not substantially affected by circulating antibody, they can be administered before, after, or at the same time as the antibody. Simultaneous administration of antibody and vaccine is recommended for post-exposure prophylaxis of certain diseases, such as hepatitis B, rabies and tetanus.

2. Live vaccines must replicate in order to cause an immune response. Therefore, if a live vaccine must be given around the time that the antibody is given, they must be separated by enough time so that the antibody does not interfere with the virus. Varicella and MMR should be given **14 days** before giving the blood product, or delayed until the antibody has degraded (see Table 9). If the interval between the vaccine and the antibody is less than 14 days, the recipient should be tested for immunity or the vaccine dose should be repeated.

3. Oral polio vaccine and yellow fever vaccine are not affected by the administration of immune globulin or blood products. They can be given simultaneously.

Table 8
Suggested Intervals between Immune Globulin (IG) Administration and Measles-containing Vaccine and Varicella Vaccine*

Product/ Indication for Immunoglobulin	Route	Dose		Suggested Interval (months)
		U or mL	mg IgG/kg body weight	
Tetanus (as TIG)	IM	250 U	10	3
Hepatitis A (as IG)				
Contact prophylaxis	IM	0.02 mL/kg	3.3	3
International travel	IM	0.06 mL/kg	10	3
Hepatitis B (as HBIG)	IM	0.06 mL/kg	10	3
Rabies (as RIG)	IM	20 IU/kg	22	4
Measles (as IG)				
Standard	IM	0.25 mL/kg	40	5
Immunocompromised host	IM	0.50 mL/kg	80	6
Varicella (asVIG)	IM	125 U/10 kg (maximum 625 units)	20-40	5
RSV monoclonal antibody (Synagis™)§	IM	--	15 mg/kg	None
Blood transfusion				
Washed RBCs	IV	10 mL/kg	Negligible	0
RBCs, adenine-saline added	IV	10 mL/kg	10	3
Packed RBCs (Hct 65%)†	IV	10 mL/kg	60	6
Whole Blood (Hct 35-50%)†	IV	10 mL/kg	80-100	6
Plasma or platelet products	IV	10 mL/kg	160	7
Cytomeglovirus IGIV	IV	--	150 maximum	6
RSV-IGIV	IV	--	750	9
IGIV				
Replacement therapy for immune deficiencies¶	IV	--	300-400¶	8
ITP	IV	--	400	8
ITP	IV	--	1,000	10
Kawasaki syndrome	IV	--	2,000	11

RSV= Respiratory syncytial virus; RBC= Red blood cells; IGIV= IG intravenous; ITP= immune (formerly termed "idiopathic") thrombocytopenic purpura

* This table is not intended for determining the correct indications and dosage for using IG products. Unvaccinated persons might not be fully protected against measles during the entire recommended interval, and additional doses of IG and/or measles vaccine might be indicated after measles exposure. Concentrations of measles antibody in an IG preparation can vary by manufacturer's lot. Rates of antibody clearance after receipt of an IG preparation might vary also.

§ Contains antibody only to RSV

† Assumes a serum IgG of 16 mg/mL

¶ Measles and varicella vaccination is recommended for children with asymptomatic HIV infection but is contraindicated for persons with severe immunosuppression from HIV or any other immunosuppressive disorder.

Note: This table does not apply to oral polio or yellow fever vaccine.

F. CONTRAINDICATIONS

General rule #5: **There are two permanent contraindications to vaccination:**

- **severe allergy to a vaccine following a prior dose of a vaccine, and**
- **encephalopathy without a known cause occurring within 7 days of pertussis vaccine.**

1. A severe allergy following a previous dose of vaccine will virtually always contraindicate a subsequent dose of that vaccine. Severe allergies are those which are mediated by IgE, occur within minutes or hours of the vaccine, and require medical attention. Examples of severe allergic reactions are generalized urticaria (hives), wheezing, swelling of the mouth and throat, difficulty breathing, hypotension or shock.

2a. Persons may be allergic to the vaccine antigen, animal protein, antibiotics, preservatives, or stabilizers. The most common animal protein allergen is egg protein found in vaccine prepared using chicken eggs or chicken embryo cell cultures (e.g. mumps, rubella, measles, influenza and yellow fever vaccines). **Ordinarily, persons who are able to eat eggs or egg products safely can receive these VACCINES.**

b. **Persons with histories of severe anaphylactic or anaphylactic-like allergy to eggs or egg-protein should not be vaccinated until there is a doctor's clearance/orders.** Asking persons whether they can eat eggs without adverse effects is a reasonable way to screen for those who might be at risk from receiving MMR, yellow fever and influenza vaccines. Current measles and mumps vaccines are derived from chick embryo fibroblast tissue cultures and do not contain significant amounts of egg cross-reacting proteins. Recent studies indicate that children with egg allergy, even those with severe hypersensitivity, are at low risk for anaphylactic reactions to these vaccines, singly or in combination (i.e., MMR), and that skin testing with dilute vaccine is not predictive of an allergic reaction to vaccination. Although immediate hypersensitivity reactions occur following MMR, most appear to be due to reactions to other vaccine components such as gelatin or neomycin. **Therefore, children with egg allergy routinely may be given MMR, measles, or mumps vaccine without prior skin testing.** Vaccine should be given in one injection rather than in a series of gradually increasing concentration doses. Some experts recommend that egg allergic children given MMR, measles, or mumps vaccine should be observed for 30 minutes with immediate availability of equipment for emergency medical treatment of anaphylaxis.

3. Some vaccines contain trace amount of antibiotics (e.g. neomycin) to which patients may be hypersensitive. No currently available vaccine contains penicillin or penicillin derivatives. Allergy to **NEOMYCIN** contraindicates **MMR, IPV & Varicella vaccines.**

4. Allergy to **BAKER'S YEAST** contraindicates **Hep B**.

5. Allergy to **GELATIN** contraindicates **Varicella.**

6. Allergy to **STREPTOMYCIN** contraindicates **IPV**.

7. **Encephalopathy without a known cause occurring within 7 days of a dose of pertussis vaccine is an absolute contraindication to subsequent doses of pertussis vaccine.**

8. Low dose, short term (less than 2 weeks), and topical (including aerosol) courses of corticosteroid generally do not produce significant immunosuppression, and are **not** contraindications for vaccinations.

9. Children receiving therapy with immunosuppressive agents (large amounts of corticosteriods, antimetabolites, alkylating agents, cytotoxic agents) may not respond optimally to active immunization.

Table 9
Vaccine Contraindications

Condition	Contraindication to	
	Live	Inactivated
Severe allergy to component	Yes	Yes
Pregnancy	Yes*	No
Encephalopathy	---	Yes**
Immunosuppression	Yes†	No
Severe Illness	Yes	Yes
Recent blood products	Yes	No

* Except OPV, in certain conditions
**Applies only to the pertussis vaccine
† Except MMR and Varicella, see table 11

Table 10
Recommendations for Routine Immunization of HIV-infected Children

Vaccine	HIV Infection	
	Known asymptomatic	Symptomatic
DTaP, IPV, Hib, Hep B	Yes	Yes
MMR	Yes	Contraindicated*
Varicella	Yes	Contraindicated*
Pneumococcal 7-valent Conjugate (Prevnar)**	Yes	Yes
Pneumococcal (Pneumovax 23)***	Yes	Yes
Inactivated Influenza (Fluzone, Fluvirin)	Yes	Yes
Live Attenuated Influenza (Flumist)	Contraindicated	Contraindicated

*** Should be considered, unless severe immunodeficiency. MMR is recommended for HIV-infected persons without evidence of measles immunity who are NOT severely immunocompromised.**
**** Children 2 years old and under**
***** Children 2 years old and older**

Table 11

INVALID CONTRAINDICATIONS TO IMMUNIZATIONS

1. Mild illness, such as low grade fever, upper respiratory infection, colds, otitis media, and mild diarrhea.
2. Antibiotic therapy.
3. Disease exposure or convalescence.
4. Pregnancy in the household.
5. Breast feeding
6. Premature birth*
7. Non-specific allergies
8. Allergies to products and antibiotics not in vaccine
9. Non-severe egg allergies
10. Allergies to duck antigens
11. Family history of adverse events unrelated to immunosuppression
12. Family history of seizure
13. Family history of SIDS (Sudden Infant Distress Syndrome)
14. Need or requirement for tuberculosis skin test (PPD)
15. Need for multiple vaccines

Infants and children who need TB skin tests can and should be immunized. All vaccines including MMR& Varicella can be given on the same day, as a TB skin test. All vaccines, except the MMR & Varicella vaccines can be given any time after a TB skin test is applied. For most vaccines, there are no TB skin test timing restrictions at all. However, if the PPD was not given on the same day as the MMR & Varicella vaccine, the PPD test should not be given until 4 - 6 weeks after the MMR & Varicella was administered.

* The appropriate age for initiating vaccinations in prematurely born infants is the usual chronologic age (same dosage and indications as for normal, full term infants).

Table 12

PPD and MMR/Varicella vaccine

MMR vaccine may decrease the response to a TB skin test, potentially causing an **INACCURATE RESULT** in someone who actually has an infection with tuberculosis. MMR can be given the same day as a TB skin test. If MMR has been given and one or more days has elapsed, it is required to wait 4 weeks before giving a routine TB skin test. If the MMR vaccine and the PPD are administered the same day, and the reading of the PPD is doubtful or not read, the PPD cannot be repeated until 4 weeks after the MMR and the first PPD were given.

There is no evidence that Varicella vaccine reduces response to PPD. However, since MMR is believed to do so, and Varicella is also a live virus vaccine, it is prudent to apply the same rules to Varicella as we do for MMR. PPD may be administered before, or on the same day as the Varicella. Avoid PPD for 4 weeks if Varicella was given first. If the Varicella vaccine and the PPD are administered the same day, and the reading of the PPD is doubtful or not read, the PPD cannot be repeated until 4 weeks after the Varicella and the first PPD were given.

G. OTHER RULES

1. Never restart an **interrupted** series. Intervals between doses longer than those recommended do not lead to reduction in final antibody levels. A child needs to make-up the doses missed regardless of the length of time elapsed between doses.

2. If a parent or legal guardian does not have proof of valid documentation of immunizations, it is safe to restart the series.

3. All children must have valid documentation (official shot record or note from physician or Department of Public Health & Social Services [DPH&SS] **showing the dates of vaccination**).

4. Any child not in compliance with the immunization schedule shall not be allowed to attend school or day care centers, unless they have documentation of a medical or religious exemption. The Director of DPH&SS must approve all religious exemptions.

5. As required under the National Childhood Vaccine Injury Act, all health care providers who administer any DTaP, Td, MMR, Hib, Hep B, Varicella, Polio, & Pneumococcal conjugate vaccines shall, prior to administration of the vaccine, provide a copy of the relevant vaccine information statements (VIS):

   (a) To any adult to whom such provider intends to administer such vaccine, and
   (b) To the legal representative of any child to whom such provider intends to administer such vaccine.

   "Legal representative" is defined as a parent or other individual who is qualified under state law to consent to the immunization of a minor. On Guam, only the parents of that child can consent to the administration of vaccines to their child. If the parent is unable to accompany the child, then a written note from the parent authorizing another person ≥ 18 years of age to sign for the consent of their child's immunizations must be given to the provider. The written authorization must be kept by the provider for documentation purposes.

Signed by:

ROBERT LEON GUERRERO, M.D.
Guam Immunization Medical Advisor

9/8/05
Date

Concurred by:

ARTHUR U. SAN AGUSTIN, MHR
Acting Director, Guam Department of Public Health and Social Services

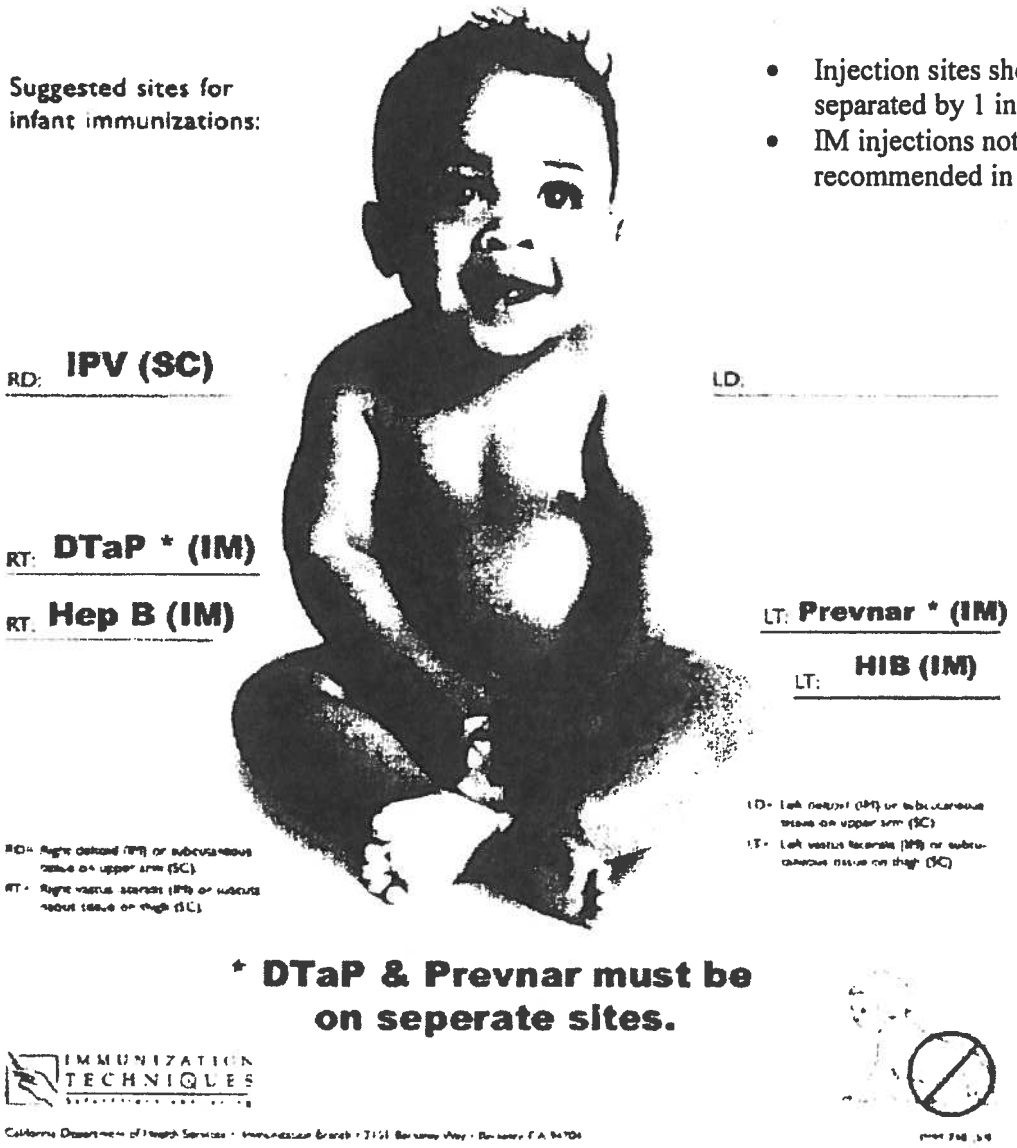
09/27/05
Date

APPENDICES

A. IMMUNIZATION SITE MAPS:

2, 4, 6 Months

Immunization Site Map



- Injection sites should be separated by 1 inch
- IM injections not recommended in infant's arms

Credits are given to the California Dept. of Health, Immunization Branch for the Immunization Site Map. The Guam Dept. Of Public Health, Immunization Program has adapted it to specify vaccine administration.

12 Months, All shots

Immunization Site Map

Suggested sites for toddler immunizations:

- Injection sites should be separated by 1 inch
- IM injections not recommended in infant's arms

RD: **Varicella (SC)**

LD: **MMR (SC)**

RT: **DTaP* (IM)**

RT: _____

LT: **HIB (IM)**

LT: **Prevnar* (IM)**

RD= Right deltoid (IM) or subcutaneous tissue on upper arm (SC)

RT= Right vastus lateralis (IM) or subcutaneous tissue on thigh (SC)

LD= Left deltoid (IM) or subcutaneous tissue on upper arm (SC)

LT= Left vastus lateralis (IM) or subcutaneous tissue on thigh (SC)

IMMUNIZATION TECHNIQUES

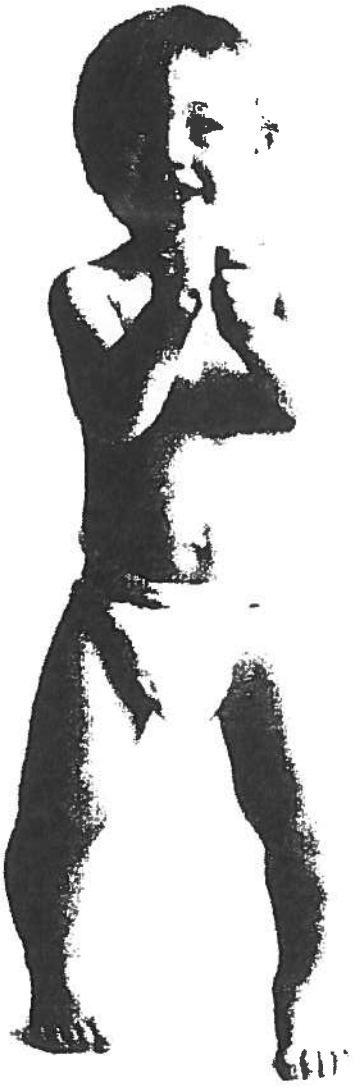
***DTaP and Prevnar must be on separate sites.**

Credits are given to the California Dept. of Health, Immunization Branch for the Immunization Site Map. The Guam Dept. Of Public Health, Immunization Program has adapted it to specify vaccine administration.

12-15 Months

Immunization Site Map

Suggested sites for toddler immunizations:



RD **Varicella (SC)**

RT:

RT:

LD: **MMR (SC)**

LT: **Prevnar (IM)**

LT:

RD - Right deltoid (IM) or subcutaneous tissue on upper arm (SC)

RT - Right vastus lateralis (IM) or subcutaneous tissue on thigh (SC)

LD - Left deltoid (IM) or subcutaneous tissue on upper arm (SC)

LT - Left vastus lateralis (IM) or subcutaneous tissue on thigh (SC)

IMMUNIZATION TECHNIQUES

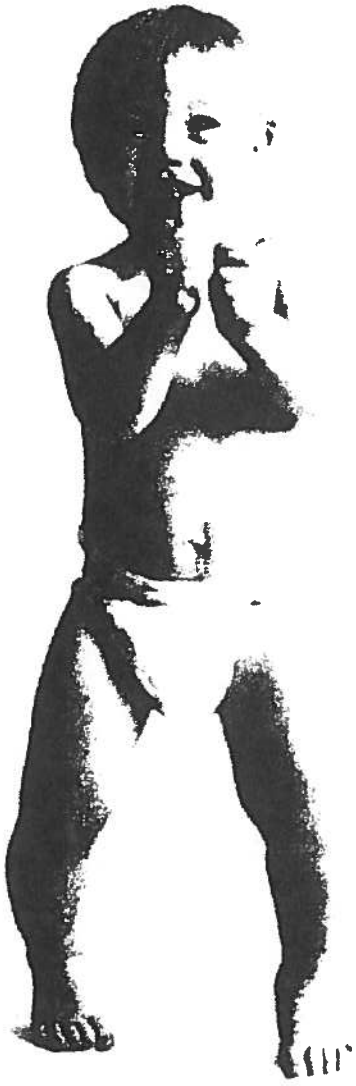
California Department of Health Services • Immunization Branch • 2151 Berkeley Way • Berkeley, CA 94704

Credits are given to the California Dept. of Health, Immunization Branch for the Immunization Site Map. The Guam Dept. Of Public Health, Immunization Program has adapted it to specify vaccine administration.

15-18 Months

Immunization Site Map

Suggested sites for toddler immunizations:



RD

RT **DTaP (IM)**

RT

LD

LT **HIB (IM)**

LT

RD - Right deltoid (IM) or subcutaneous tissue on upper arm (SC)

RT - Right vastus lateralis (IM) or subcutaneous tissue on thigh (SC)

LD - Left deltoid (IM) or subcutaneous tissue on upper arm (SC)

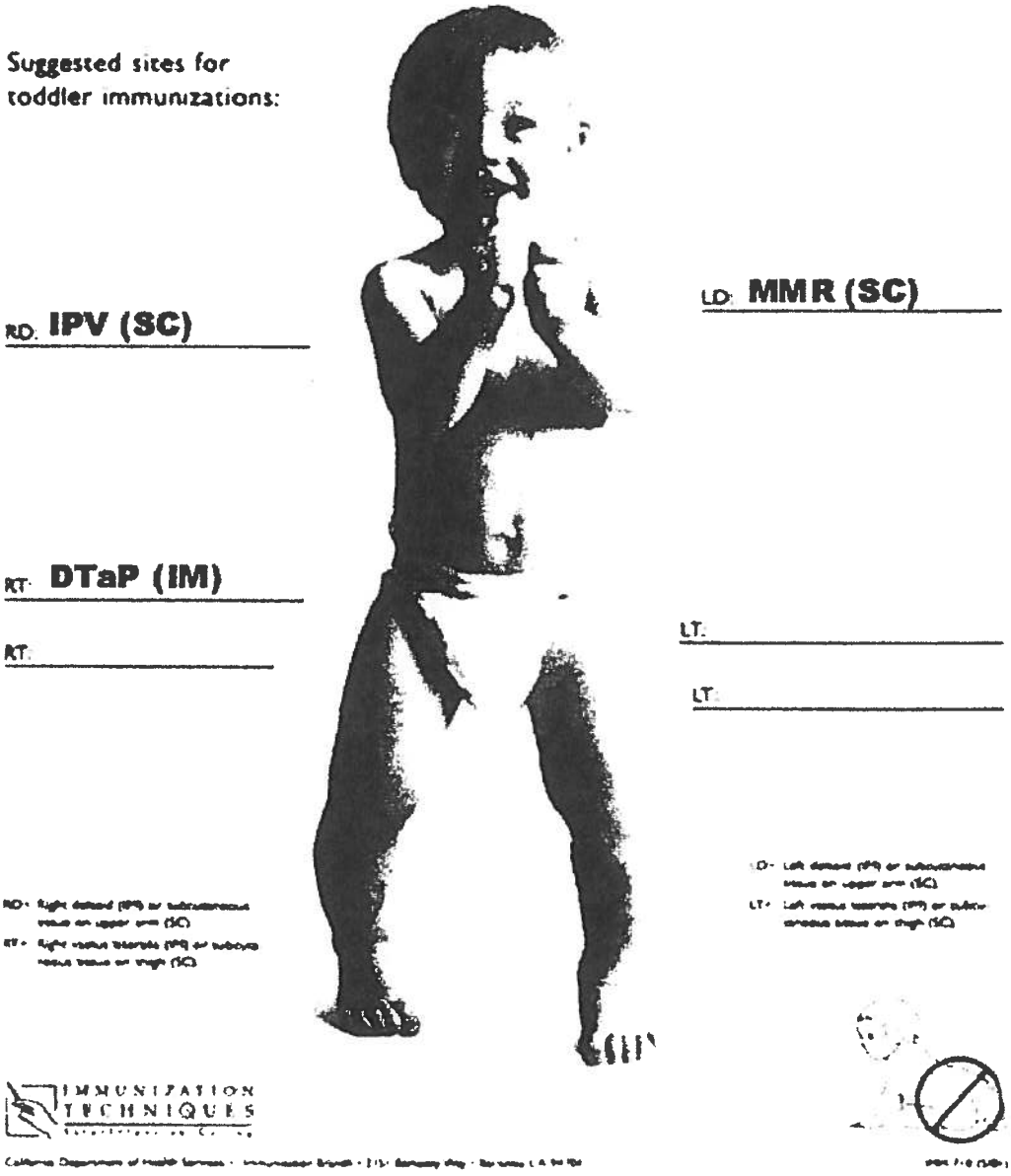
LT - Left vastus lateralis (IM) or subcutaneous tissue on thigh (SC)

IMMUNIZATION TECHNIQUES

Credits are given to the California Dept. of Health, Immunization Branch for the Immunization Site Map. The Guam Dept. Of Public Health, Immunization Program has adapted it to specify vaccine administration.

4-6 Years

Immunization Site Map



Credits are given to the California Dept. of Health, Immunization Branch for the Immunization Site Map. The Guam Dept. Of Public Health, Immunization Program has adapted it to specify vaccine administration.

Giving All the Doses

One way to give 7 doses (if needed) at one visit

- Injection sites should be separated by 1 inch
- IM injections not recommended in infant's arms

IPV (SC)

MMR (SC)

DTaP (IM)

HepB (IM)

Varicella (SC)

PCV7 (IM)

Hib (IM)

The deltoid muscle is an option for IM injections in children 18 months and older with adequate muscle mass

***NOTE: DTap and PCV7 (Prevnar) must be given on separate sites.**

B. VACCINE MANAGEMENT AND HANDLING:

DTaP: Diphtheria Toxoid, Tetanus Toxoid, Acellular Pertussis Vaccine DTaP/ACTHIB: DTaP Vaccine Combined with *Haemophilus influenza* type b Conjugate Vaccine DTaP/HEP B/IPV: DTaP Vaccine, Hepatitis B Vaccine, Inactivated Polio Vaccine	
Shipping Requirements: Should be shipped in insulated container. Maintain temperature at 35° to 46°F (2° to 8°C). **Do not freeze or expose to freezing temperature.**	**Instructions for Reconstitution* or Use:** Shake well before withdrawal and use. Do not use if resuspension does not occur with vigorous shaking.
Condition upon Arrival†: Should not have been frozen or exposed to freezing temperatures. Refrigerate on arrival.	**Shelf Life after Reconstitution* or Opening:** **Single-Dose Vials:** The vaccine should be administered shortly after withdrawal from the vial. **Manufacturer-filled Syringes:** The vaccine should be administered shortly after the needle is attached to the syringe.
Storage Requirements: Refrigerate immediately upon arrival. Store at 35° to 46°F (2° to 8°C). **Do not freeze or expose to freezing temperatures.**	**Special Instructions:** Rotate stock so that the shortest dated material is used first.
Shelf Life: Check expiration date on vial, container, or manufacturer-filled syringe.	

*ActHIB®(Aventis Pasteur) should be used within 24 hours of reconstitution if used alone. If Aventis Pasteur DTaP is used to reconstitute ActHIB®, the TriHIBit® vaccine must be used within 30 minutes of reconstitution. Only Aventis Pasteur DTaP-Tripedia® or the diluent shipped with the product may be used to reconstitute the Aventis Pasteur ActHIB® product. Aventis Pasteur DAPTACEL® is not licensed for use in reconstitution of ActHIB®.

† If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) notify the Quality Control office at the vaccine manufacturer; and 3) notify DPHSS Immunization Program.

DT: Diphtheria, Tetanus Toxoids- Pediatric Td: Tetanus, Diptheria Toxoids- Adult	
Shipping Requirements: Should be shipped in insulated container. Maintain temperature at 35° to 46°F (2° to 8°C). **Do not freeze or expose to freezing temperature.**	**Instructions for Reconstitution or Use:** Shake vial vigorously before withdrawal and use.
Condition upon Arrival†: Should not have been frozen or exposed to freezing temperatures. Refrigerate on arrival.	**Shelf Life after Opening:** Vaccine should be administered shortly after withdrawal from the vial. Unused portions of multidose vials may be refrigerated at 35° to 46°F (2° to 8°C) and used until outdated, if not contaminated.
Storage Requirements: Refrigerate immediately upon arrival. Store at 35° to 46°F (2° to 8°C). **Do not freeze or expose to freezing temperatures.**	**Special Instructions:** Rotate stock so that the shortest dated material is used first.
Shelf Life: Check expiration date on vial or container.	

Hepatitis Vaccines: Hepatitis A, Hepatitis B, Hepatitis A/B	
Shipping Requirements: Should be shipped in insulated container. Maintain temperature at 35° to 46°F (2° to 8°C). **Do not freeze or expose to freezing temperature.**	**Instructions for Use:** Shake vial vigorously before withdrawal and use.
Condition upon Arrival†: Should not have been frozen or exposed to freezing temperatures. Refrigerate on arrival.	**Shelf Life after Opening:** **Single-Dose Vials:** The vaccine should be administered shortly after withdrawal from the vial. **Manufacturer-filled Syringes:** The vaccine should be administered shortly after the needle is attached to the syringe.
Storage Requirements: Refrigerate immediately upon arrival. Store at 35° to 46°F (2° to 8°C). **Do not freeze or expose to freezing temperatures.**	**Special Instructions:** Rotate stock so that the shortest dated material is used first.
Shelf Life: Check expiration date on vial, container, or manufacturer-filled syringe.	

† If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) notify the Quality Control office at the vaccine manufacturer; and 3) notify DPHSS Immunization Program

Hib: *Haemophilus influenza* type b Conjugate Vaccine	
Shipping Requirements: Should be shipped in insulated container. Maintain temperature at 35° to 46°F (2° to 8°C). **Do not freeze or expose to freezing temperature.**	**Instructions for Reconstitution* or Use:** Shake vial vigorously before withdrawal and use. Do not use if resuspension does not occur with vigorous shaking.
Condition upon Arrival†: Should not have been frozen or exposed to freezing temperatures. Refrigerate on arrival.	**Shelf Life after Reconstitution* or Opening:** Vaccine should be administered shortly after withdrawal from the vial.
Storage Requirements: Refrigerate immediately upon arrival. Store at 35° to 46°F (2° to 8°C). **Do not freeze or expose to freezing temperatures.**	**Special Instructions:** Rotate stock so that the shortest dated material is used first.
Shelf Life: Check expiration date on vial or container.	

*ActHIB®(Aventis Pasteur) should be used within 24 hours of reconstitution if used alone. If Aventis Pasteur DTaP is used to reconstitute ActHIB®, the TriHIBit® vaccine must be used within 30 minutes of reconstitution. Only Aventis Pasteur DTaP-Tripedia® or the diluent shipped with the product may be used to reconstitute the Aventis Pasteur ActHIB® product. Aventis Pasteur DAPTACEL® is not licensed for use in reconstitution of ActHIB®.

IPV: Inactivated Polio Vaccine	
Shipping Requirements: Should be shipped in insulated container. Maintain temperature at 35° to 46°F (2° to 8°C). **Do not freeze or expose to freezing temperature.**	**Instructions for Use:** **Multi-dose vials:** Shake vial vigorously before withdrawal and use. Withdraw 0.5 mL of vaccine into separate sterile needle and syringe for each immunization.
Condition upon Arrival†: Should not have been frozen or exposed to freezing temperatures. Refrigerate on arrival.	**Shelf Life after Opening:** Vaccine should be administered shortly after withdrawal from the vial. Doses remaining in the vial may be used until outdated if not contaminated.
Storage Requirements: Refrigerate immediately upon arrival. Store at 35° to 46°F (2° to 8°C). **Do not freeze or expose to freezing temperatures.**	**Special Instructions:** Rotate stock so that the shortest dated material is used first.
Shelf Life: Check expiration date on vial or container.	

† If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) notify the Quality Control office at the vaccine manufacturer; and 3) notify DPHSS Immunization Program.

MMR: Measles/Mumps/Rubella Vaccine

Shipping Requirements:
Vaccine: Should be shipped in insulated container. Must be shipped with refrigerant. Maintain at 50° F (10°C) or colder. If shipped with dry ice, diluent must be shipped separately.
Diluent: May be shipped with vaccine, but do not place in container with dry ice.

Shelf Life:
Check expiration date on vial or container.

Condition upon Arrival†:
Should be at or below 50°F (10°C). If above this temperature, see instructions (†) below. **Do not use warm vaccine.** Refrigerate on arrival.

Instructions for Reconstitution and Use:
Reconstitute just before using. Use only the diluent supplied to reconstitute the vaccine. Inject diluent into the vial of lyophilized vaccine and agitate to ensure thorough mixing. Withdraw entire contents into syringe and inject total volume of vaccine subcutaneously.

Storage Requirements:
Vaccine may be stored separately from diluent. Store as follows:
Vaccine: Refrigerate immediately upon arrival. Store at 35° to 46°F (2° to 8°C). **Protect from light at all times,** since such exposure may inactivate the virus.
Diluent: May be refrigerated or stored at room temperature(68° to 77°F (20° to 25°C). **Do not freeze or expose to freezing temperatures.**
NOTE: Freeze-dried (lyophilized) MMR vaccine may be maintained at freezer temperatures.

Shelf Life after Reconstitution, Thawing or Opening:
After reconstitution, use immediately or store in a dark place at 35° to 46°F (2° to 8°C). **Discard if not used within 8 hours.**

Special Instructions:
Rotate stock so that the shortest dated material is used first.
NOTE: all materials used for administering live virus vaccines should be burned, boiled, or autoclaved prior to disposal.

PCV7: Pneumococcal Conjugate Vaccine (7-Valent)

Shipping Requirements:
Should be shipped in insulated container. Maintain temperature at 35° to 46°F (2° to 8°C). **Do not freeze or expose to freezing temperatures.**

Instructions for Use:
Vaccine should appear as a homogenous white suspension after vigorous shaking. The vaccine should be administered intramuscularly only.

Condition upon Arrival†:
Should not have been frozen or exposed to freezing temperatures. Refrigerate on arrival.

Shelf Life after Opening:
Vaccine should be administered shortly after withdrawal from the vial.

Storage Requirements:
Refrigerate immediately upon arrival. Store at 35° to 46°F (2° to 8°C). **Do not freeze or expose to freezing temperatures.**

Special Instructions:
This vaccine is a suspension containing adjuvant and should not be used if the particles cannot be resuspended after vigorous shaking. Rotate stock so that the shortest dated material is used first.

Shelf Life:
Check expiration date on vial or container.

† If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) notify the Quality Control office at the vaccine manufacturer; and 3) notify DPHSS Immunization Program.

PPV23: Pneumococcal Polysaccharide Vaccine (23-Valent)	
Shipping Requirements: Should be shipped in insulated container. Maintain temperature at 35° to 46°F (2° to 8°C). **Do not freeze or store vaccine in direct contact with refrigerant.**	**Instructions for Use:** Follow manufacturer's directions.
Condition upon Arrival†: Should not have been frozen or exposed to freezing temperatures. Refrigerate on arrival.	**Shelf Life after Opening:** **Single-dose vials:** Vaccine should be administered shortly after withdrawal from the vial. **Multi-dose vials:** Unused portions of multi-dose vials may be refrigerated at 35° to 46°F (2° to 8°C) and used until outdated, if not contaminated.
Storage Requirements: Refrigerate immediately upon arrival. Store at 35° to 46°F (2° to 8°C). **Do not freeze or expose to freezing temperatures.**	**Special Instructions:** Do not inject intravenously. Intradermal administration may cause severe local reactions and should be avoided. Rotate stock so that the shortest dated material is used first.
Shelf Life: Check expiration date on vial or container.	

TIV: Trivalent Inactivated Influenza Vaccine ("Flu shot")	
Shipping Requirements: Should be shipped in insulated container. Maintain temperature at 35° to 46°F (2° to 8°C). **Do not freeze or expose to freezing temperature.**	**Instructions for Use:** Shake vial vigorously before withdrawal and use.
Condition upon Arrival†: Should not have been frozen or exposed to freezing temperatures. Refrigerate on arrival.	**Shelf Life after Opening:** **Multi-dose vials:** Vaccine should be administered shortly after withdrawal from the vial. Doses remaining in the vial may be used until outdated if not contaminated. **Manufacturer-filled syringes:** Sterile until removal of hub cap.
Storage Requirements: Refrigerate immediately upon arrival. Store at 35° to 46°F (2° to 8°C). **Do not freeze or expose to freezing temperatures.**	**Special Instructions:** Rotate stock so that the shortest dated material is used first.
Shelf Life: Formulated for use during current influenza season.	

† If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) notify the Quality Control office at the vaccine manufacturer; and 3) notify DPHSS Immunization Program.

Varicella (Chickenpox) Vaccine

Shipping Requirements:
Vaccine: Should be shipped in insulated container. Must be shipped with dry ice only, at 4°F (-20°C) or colder. Should be delivered within 2 days.
Diluent: May be shipped with vaccine, but do not place in container with dry ice.

Condition upon Arrival†:
Should be frozen. Vaccine should remain at 4°F (-20°C) or colder until arrival at the healthcare facility. Dry ice should still be present in the shipping container when vaccine is delivered.

Storage Requirements:
Vaccine: Freeze immediately upon arrival. Maintain vaccine in a continuously frozen state at 5°F (-15°C) or colder. **No freeze/thaw cycles are allowed with this vaccine. Protect from light at all times,** since such exposure may inactivate the virus. Vaccine should only be stored in freezers or refrigerator/ freezers with separate doors and compartments. "Dormitory-style" units are not appropriate for the storage of varicella vaccine. In order to maintain temperatures of 5°F (-15°C) or colder, it will be necessary in most refrigerator/ freezer models to turn the temperature dial down to the coldest setting. Careful monitoring of the refrigerator temperature will be necessary to avoid freezing killed or inactivated vaccines.
Diluent: May be refrigerated or stored at room temperature(68° to 77°F (20° to 25°C). **Do not freeze or expose to freezing temperatures.**

Shelf Life:
Check expiration date on vial or container.

Instructions for Reconstitution and Use:
Reconstitute just before using. Use only the diluent supplied to reconstitute the vaccine. Inject diluent into the vial of lyophilized vaccine and agitate to ensure thorough mixing. Withdraw entire contents into syringe and inject total volume of vaccine subcutaneously.

Shelf Life after Reconstitution, Thawing or Opening:
After reconstitution, use immediately. **Discard if not used within 30 minutes.**

Special Instructions:
If this vaccine is stored at a temperature warmer than 5°F (-15°C), it will result in a loss of potency and a reduced shelf life. If a power outage or some other situation occurs that results in the vaccine storage temperature rising above the recommended temperature, the healthcare provider should contact Merck, the vaccine manufacturer, at 1-800-609-4618 for a reevaluation of the product potency before using the vaccine.
Rotate stock so that the shortest dated material is used first.
NOTE: all materials used for administering live virus vaccines should be burned, boiled, or autoclaved prior to disposal.

† If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) notify the Quality Control office at the vaccine manufacturer; and 3) notify DPHSS Immunization Program.

C. Resources used in the development of this guide

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CDC Guide to Contraindications to Childhood Vaccinations, September 2003.
CDC Epidemiology and Prevention of Vaccine Preventable Disease. 8th Edition. January 2004.
CDC Recommended Childhood Immunization Schedule—United States, 2005.
CDC Recommendations of the Advisory Committee on Immunization Practices. 2005
CDC Vaccine Information Statements
CDC Vaccine Management- Recommendations for Handling and Storage of Selected Biologicals. 2005
CDC/NIP Recommendations on PCV7 & PPV23.
California Department of Health Services, Immunization Branch, Immunization Site Map
Minnesota Department of Health, Acute Disease Prevention Services, Providers Guide. June 1997

If there are any questions or concerns regarding the Immunization Protocol, please feel free to contact the Immunization Program at (671) 735-7143/7148 or fax us at (671) 734-1475.

Immunization Staff: Annette L. Aguon, CDC Coordinator III
Michele S. Leon Guerrero, CDC Coordinator II
Annie Lizama, CDC Coordinator I
Rita Oliva, CDC Coordinator I
Wade Roberto, CPA I
Daryl Diras, CPA I