2013 Childhood & Adolescent Immunization Schedules

County of Los Angeles Immunization Program

County of Los Angeles Public Health

OBJECTIVES

After this in-service, the participants will be able to:

- Determine the most appropriate schedule to use when evaluating a child's immunization status.
- Discuss the new recommendations for use of Tdap in pregnant women.
- State the correct interval when 2 live vaccines are not administered on the same day.
- Determine who should receive influenza vaccine if they have an allergy to egg.
- State two key messages for dealing with vaccine-hesitant parents.

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Now we'll discuss the immunization schedule for infants and young children.

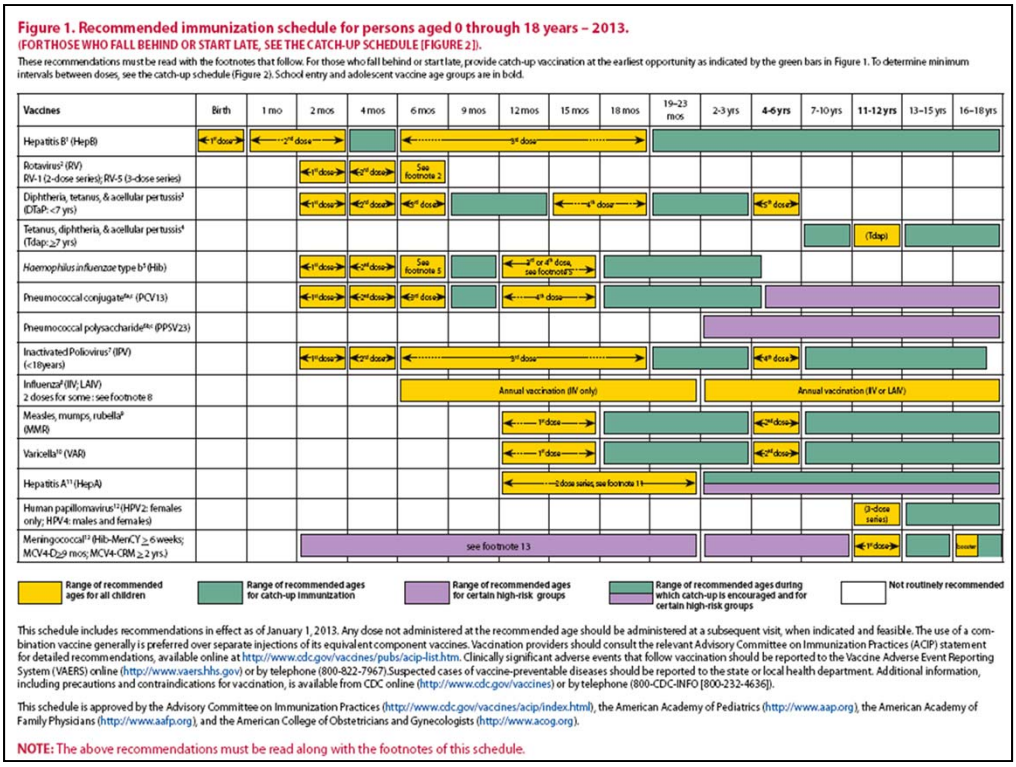


Figure 1. Recommended immunization schedule for persons aged 0 through 18 years – 2013.
(FOR THOSE WHO FALL BEHIND OR START LATE, SEE THE CATCH-UP SCHEDULE [FIGURE 2]).

These recommendations must be read with the footnotes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars in Figure 1. To determine minimum intervals between doses, see the catch-up schedule (Figure 2). School entry and adolescent vaccine age groups are in bold.

Vaccines	Birth	1 mo	2 mos	4 mos	6 mos	9 mos	12 mos	15 mos	18 mos	19–23 mos	2–3 yrs	4–6 yrs	7–10 yrs	11–12 yrs	13–15 yrs	16–18 yrs
Hepatitis B[1] (HepB)	1st dose	2nd dose			3rd dose											
Rotavirus[2] (RV) RV-1 (2-dose series); RV-5 (3-dose series)			1st dose	2nd dose	See footnote 2											
Diphtheria, tetanus, & acellular pertussis[3] (DTaP: <7 yrs)			1st dose	2nd dose	3rd dose			4th dose				5th dose				
Tetanus, diphtheria, & acellular pertussis[4] (Tdap: ≥7 yrs)														(Tdap)		
Haemophilus influenzae type b[5] (Hib)			1st dose	2nd dose	See footnote 5		2nd or 3rd dose, see footnote 5									
Pneumococcal conjugate[Rec] (PCV13)			1st dose	2nd dose	3rd dose			4th dose								
Pneumococcal polysaccharide[Rec] (PPSV23)																
Inactivated Poliovirus[7] (IPV) (<18 years)			1st dose	2nd dose			3rd dose					4th dose				
Influenza[8] (IIV; LAIV) 2 doses for some: see footnote 8					Annual vaccination (IIV only)						Annual vaccination (IIV or LAIV)					
Measles, mumps, rubella[9] (MMR)							1st dose					2nd dose				
Varicella[10] (VAR)							1st dose					2nd dose				
Hepatitis A[11] (HepA)							2-dose series, see footnote 11									
Human papillomavirus[12] (HPV2: females only; HPV4: males and females)														(3-dose series)		
Meningococcal[13] (Hib-MenCY ≥ 6 weeks; MCV4-D ≥9 mos; MCV4-CRM ≥ 2 yrs.)			see footnote 13											1st dose	booster	

Range of recommended ages for all children
Range of recommended ages for catch-up immunization
Range of recommended ages for certain high-risk groups
Range of recommended ages during which catch-up is encouraged and for certain high-risk groups
Not routinely recommended

This schedule includes recommendations in effect as of January 1, 2013. Any dose not administered at the recommended age should be administered at a subsequent visit, when indicated and feasible. The use of a combination vaccine generally is preferred over separate injections of its equivalent component vaccines. Vaccination providers should consult the relevant Advisory Committee on Immunization Practices (ACIP) statement for detailed recommendations, available online at http://www.cdc.gov/vaccines/pubs/acip-list.htm. Clinically significant adverse events that follow vaccination should be reported to the Vaccine Adverse Event Reporting System (VAERS) online (http://www.vaers.hhs.gov) or by telephone (800-822-7967). Suspected cases of vaccine-preventable diseases should be reported to the state or local health department. Additional information, including precautions and contraindications for vaccination, is available from CDC online (http://www.cdc.gov/vaccines) or by telephone (800-CDC-INFO [800-232-4636]).

This schedule is approved by the Advisory Committee on Immunization Practices (http://www.cdc.gov/vaccines/acip/index.html), the American Academy of Pediatrics (http://www.aap.org), the American Academy of Family Physicians (http://www.aafp.org), and the American College of Obstetricians and Gynecologists (http://www.acog.org).

NOTE: The above recommendations must be read along with the footnotes of this schedule.

Immunizations are given based on a schedule jointly recommended by the ACIP, AAP and AAFP. These immunization schedules have been published since 1995 and are updated and published every year. It is usually available in January. This slide shows the 2013 Recommended Immunization Schedule for Persons Aged 0 Through 18 Years. This year, for the first time since 2007, the immunization schedules for persons aged 0 through 18 years are being published together. Healthcare providers are advised to use both the recommended schedule and the catch-up schedule in combination with the footnotes and not as stand-alones.

2013 schedule changes include:

• the meningococcal conjugate vaccine (MCV4) purple bar was extended to age 6 weeks to reflect the licensure of Hib-MenCY (MenHibrix) vaccine

• the hepatitis A vaccine yellow bar was extended to better reflect routine age recommendations for use of Hep A vaccine; new green and purple bars were added to reflect hepatitis A recommendations for older children

• abbreviations for influenza vaccine were updated with the anticipation of quadrivalent vaccine for the 2013-14 influenza season – inactivated vaccine will no longer be referred to as TIV (trivalent inactivated influenza vaccine) but will be referred to as IIV (inactivated influenza vaccine)

• Pneumococcal vaccine: a footnote in the schedule lists the medical conditions for which 13-valent pneumococcal conjugate vaccine is indicated in children aged 24-71 months and indications for the use of Pnuemoccocal polysaccharide vaccine (PPSV23) in children at least 2 years of age

• Rotavirus vaccine: a footnote clarifies the number of doses for RV1 and RV5

• Hib vaccine: a footnote specifies that unvaccinated children at least 15 months of age should receive only 1 dose of this vaccine

FIGURE 2. Catch-up immunization schedule for persons aged 4 months through 18 years who start late or who are more than 1 month behind—United States • 2013

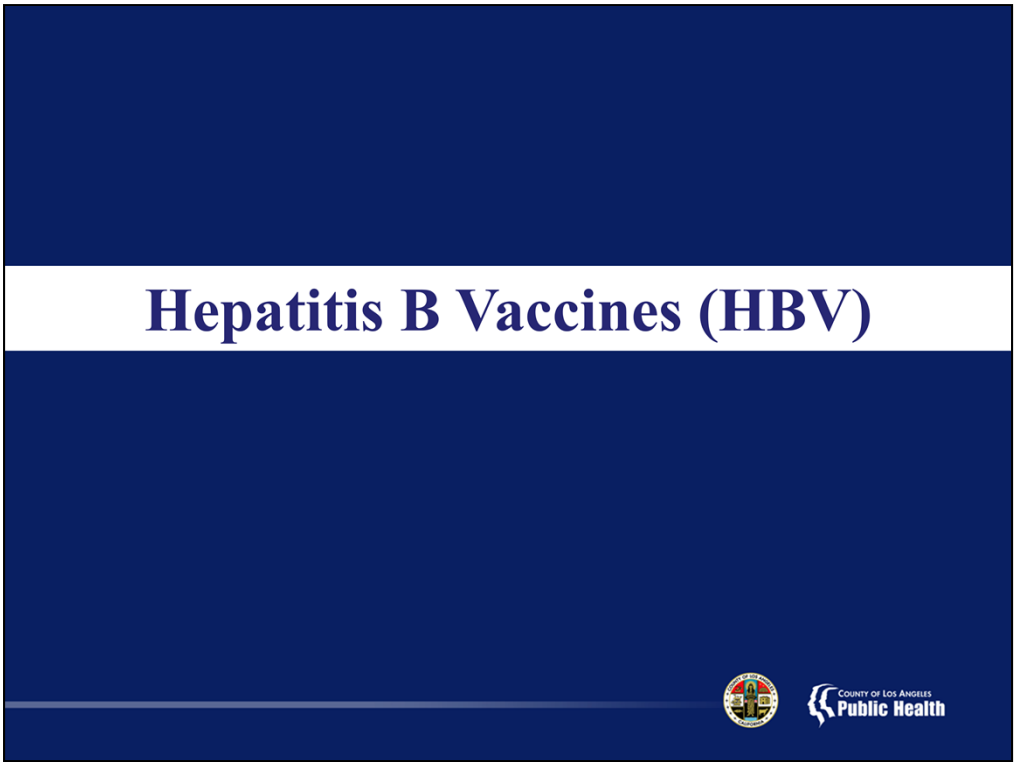
The figure below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child's age. Always use this table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

Vaccine	Minimum Age for Dose 1	Minimum Interval Between Doses			
		Dose 1 to dose 2	Dose 2 to dose 3	Dose 3 to dose 4	Dose 4 to dose 5
Persons aged 4 months through 6 years					
Hepatitis B[7]	Birth	4 weeks	8 weeks and at least 16 weeks after first dose; minimum age for the final dose is 24 weeks		
Rotavirus[2]	6 weeks	4 weeks	4 weeks[2]		
Diphtheria, tetanus, pertussis[3]	6 weeks	4 weeks	4 weeks	6 months	6 months[3]
Haemophilus influenzae type b[4]	6 weeks	4 weeks If first dose administered at younger than age 12 months 8 weeks (as final dose) If first dose administered at age 12–14 months No further doses needed If first dose administered at age 15 months or older	4 weeks[4] If current age is younger than 12 months 8 weeks (as final dose)[4] If current age is 12 months or older and first dose administered at younger than age 12 months and second dose administered at younger than 15 months No further doses needed If previous dose administered at age 15 months or older	8 weeks (as final dose) This dose only necessary for children aged 12 through 59 months who received 3 doses before age 12 months	
Pneumococcal[5]	6 weeks	4 weeks If first dose administered at younger than age 12 months 8 weeks (as final dose for healthy children) If first dose administered at age 12 months or older or current age 24 through 59 months No further doses needed for healthy children if first dose administered at age 24 months or older	4 weeks If current age is younger than 12 months 8 weeks (as final dose for healthy children) If current age is 12 months or older No further doses needed for healthy children if previous dose administered at age 24 months or older	8 weeks (as final dose) This dose only necessary for children aged 12 through 59 months who received 3 doses before age 12 months or for children at high risk who received 3 doses at any age	
Inactivated poliovirus[7]	6 weeks	4 weeks	4 weeks	6 months[7] minimum age 4 years for final dose	
Meningococcal[6]	6 weeks	8 weeks[13]	see footnote 13	see footnote 13	
Measles, mumps, rubella[8]	12 months	4 weeks			
Varicella[9]	12 months	3 months			
Hepatitis A[11]	12 months	6 months			
Persons aged 7 through 18 years					
Tetanus, diphtheria; tetanus, diphtheria, pertussis[3]	7 years[3]	4 weeks	4 weeks If first dose administered at younger than age 12 months 6 months If first dose administered at 12 months or older	6 months If first dose administered at younger than age 12 months	
Human papillomavirus[10]	9 years	Routine dosing intervals are recommended[10]			
Hepatitis A[11]	12 months	6 months			
Hepatitis B[7]	Birth	4 weeks	8 weeks (and at least 16 weeks after first dose)		
Inactivated poliovirus[7]	6 weeks	4 weeks	4 weeks[7]	6 months[7]	
Meningococcal[6]	6 weeks	8 weeks[13]			
Measles, mumps, rubella[8]	12 months	4 weeks			
Varicella[9]	12 months	3 months If person is younger than age 13 years 4 weeks If person is aged 13 years or older			

NOTE: The above recommendations must be read along with the footnotes of this schedule.

This slide shows the 2013 Catch-up Immunization Schedule for Persons Aged 4 Months Through 18 Years Who start Late or Who are More Than 1 Month Behind. This table shows minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child's age.

For example, let's take a look at the Pneumococcal recommendations. If a child received the 1st PCV dose at age 12 months or older or current age is 24-59 months, they would need a 2nd dose in 8 weeks and it would be their final dose (for healthy children). If the child was 24 months or older at the time of the first dose, they wouldn't need any further doses.



We will review each vaccine as it is listed on the Recommended Immunization Schedule, starting with Hepatitis B.

Hepatitis B Monovalent Vaccines

- Recombivax HB®
  (Merck)

- Engerix-B®
  (GSK)

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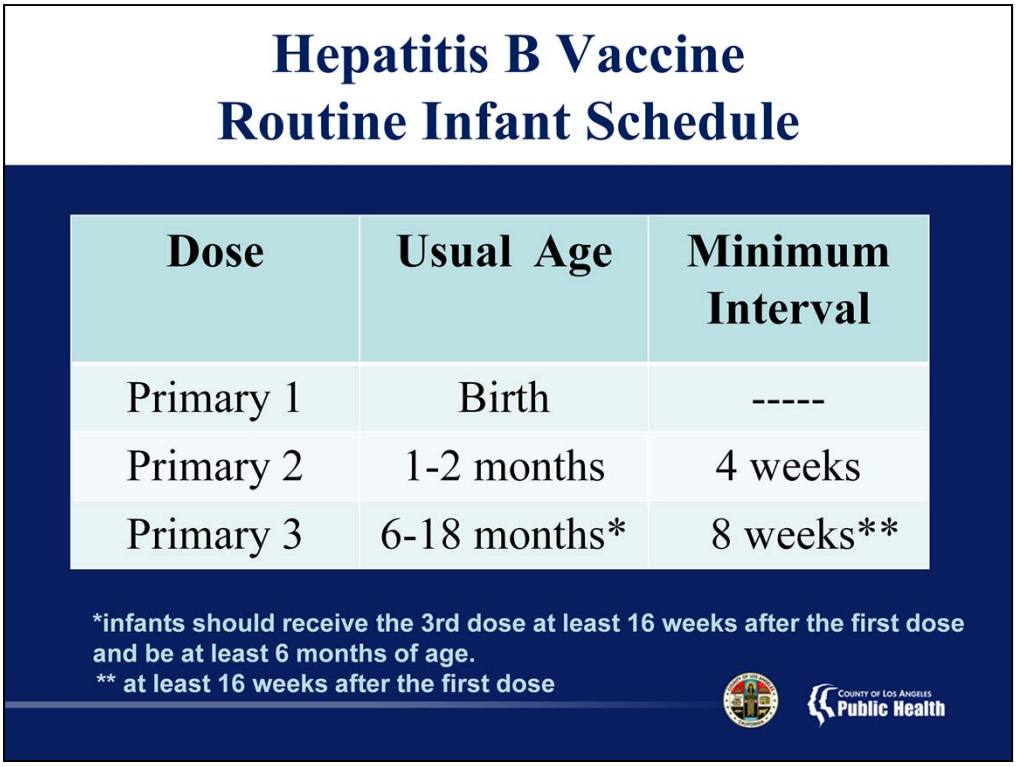
HBV is available as a single-antigen (monovalent) formulation. Those vaccines are Recombivax and Engerix. There are also combination vaccines (Comvax and Pediarix) that contain Hepatitis B. We will talk about these on the next slide. The single-antigen vaccines are interchangeable and all have the same rates of seroconversion. This means that they all provide the same amount of protection against Hepatitis B. If you start with one vaccine you can complete the series with another vaccine.

The hepatitis B series for infants and children consists of three doses spread over 6 to 18 months. All infants should receive a dose of hepatitis B vaccine at birth.



•Primary vaccination with HBV consists of 3 IM doses. The vaccine schedule for infants begins at 0-2 months of age. All providers are encouraged to vaccinate infants at birth regardless of the mom's Hepatitis B status. Infants vaccinated at birth and prior to 6 weeks of age should receive the single-antigen HBV. The combination vaccines Pediarix and Comvax can ***only*** be used for infants 6 weeks and older.

Hepatitis B vaccine should be administered to infants @ 0, 2, 6 months. Infants who receive the birth dose of hepatitis B may receive a total of four doses if a combination vaccine such as Comvax or Pediarix is used at the 4 month visit and that's okay. Remember, the last dose of hepatitis B vaccine must be administered on or after age 6 months and be at least 16 weeks from the dose #1.

•Hep B vaccine can be given simultaneously with all other childhood vaccines, at different anatomic sites.

•Minimum acceptable interval between dose #1 and #2 is 1 month (4 weeks).

•Minimum acceptable interval dose #2 and #3 is 2 months (8 weeks). Dose #3 must also be at least 4 months (16 weeks) after dose #1 and the infant must be at least 24 weeks **(6 months)** of age. If the interval and age requirements are not met for the 3rd dose, it ***will not*** be counted as valid.

Rotavirus Vaccines (RV1/RV5)

Rotavirus Vaccine Schedule

	Rotateq® (RV5) Merck 	Rotarix® (RV1) GSK 
Dosage	2 ml	1 ml
Number of doses in series	3	2
Recommended ages for doses	2,4, & 6 months	2 & 4 months
Minimum age for first dose	6 weeks	6 weeks
Maximum age for first dose	14 weeks/ 6 days	14 weeks/ 6 days
Maximum age for last dose	8 months/ 0 days	8 months/ 0 days

There are 2 rotavirus vaccines licensed for use in the United States – Rotarix (RV1) and Rotateq (RV5). Rotarix, RV1, is a series of two 1 mL doses. Rotateq, RV5, is a series of three 2 mL doses.

- complete the series with the same product whenever possible
- if product used for a prior dose is unavailable or unknown, continue/complete the series with the vaccine available
- if any dose in the series was RV5 or unknown, a total of 3 doses of rotavirus vaccine should be administered

Do not re-administer a dose that a child has spit out or regurgitated. Rotavirus vaccine may be administered at any time before, concurrent with, or after administration of any blood product, including antibody-containing products. Please see the section on Rotavirus in the Pink Book for further information regarding Rotavirus and administration of blood products.

DTaP Vaccines

DTaP Vaccines

- Daptacel
  - Sanofi Pasteur

- Infanrix
  - GlaxoSmithKline (GSK)

There are two DTaP vaccines and 3 combination DTaP vaccines licensed in the United States and available through the Vaccine For Children (VFC) Program. ACIP recommends that the series be completed with the same brand of DTaP vaccine if possible. However, if the provider does not know or have available the type of DTaP vaccine previously administered, any available DTaP vaccine should be used to continue or complete the vaccination series.

Please note: Tripedia was discontinued in 2011. Please refer to http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/discontinued_vaccines.pdf for further information.

DTaP Vaccination Schedule

Dose	Age	Recommended Interval Until Next Dose	Minimal Intervals
1	2 months	2 months	
2	4 months	2 months	4 weeks
3	6 months	6-12 months	4 weeks
4*	15-18 mo	3 years	6 months
Booster (5th)	4 - 6 years		6 months

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The primary series consists of four doses of DTaP, recommended at 2, 4 and 6, and 15 months of age, followed by a booster dose between 4-6 years of age.

The **recommended** interval between doses 1 and 2 is 2 months; the **minimal** interval is 4 weeks.

The **recommended** interval between doses 2 and 3 is 2 months; the **minimal** interval is 4 weeks.

The **recommended** interval between doses 3 and 4 is 6-12 months; the **minimal** interval is 6 months.

The **recommended age** for the 5th booster dose is between 4-6 years of age. The 5th dose is usually given prior to the child entering preschool or kindergarten.

***Please note: If the 4th dose of DTaP is administered before the 4th birthday, a booster (5th) dose is recommended at 4-6 years of age. The fifth dose is not required if the 4th dose was given on or after the 4th birthday.**

The minimum recommended interval between DTaP-3 and DTaP-4 is 6 months. However, DTaP-4 need not be repeated if administered *in error* at least 4 months after DTaP-3

Please see the section on Diphtheria in the Pink Book for further information on

DTaP vaccine.

Haemophilus Influenzae type B Vaccines (Hib)

H. Influenzae type B (Hib)Vaccines

- ActHIB®
  (sanofi pasteur)

- PedvaxHIB®
  (Merck)

- Comvax®
  Hep B- Hib
  (Merck)

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•All infants, should receive a primary series of conjugate Hib vaccine, separate or in combination, beginning at 2 months of age. The minimal interval between primary doses is 4 weeks. The number of doses in the primary series depends on the type of vaccine used.

•Hib vaccines, including combination vaccines that contain Hib conjugate, should never be given to a child younger than 6 weeks of age.

•If PedvaxHib or Comvax (which contains PedvaxHib) is administered at ages 2 & 4 months, a dose at 6 months is not required. If a child less than 7 months of age receives a brand of Hib vaccine other than PedvaxHib or Comvax for one of the primary doses, 3 doses are required to complete the primary series.

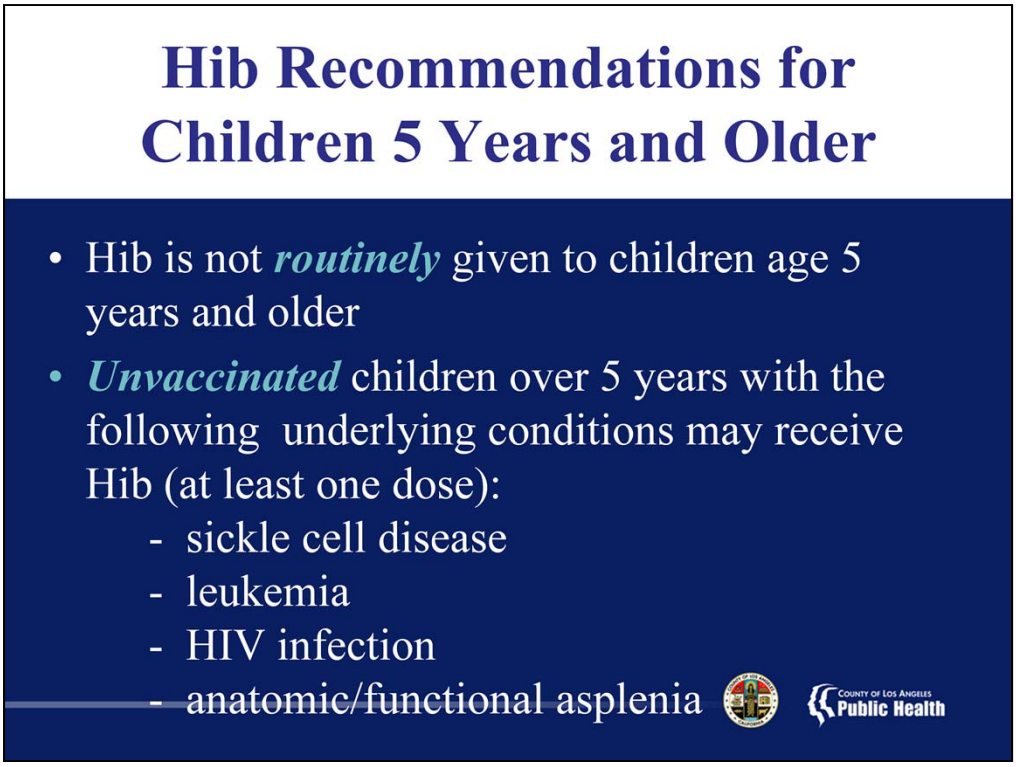
•A booster is recommended at 12-15 months. Any licensed conjugate vaccine may be used for the booster dose regardless of what was received in the primary series.

•The recommended Hib vaccination schedule varies by vaccine manufacture and the age of child when the series is started. All infants, should receive a primary series of conjugate Hib vaccine, separate or in combination, beginning at 2 months of age. We will review the schedules for each vaccine next.

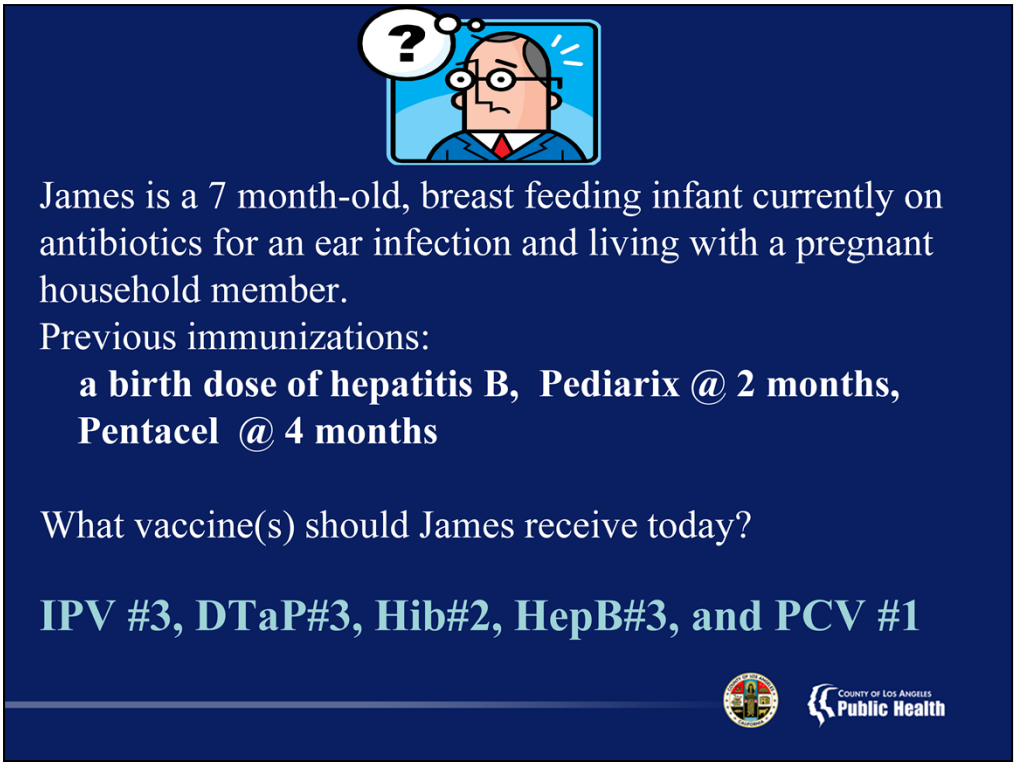
•In general, children 5 years and older do not need Hib vaccination, because most of them have already developed immunity against Hib. We will talk about Hib recommendations for children 5 years and older in the slide after the next one.

Vaccine	Dose	Age	Minimum Age for 1st Dose	Recommended Schedule		Booster (*at least 2 months after previous dose)
				Age at 1st Dose	# of Doses & Intervals	
PedvaxHIB® & Comvax®	0.5 mL IM	2-6 months	6 weeks	2-6 months	2 doses, 2 months apart	12-15 months*
				7-11 months	2 doses, 2 months apart	12-15 months*
				12-14 months	1 dose	2 months later
				15-59 months	1 dose	----------
ActHIB™	0.5 mL IM	2-6 months	6 weeks	2-6 months	3 doses, 2 months apart	12-15 months*
				7-11 months	2 doses, 2 months apart	12-15 months*
				12-14 months	1 dose	2 months later
				15-59 months	1 dose	----------
Hiberix™	0.5 mL IM	12 months	12 months	12-15 months of age Approved *only* for the last dose of Hib series in children 12 months of age and older		

- The recommended Hib schedule varies by vaccine manufacturer and the age of child when the series is started. All infants should receive a primary series of conjugate Hib vaccine, separate or in combination, beginning at 2 months of age. The number of doses in the primary series depends on the type of vaccine used. All 3 conjugate Hib vaccines licensed for use in infants are interchangeable. A primary series that includes vaccine of more than one type will induce adequate antibody levels.
- This slide shows the different number of doses required depending upon the age at which the child receives the first dose.
- Please note that Hiberix is licensed ***only*** for the booster dose.



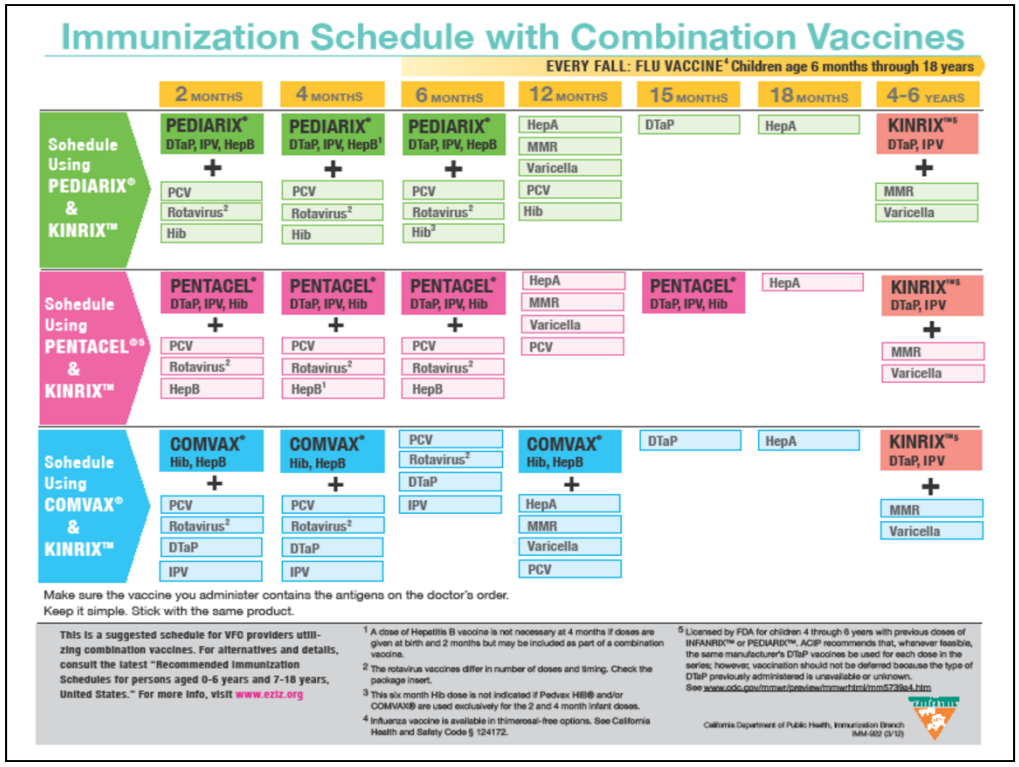
Hib vaccine should be considered for unvaccinated persons aged 5 years or older who have sickle cell disease, leukemia, human immunodeficiency virus (HIV) infection, or anatomic/functional asplenia. Unvaccinated children in these high risk categories should receive at least one dose of Hib.



James has received 2 doses of IPV (Pediarix & Pentacel), 2 doses of DTaP (Pediarix & Pentacel), 2 doses of Hepatitis B (birth dose, Pediarix) and a dose of Hib (Pentacel). He has yet to receive PCV. He is too old to receive Rotarix. Remember, the first dose of rotavirus vaccine should be administered by 14 weeks 6 days.

There are no contraindications to vaccinations for infants with an ear infection or living with a pregnant household member.

Combination Vaccines



This is the suggested schedule for providers who use combination vaccines that contain DTaP, IPV, Hep B and Hib. Licensed combination vaccines can be used whenever any components of the combination are indicated and its other components are not contraindicated and if licensed by the Food and Drug Administration (FDA) for that dose in the series. Studies have demonstrated that parents and providers might be uncomfortable with multiple injections during single visits. Use of combination vaccines can reduce the number of injections patients receive and alleviate concern associated with the number of injections.

When administering combination vaccines, please give a VIS for each antigen in the combination vaccine. For example, for Pediarix, you can give the multiple vaccine VIS for children 0-6 months of age or give one each of the DTaP, IPV and Hepatitis B VISs.

DTaP - Hepatitis B - IPV

Pediarix®
(GlaxoSmithKline)

- Licensed for children 6 weeks through 6 years
  - ➢Licensed for the first three doses only
- May be used interchangeably with other DTaP vaccines
- Can be given at 2, 4, and 6 months in infants who received a birth dose of Hep B

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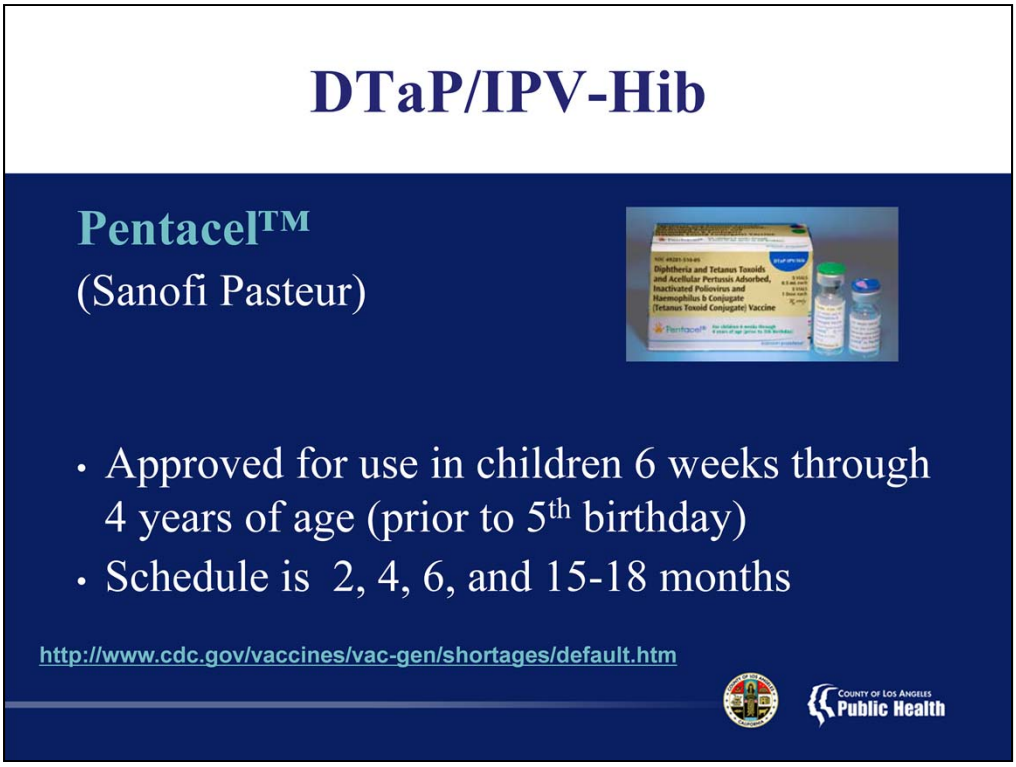
The components of Pediarix include DTaP-Hep B-IPV. Pediarix is licensed for the primary series only (i.e. 1st, 2nd and 3rd doses).

Do not use for the 4th and 5th doses.



Pentacel is produced by Sanofi Pasteur and was approved for use in the United States by the FDA on June 23, 2008. The DTaP component is sanofi pasteur's Daptacel and the Hib component is ActHIB.

The DTaP-IPV component is liquid and the ActHIB component is lyophilized which means it has been freeze-dried into a powder substance. Please do not reconstitute the Hib component with anything other than the DTaP-IPV that is supplied with it.

Please note that there has been a delay in the manufacturing of Pentacel since April of 2012 and there is a shortage of the vaccine. Although it remains available, order limitations are necessary. The shortage is ongoing until March 2013. For updates on the shortage for this vaccine, as well as others, please refer to the CDC website shown on the slide.

Hib – Hepatitis B

Comvax®

(Merck)

- Licensed for use as a 3-dose series
- Not approved for birth dose (<6 weeks of age)
- If given for the first 2 doses at 2 and 4 months, the third (booster) dose should be given at 12-15 months.

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Comvax (which contains HBV & Hib) provides the same hepatitis B protection as the single-antigen vaccines. However, it cannot be administered to infants aged <6 weeks.

DTaP - IPV

Kinrix™

(GlaxoSmithKline)

- Licensed for the 5th dose of DTaP
- Licensed for the 4th dose of IPV
- Should only be administered to children aged 4-6 years

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Kinrix is also produced by GSK and contains DTaP and IPV. Kinrix is licensed ***only*** for the ***fifth dose*** of DTaP and the fourth dose of IPV and should only be administered to children 4 through 6 years of age.

Pneumococcal Conjugate Vaccine (PCV13)

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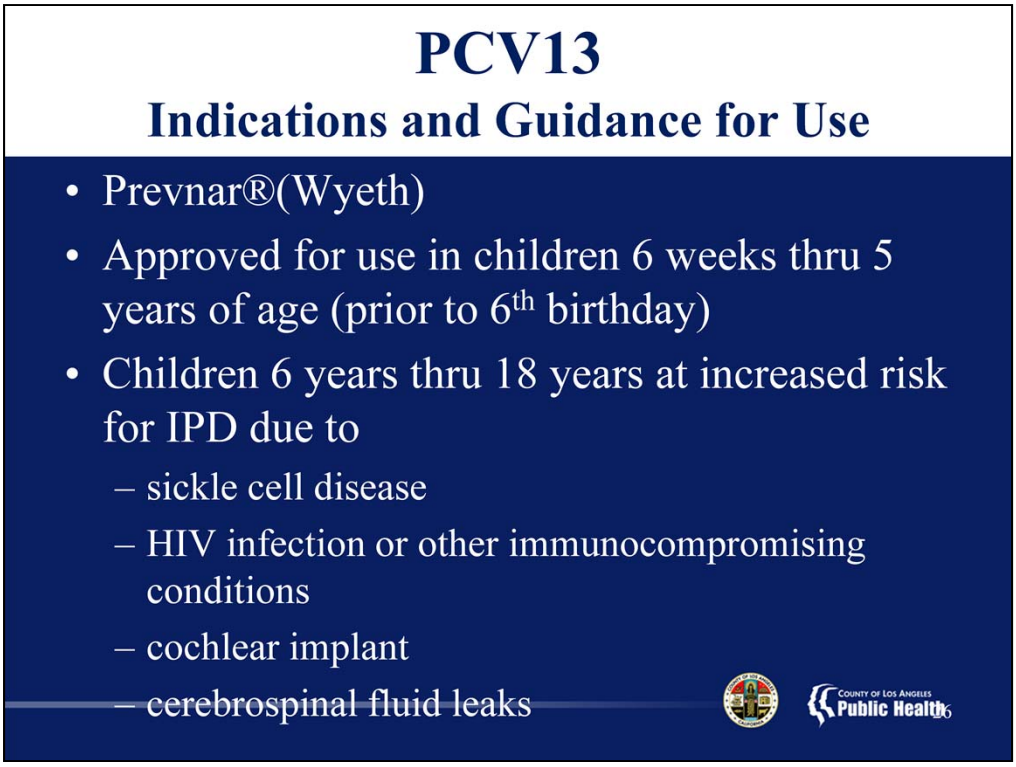

- Infant vaccination provides the earliest possible protection, and children aged ≤23 months have the highest rates of pneumococcal infection.
- Those at high risk include children who have sickle cell anemia, no spleen or damaged spleen, HIV or AIDS and other immunocompromising conditions due to cancer, chronic kidney syndrome or who have had an organ transplant. Other children at risk are children with diabetes, heart or pulmonary disease, and children who are on chemotherapy or steroids.
- ACIP recommends that health-care providers consider PCV13 vaccination for all other children unvaccinated aged 24–59 months, with priority given to the following populations:
    1. children aged 24–35 months;
    2. children of Alaska Native or American Indian descent;
    3. children of African-American descent;
    4. children who attend group day care centers;
- Unvaccinated children 7 months of age and older do not require a full series of four doses. The number of doses a child needs to complete the series depends on the child's current age. Please refer to the catch-up schedule for PCV13 doses as they relate to the age of the child.

Polio Vaccine (IPV)

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Polio Vaccine (IPV)

- Inactivated trivalent polio vaccine (IPV) is available separately as IPOL® or as a component of 3 combination vaccines
- Oral polio vaccine (OPV) is not available in in the United States

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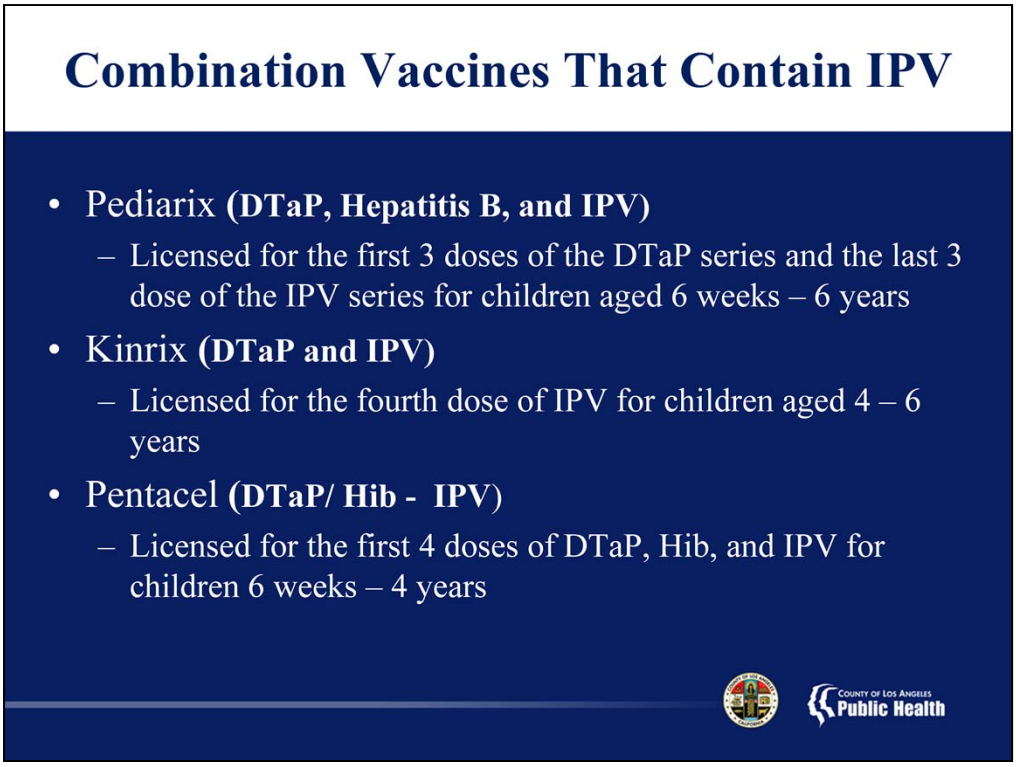
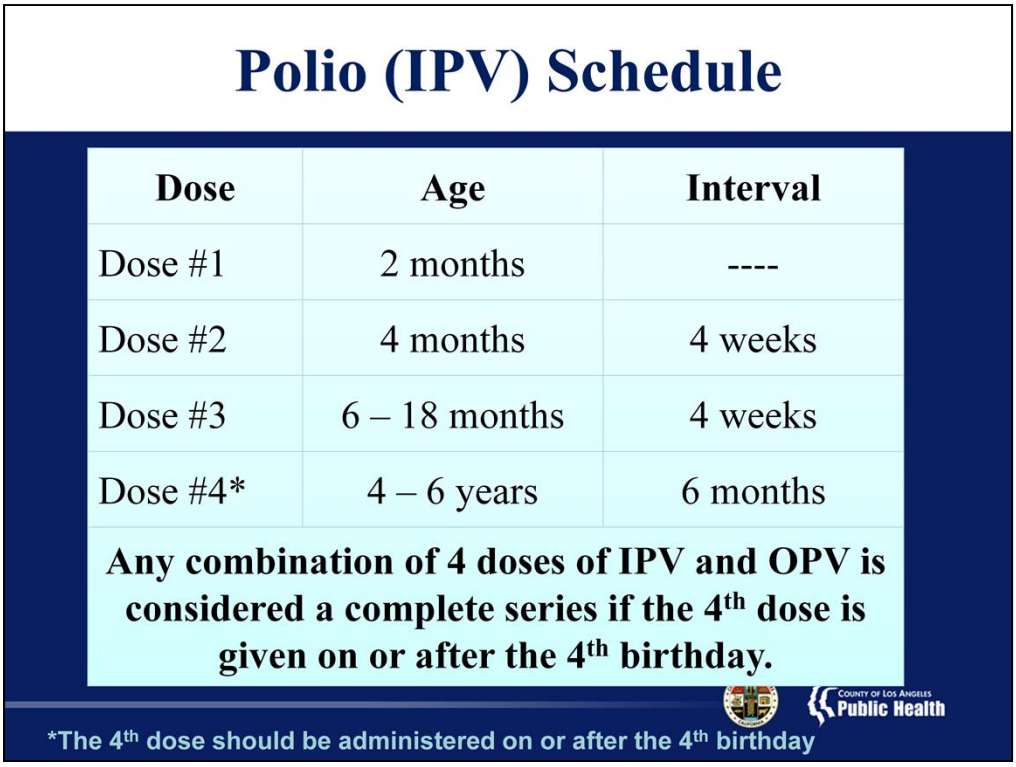
Only IPV is available for routine polio vaccination of children in the United States. A polio vaccination schedule begun with OPV (oral polio vaccine) should be completed with IPV. If a child receives both types of vaccine, four doses of any combination of IPV or OPV by 4–6 years of age is considered a complete poliovirus vaccination series. A minimum interval of 4 weeks should separate all doses of the series.



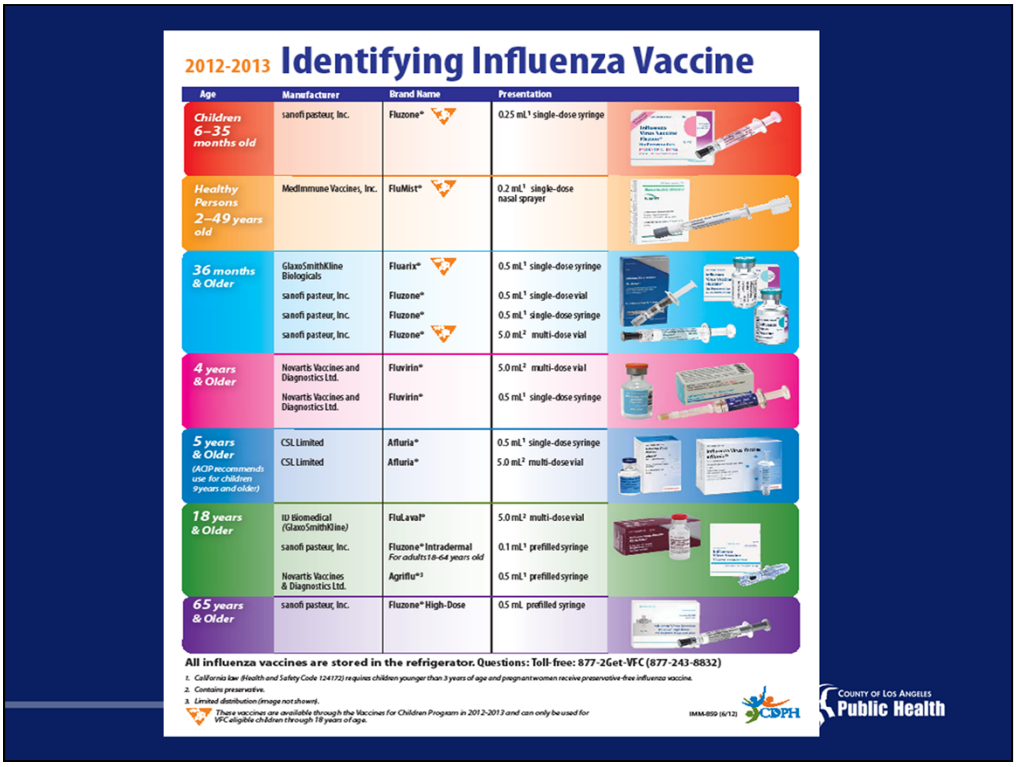
There are three combination vaccines that contain inactivated polio vaccine. Pediarix is produced by GlaxoSmithKline and contains DTaP, hepatitis B and IPV vaccines. Pediarix is licensed for the first 3 doses of the DTaP series among children 6 weeks through 6 years of age. Kinrix is also produced by GSK and contains DTaP and IPV. Kinrix is licensed only for the fifth dose of DTaP and fourth dose of IPV among children 4 through 6 years of age. Pentacel is produced by sanofi pasteur and contains DTaP, Hib and IPV. It is licensed for the first four doses of the component vaccines among children 6 weeks through 4 years of age. Pentacel is not licensed for children 5 years or older.



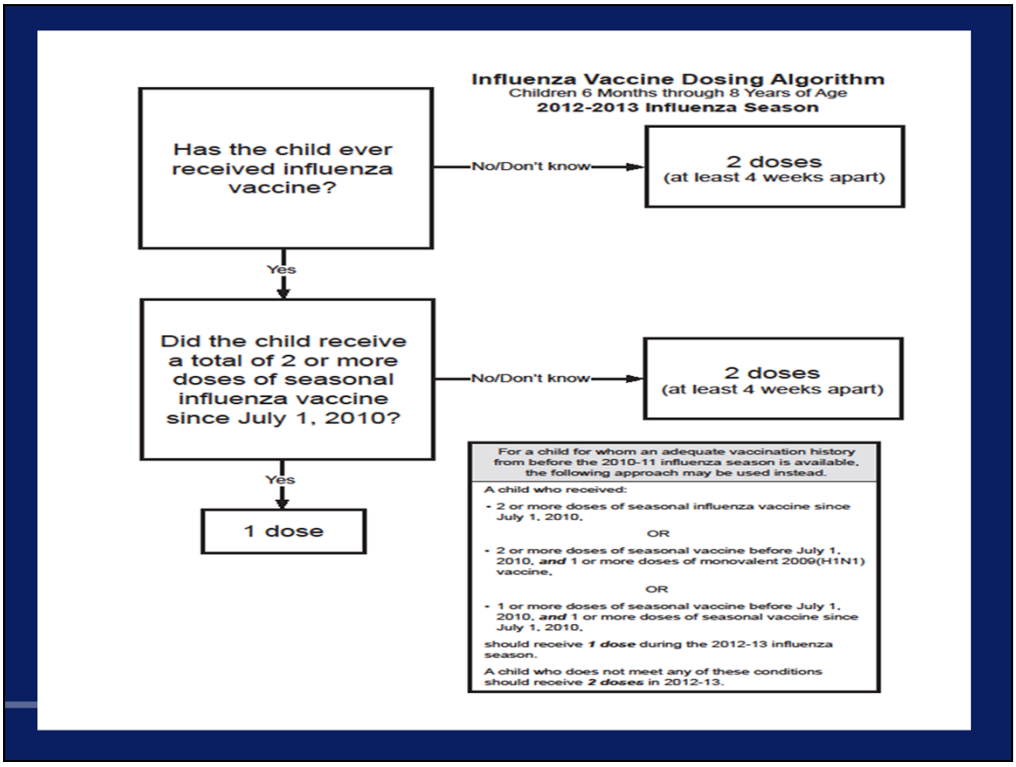
A primary series of IPV consists of three doses. The first dose may be given as early as 6 weeks of age but is usually given at 2 months of age, with a second dose at 4 months of age. The third dose should be given at 6–18 months of age. The preferred interval between the second and third doses of IPV is 2–8 months. However, if accelerated protection is needed, the minimum interval between all doses of IPV is 4 weeks, and the minimum age for the fourth dose is 18 weeks. Children who receive three doses of IPV before the fourth birthday should receive a fourth dose before or at school entry. The fourth dose is not needed if the third dose is given on or after the fourth birthday.

Inactivated poliovirus vaccine is not routinely recommended for US residents who are at least 18 years of age.

Influenza Vaccines

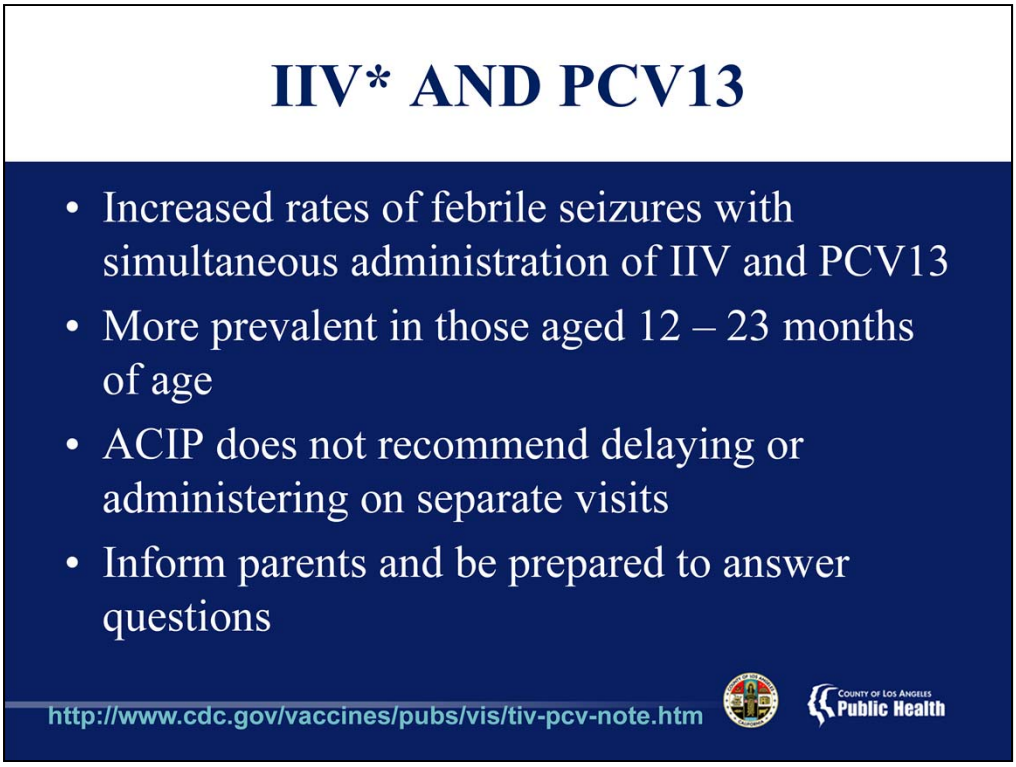


These are all the flu vaccines recommended for the 2012-2013 flu season. Please note that they are listed by age. Please make sure you are giving the correct vaccine for the correct age group.



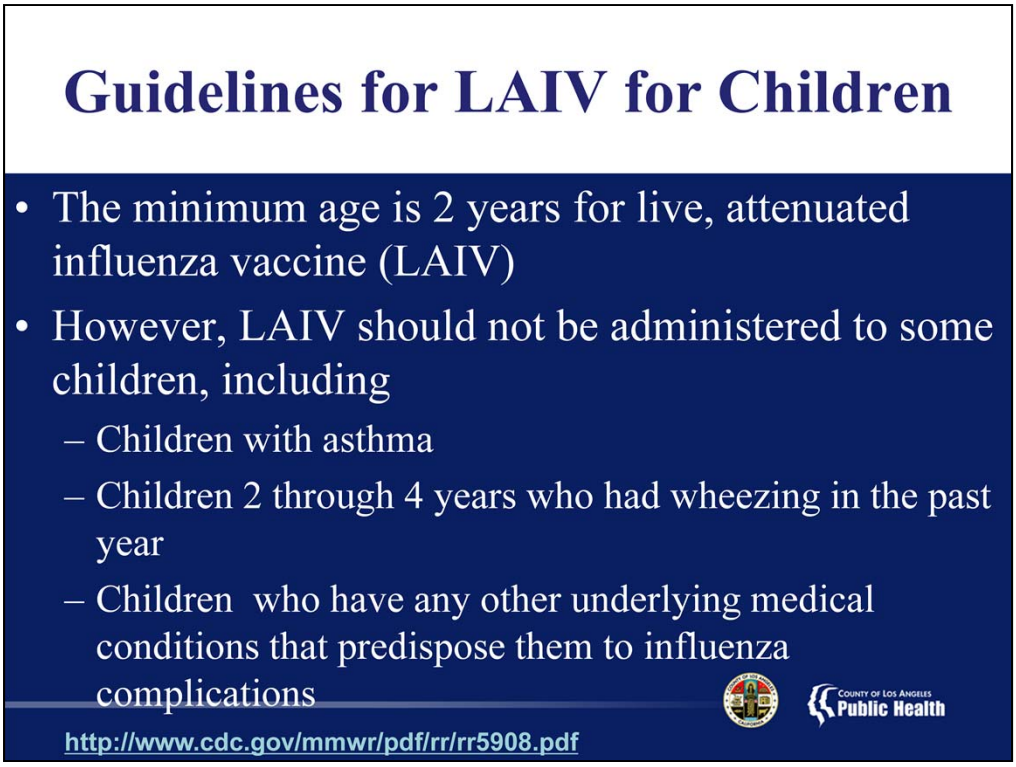
Flu vaccine is recommended annually for all infants and children 6 months and older. This algorithm shows the dosing schedule for children 6 months through 8 years of age. If two doses are indicated, they should be separated by 4 weeks.

Review algorithm with audience.



Increased rates of febrile seizures have been reported among children, especially those 12 through 23 months of age, who received simultaneous vaccination with IIV and PCV13, compared with children who received these vaccines separately. However, because there are risks associated with delaying either of these vaccines, ACIP does not recommend administering them at separate visits or deviating from the recommended vaccine schedule in any way. Febrile seizures are not uncommon, occurring in 2% to 5% of all children; and they are generally benign. Healthcare providers should inform parents and be prepared to answer questions. This information is provided on the influenza VIS.

*** Because a mix of quadrivalent and trivalent influenza vaccines possibly being made available in 2013-14, the abbreviation for inactivated influenza vaccine has been changed from TIV (trivalent inactivated influenza vaccine) to inactivated influenza vaccine (IIV).**



The minimum age is 2 years for live, attenuated influenza vaccine (LAIV).

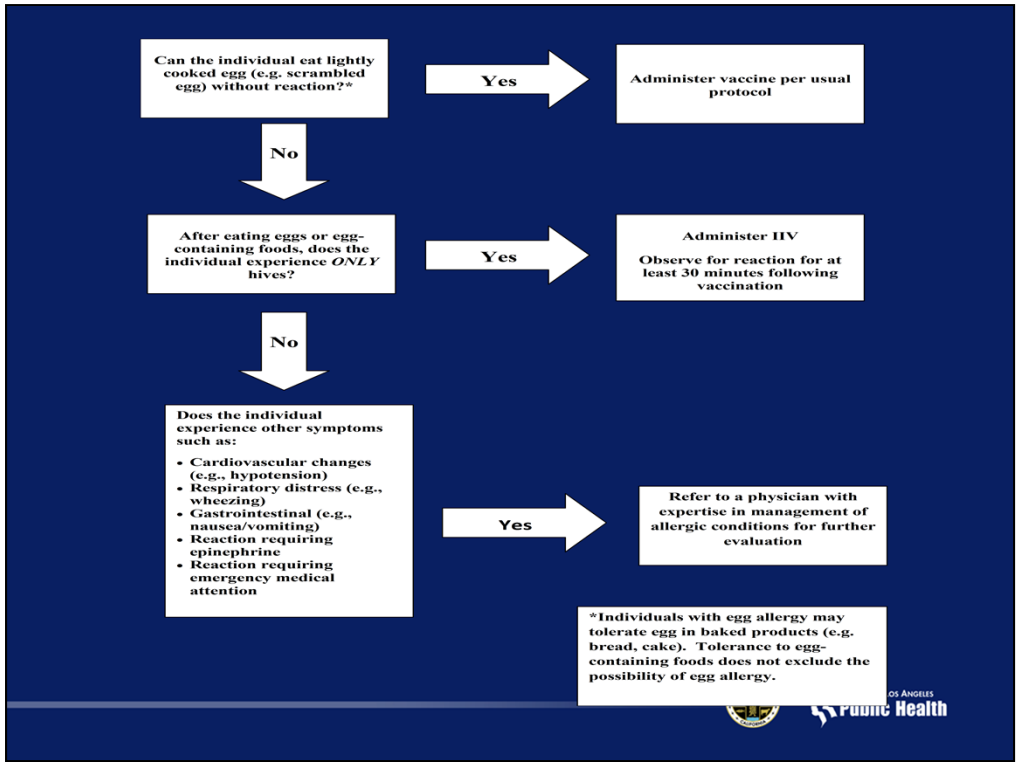
• For most healthy children aged 2 years and older, either LAIV or IIV may be used.

However, LAIV ***should not*** be administered to some children, including

1) children with asthma,
2) children 2 through 4 years who had wheezing in the past 12 months, or
3) children who have any other underlying medical conditions that predispose them to influenza complications.

For all other contraindications to use of LAIV, see *MMWR 2010;59(No. RR-8), available at*

http://www.cdc.gov/mmwr/pdf/rr/rr5908.pdf



Egg allergy of any severity (including anaphylaxis) is not a contraindication to the administration of influenza vaccine, but rather a precaution. Only inactivated vaccine should be used for those who report allergies to egg. **REVIEW ALGORITHM WITH AUDIENCE.**

Measles, Mumps, Rubella Vaccines (MMR)

County of Los Angeles Public Health

MMR Vaccine
(Measles, Mumps, and Rubella)

- M-M-R II®
  (Merck)

  - First dose is recommended at 12 – 15 months of age
  - Second dose is recommended at 4 –6 years of age
  - Administer subcutaneously
  - 2012 schedule recommends a dose for children 6 – 11 months of age who are traveling internationally

County of Los Angeles Public Health

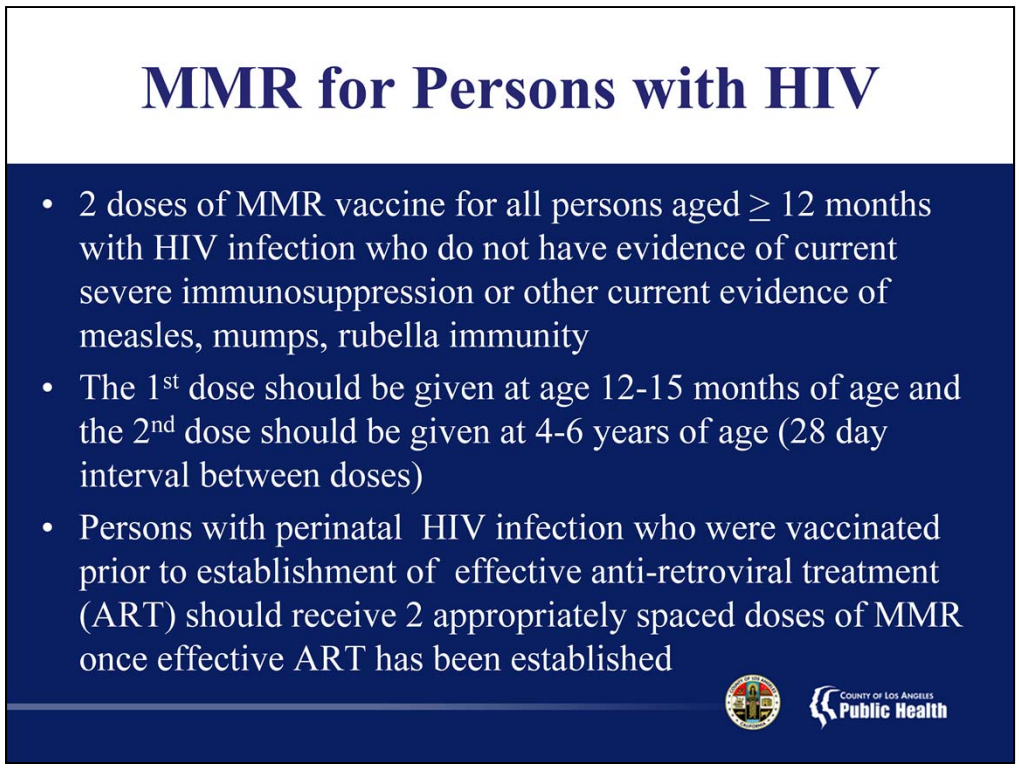
•2 doses of MMR vaccine given SC, are routinely recommended for all children

•12m is the recommended and minimum age to receive MMR dose #1.

•A second dose of MMR vaccine should routinely be given at age 4-6 years, before the child enters kindergarten or 1st grade.

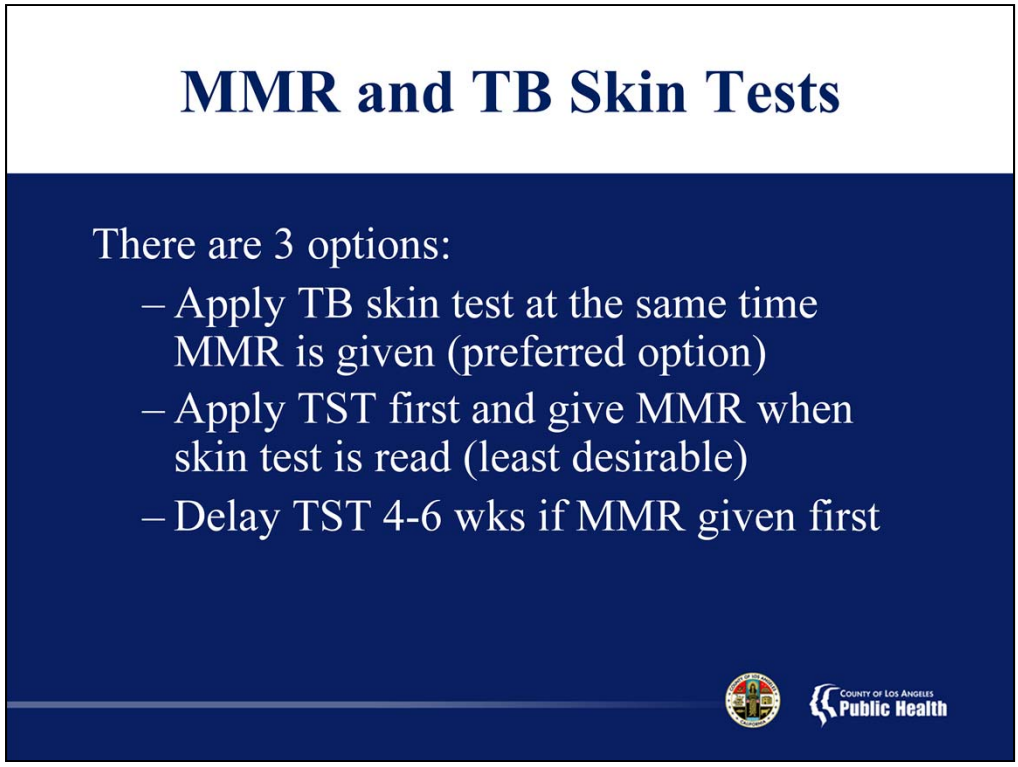
•A second dose may be given anytime 4 weeks or more (I.e. minimum of 28 days) after dose #1

•The preadolescent health visit at age 11-12 years can serve as a catch-up opportunity to verify vaccination status and administer MMR vaccine to those children who have not yet received 2 doses of MMR.

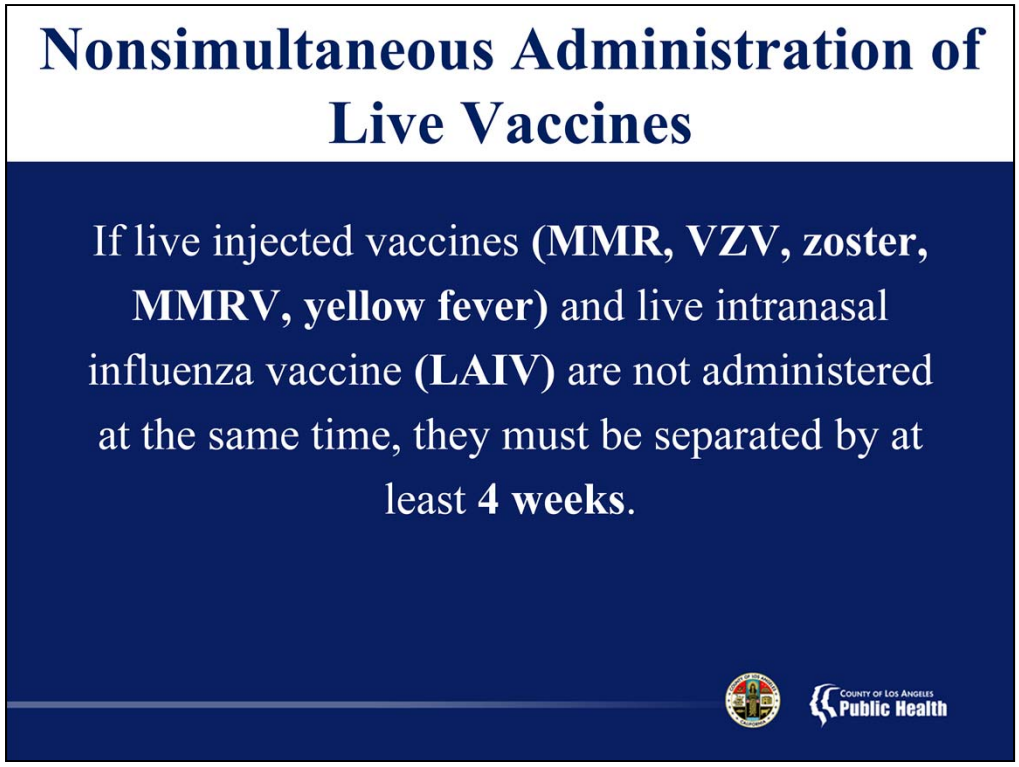

MMR for Persons with HIV
• 2 doses of MMR vaccine for all persons aged ≥ 12 months with HIV infection who do not have evidence of current severe immunosuppression or other current evidence of measles, mumps, rubella immunity
• The 1st dose should be given at age 12-15 months of age and the 2nd dose should be given at 4-6 years of age (28 day interval between doses)
• Persons with perinatal HIV infection who were vaccinated prior to establishment of effective anti-retroviral treatment (ART) should receive 2 appropriately spaced doses of MMR once effective ART has been established
County of Los Angeles Public Health

READ SLIDE

Administer MMR vaccine to infants aged 6 through 11 months who are traveling internationally. Afterwards, these children should be revaccinated according to the ACIP regular schedule with 2 doses of MMR vaccine. The first at ages 12 through 15 months and **at least 4 weeks after the previous dose**, and the second at ages 4 through 6 years.



- TB Skin Testing has no effect on the response to MMR vaccination. However, measles vaccine and possibly mumps, rubella and varicella vaccines may suppress the response to TB skin testing (TST) in a person infected with Mycobacterium tuberculosis (TB).
- Here are some options when performing TB skin testing (TST) and MMR:
    1. Apply the TST and give the MMR at the same time. The mild immunosuppressive effect of the vaccine will not occur for several days after the vaccination. Simultaneously administration of TST and MMR does not interfere with reading the TST result at 48-72 hours and ensures that the person has received the measles, mumps and rubella vaccines.
    2. TST screening can be done and read prior to administering MMR or measles-containing vaccine. This is the least favored option as it delays receipt of MMR or measles-containing vaccine.
    3. To minimize a false-negative interpretation, TST testing should be delayed for 4-6 weeks after MMR vaccination. The delay in will remove any risk of suppression of TST reactivity.
- No data exists for TST suppression associated with other live attenuated virus vaccines (e.g. varicella and yellow fever). However, in the absence of data, ACIP recommends following guidelines for measles-containing vaccine when scheduling TST screening and administering other live-attenuated virus vaccines is prudent. If the opportunity to vaccinate might be missed, vaccination should not be delayed only because of these theoretical considerations.



The 4-week interval is intended to reduce or eliminate interference from the vaccine given first on the vaccine given later. If the live vaccines are not separated by a 4 week (or 28 day) interval, the vaccines given 2nd will have to be repeated.

Varicella Vaccine (VZV)

County of Los Angeles Public Health

Varicella Recommendations

- Children 12 mos -12 years should receive 2 doses of varicella-containing vaccine (e.g. MMRV, VZV) **3 months** apart
  - Doses inadvertently given ≥4 weeks apart do not need to be repeated
- Adolescents ≥13 years old should receive 2 doses of varicella-containing vaccine at least **4 weeks** apart

•Two doses of varicella-containing vaccine are recommended for all persons beginning at 12 months of age through 12 years. The two doses must be separated by 3 weeks.

•For all persons ≥13 years of age without evidence of immunity, ACIP recommends 2 doses of varicella 4-8 weeks apart.

•Varicella vaccine was previously recommended for persons w/out evidence of immunity in this age group who 1) have close contact with persons at high risk for severe disease i.e. family contact of immunocompromised persons and healthcare workers or 2) high risk for exposure or transmission.

Hepatitis A Vaccines (Hep A)

County of Los Angeles Public Health

Hepatitis A Vaccines

- HAVRIX®
  (GlaxoSmithKline)

- VAQTA®
  (Merck)

- Routinely give hepatitis A vaccine to all children age 12 mos through 18 years:

Dose #1	any health care visit
Dose #2	6-18 mos after dose #1

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There are two brands of Hepatitis A vaccine: pediatric and adult formulations. Only the pediatric formulation is available through VFC. In 2005, ACIP recommended that all children should receive hepatitis A vaccine at 12 through 23 months of age. Children who are not vaccinated by 2 years of age can be vaccinated at subsequent visits. The minimum interval between the first and booster doses of hepatitis A vaccine is 6 – 18 months. If the interval between the first and booster doses of hepatitis A vaccine extends beyond 18 months, it is not necessary to repeat the first dose.

Completion of the Hep A series with the same product is preferable. However, if the original product used is not available or not known, vaccination with either product is acceptable.

Meningococcal Vaccines (MCV)

County of Los Angeles Public Health

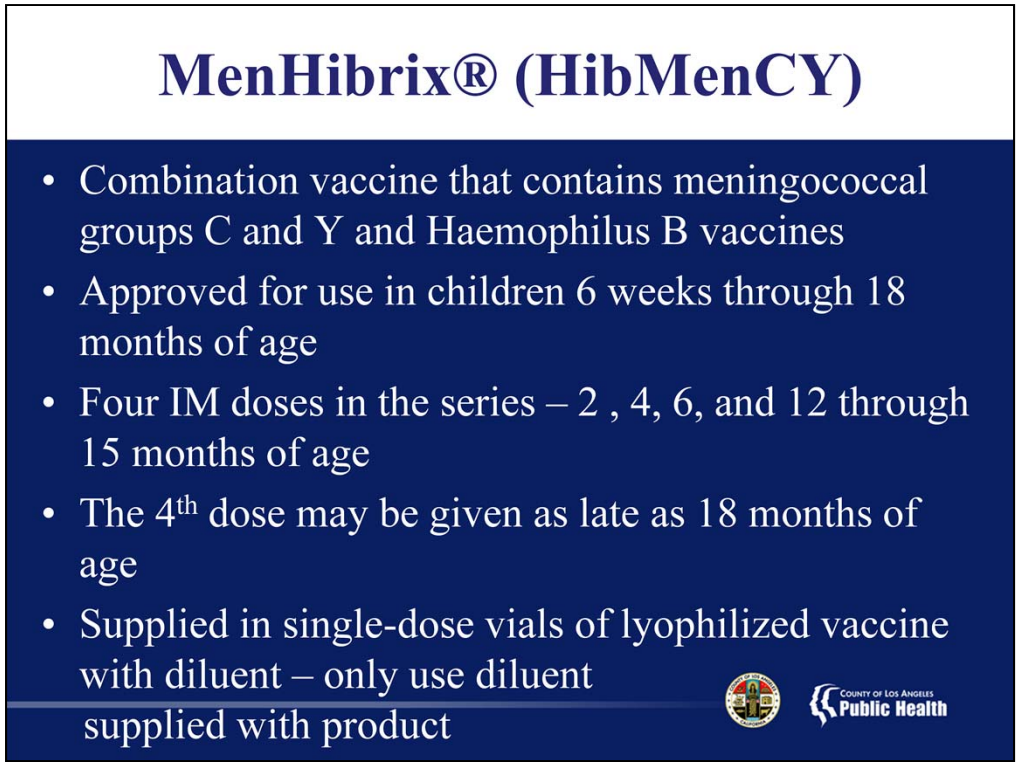
Meningococcal Vaccines

Menactra® (Sanofi Pasteur)
- 9 months - 55 years

Menveo® (Novartis)
- 2 years - 55 years

MenHibrix® (GSK)
- 2 months - 18 months

County of Los Angeles Public Health



On October 24, 2012, the ACIP voted in favor of provisional recommendations that high-risk infants be vaccinated with HibMenCY starting at age 2 months. **READ SLIDE.**

Age	Subgroup	Primary Vaccination HibMenCY = MenHibrix MCV4-D = Menactra	Booster Dose
2 - 18 months of age, with high risk conditions	complement deficiencies	HibMenCY (4 doses at 2,4,6, and 12-15 months of age or catch-up schedule) ***OR*** MCV4-D (9 – 18 months, 2 doses 3 months apart)	**If 1st dose received at age 9 months – 6 years and child remains at increased risk for meningococcal disease,** they should receive an additional dose of MCV4 three years after primary vaccination. Boosters should be repeated every 5 years thereafter.
	functional or anatomic asplenia	HibMenCY (4 doses at 2,4,6, and 12-15 months of age or catch-up schedule)	
	community or organization outbreak	HibMenCY (4 doses at 2,4,6, and 12-15 months of age or catch-up schedule) ***OR*** MCV4-D (9 – 18 months, 2 doses 3 months apart)	
	travel to the Hajj or the "meningitis belt"	MCV4-D (9 – 18 months, 2 doses 3 months apart)(infants receiving vaccine prior to travel – 2 month interval is acceptable)	

This chart shows the recommendations for meningococcal vaccination for age group 2 – 18 months with Menactra (MCV4-D) and the HibMenCY vaccine (Menhibrix). **MenHibrix** is the only meningococcal vaccine licensed for infants starting at 2 months and Menactra at 9 months.

Age	Subgroup	Primary Vaccination MCV4-D = Menactra MCV4 = Menactra or Menveo
19-23 months of age, with high risk conditions	Children with complement deficiencies	Two doses of MCV4-D, three months apart
	Children who are traveling to the Meningitis Belt or Hajj; children who are part of a community or organizational outbreak	Two doses of MCV4-D, three months apart (infants receiving the vaccine prior to travel can receive the doses as early as 2 months apart)
2 -18 years of age, with high risk conditions	Children with complement deficiencies; functional or anatomic asplenia	Two doses of MCV4-D, two months apart
	Children with HIV, ***if*** another indication for vaccination exists	Two doses of MCV4, two months apart
	All others in this age group recommended for vaccination (travelers to the Meningitis Belt, etc)	Single dose of MCV4

This chart shows the recommendations for meningococcal vaccination for age groups 19-23 months with Menactra (MCV4-D) and 2-18 years of age with Menactra or Menveo.

CAUTION!!!

Infants with asplenia *should not* be vaccinated before 2 years of age because of potential interference with pneumococcal vaccine.

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10 Minute Stretch Break

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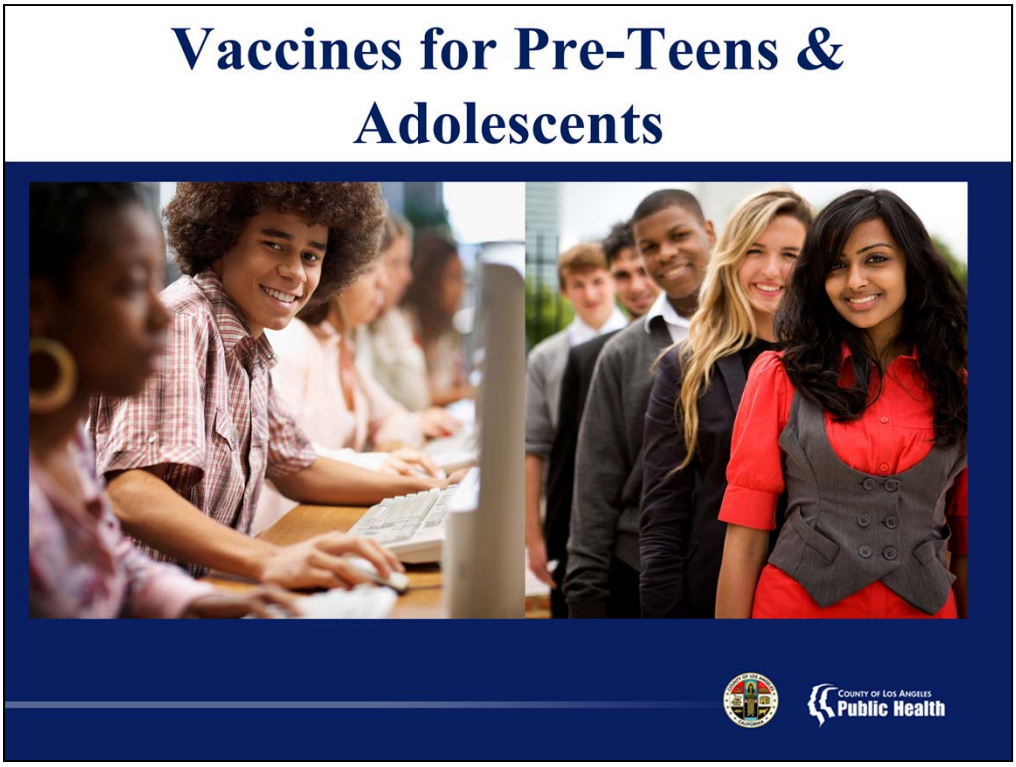
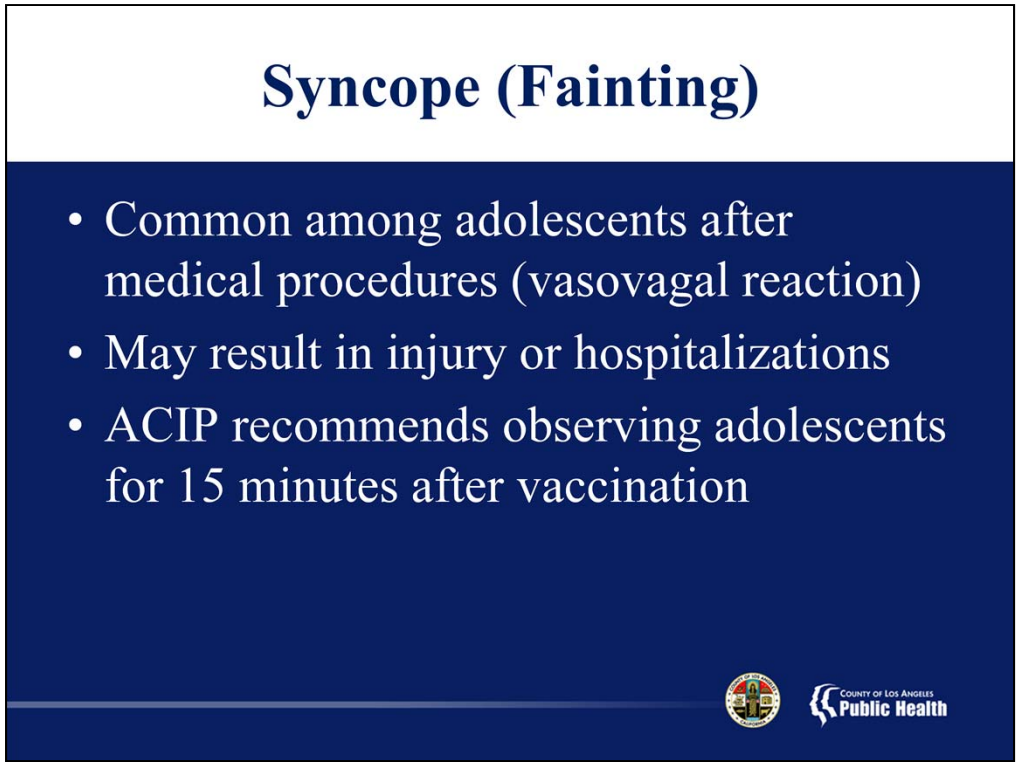


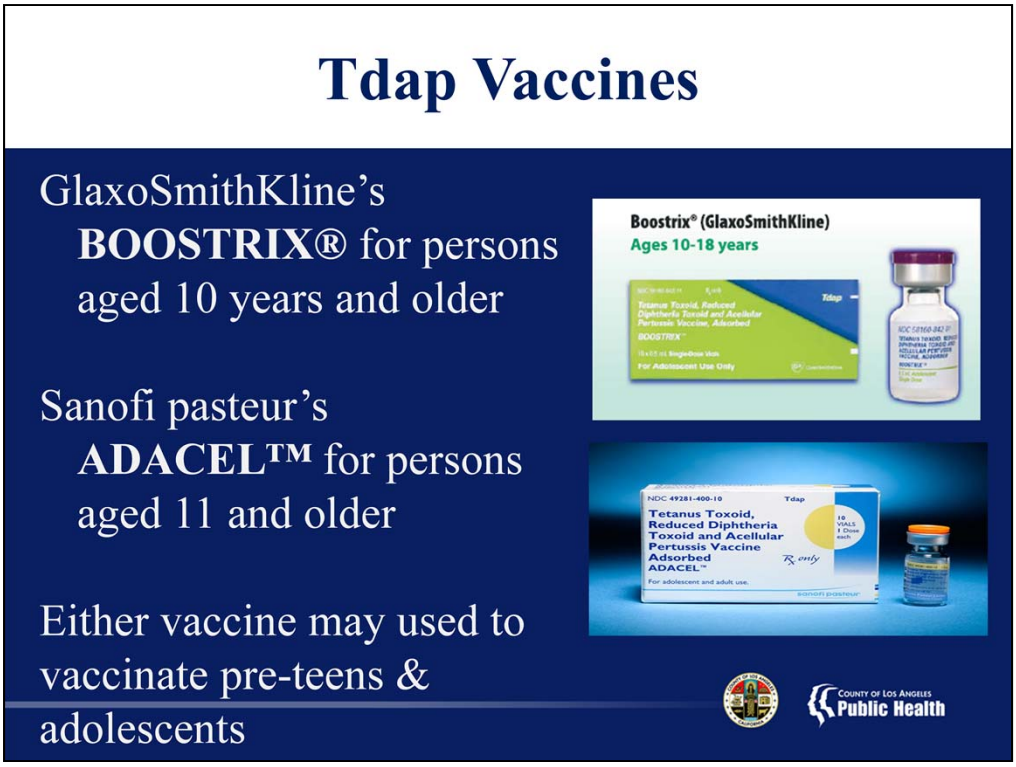
Now we will discuss the recommended vaccines for pre-teens and adolescents.



Syncope (vasovagal reaction), or fainting, can be triggered by various stimuli, including medical procedures. Syncope has been documented to occur after vaccination, most commonly among adolescents, and can result in hospitalization for a medical evaluation or because of injury.

All providers administering vaccinations should be aware of the potential for syncope after vaccination and should take appropriate measures to prevent potential injuries. If syncope develops, patients should be observed until symptoms resolve. In accordance with ACIP recommendations, providers should strongly consider observing patients for 15 minutes after they are vaccinated.

Tdap



Two manufacturers licensed Tdap vaccines in 2005 that contain acellular pertussis antigens. Both vaccines contain a reduced quantity of pertussis antigen compared with pediatric pertussis vaccines. The quantity of tetanus and diphtheria toxoids is similar to available adult Td formulations. Both vaccines are approved by FDA for use in adolescents as a single booster dose. One is not recommended over the other.

•GlaxoSmithKline's Boostrix is indicated for persons aged 10 years and older.

•Sanofi Pasteur's ADACEL is indicated for persons aged 11 years and older.

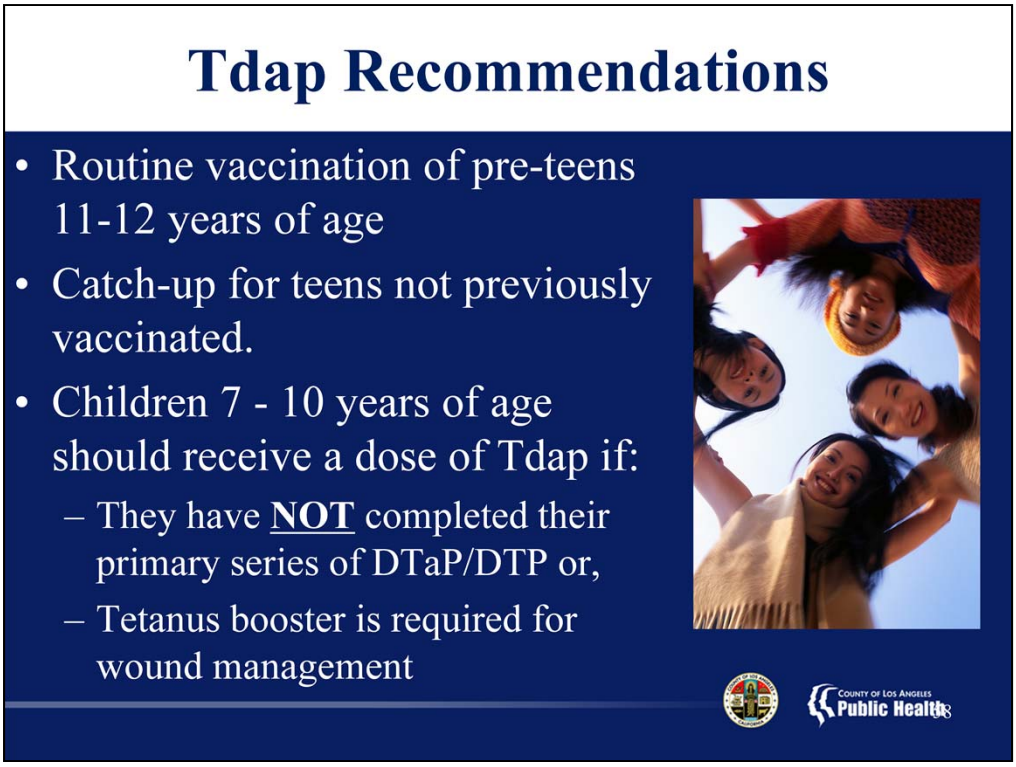
•Either vaccine can be used for the 7-10 year olds who received fewer than 4 doses of DTP/DTaP or who received 4 doses of DTP/DTaP and the last dose of was given prior to 4 years of age.

•Tdap vaccine can be administered regardless of the interval since the last tetanus and diphtheria toxoid–containing vaccine.

Both Tdap vaccines are approved by the Food and Drug Administration as **a single booster dose** in persons who have previously received a full series of 4 or 5 doses of pediatric DTaP or DTP. Tdap vaccines are ***NOT*** approved for use as a primary series.

ACIP now recommends Tdap vaccinations for all persons 7 years and older not

previously vaccinated, including adults 65 years and older. We’ll review the recommendation in the next few slides.



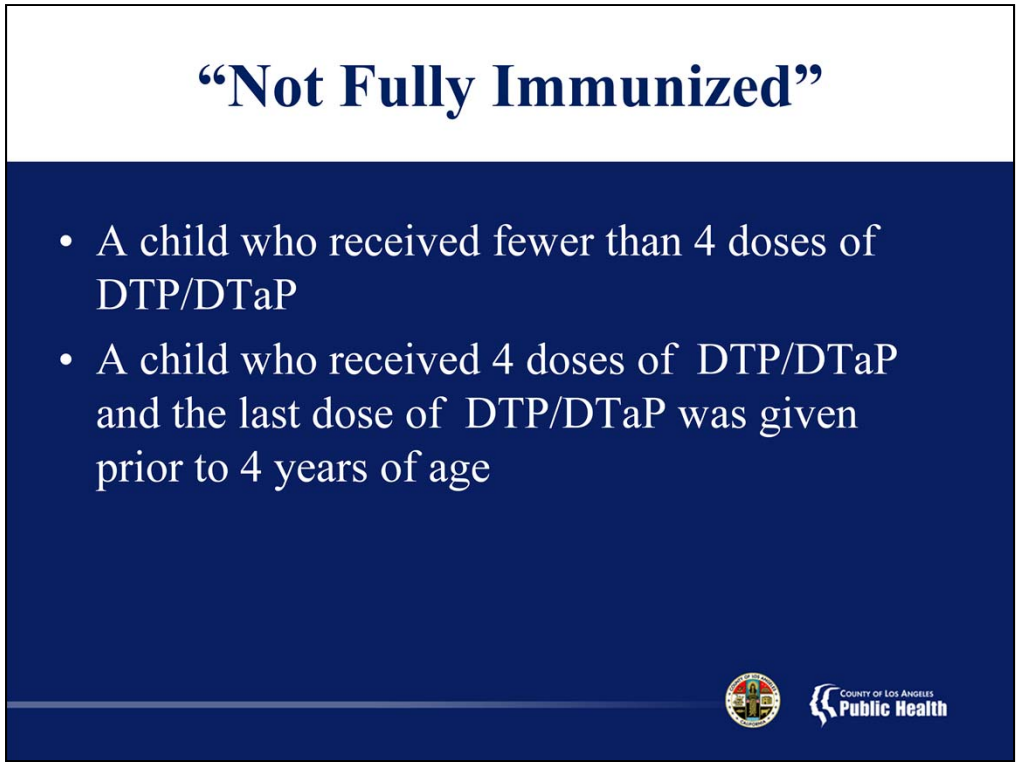
ACIP recommends that for routine vaccination, adolescents 11 through 12 years of age should receive a **single** dose of Tdap instead of Td for booster immunization against tetanus, diphtheria and pertussis, if they have completed the recommended childhood DTP/DTaP vaccination series and have not received a Td booster. The preferred age for Tdap vaccination is 11-12 years.

Tdap should be used for children 7 – 10 years of age if:

> They have **NOT** completed their primary series of **DTaP** before the age of 7. School-age children aged 7-9 years who have completed the primary series of DTaP do not need to receive **Tdap** vaccine until their preteen visit **(age 11-12 years).**
>
> Tetanus booster is required for wound management

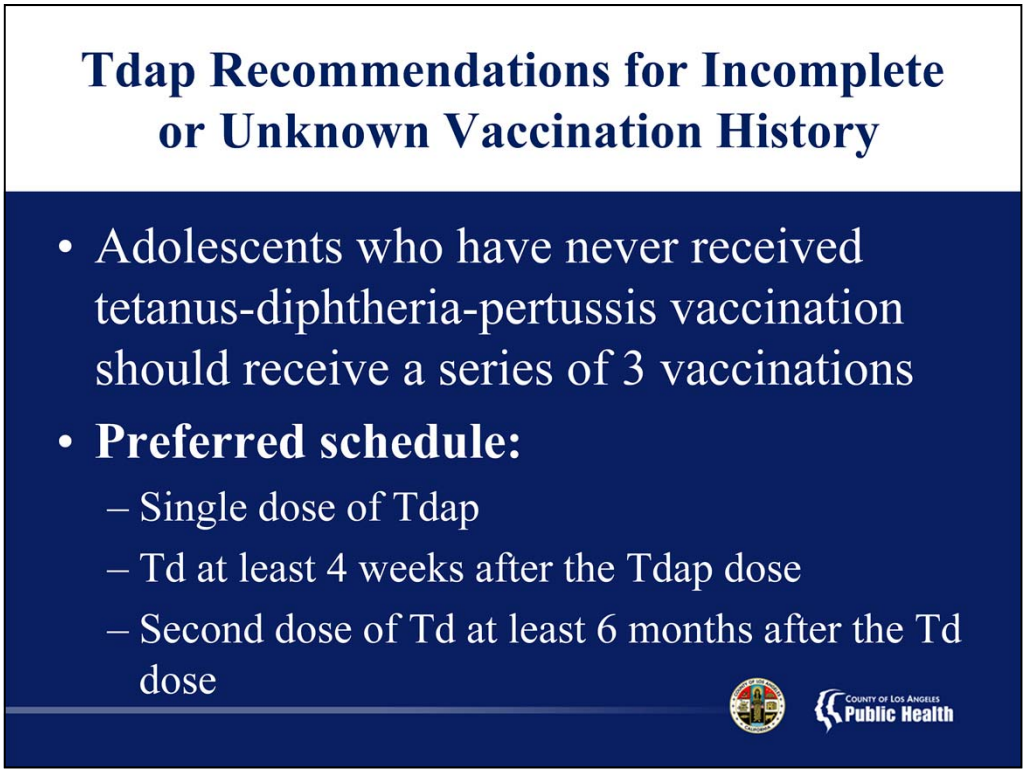
Existing data has shown that Tdap vaccine is safe for use in children in this age group. Currently, Tdap vaccine is licensed in Canada for use in children 4 years and older. Either Adacel or Boostrix may be used for this age group.

As a reminder, children 6 weeks through 6 years should complete the DTaP vaccination series for protection against pertussis.



READ SLIDE

There was some confusion about the term "not fully immunized" with DTaP for persons 7-10 years of age. This slide gives an explanation of what is meant by this. Persons 7 through 10 years of age who are not fully immunized against pertussis (including those never vaccinated or with unknown pertussis vaccination status) should receive a single dose of Tdap.

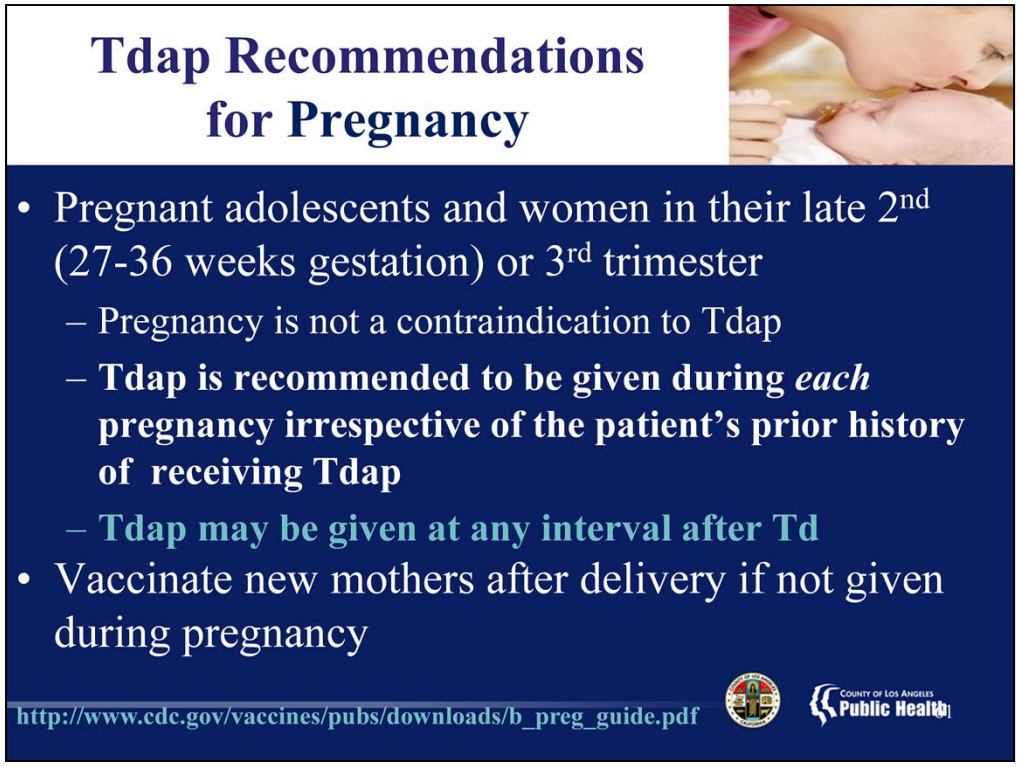


Although it is technically off-label use of the vaccine, ACIP recommends the use of Tdap for adolescents who do not have a history of having completed the DTP or DTaP series as children. For adolescents who completed the recommended childhood vaccination series for tetanus and diphtheria toxoids with pediatric DT or adult Td vaccine rather than pediatric DTP or DTaP, ACIP recommends that they receive Tdap according to the routine recommendations for adolescents if there are no contraindications to receiving pertussis-containing vaccine.

The recommendation for vaccination of adolescents who have not received a complete series of pediatric pertussis vaccination is to administer ONE dose of Tdap. Do **not** administer 2 or 3 doses of Tdap vaccine. ACIP will review data this year to determine if more than one dose of Tdap is warranted.

Adolescents who have never received tetanus-diphtheria-pertussis vaccination should receive a series of 3 vaccinations.

The ACIP preferred schedule is a single dose of Tdap, followed by a dose of Td at least 4 weeks later, and a second Td at least 6 months after the Td dose. Although this is the preferred schedule, Tdap may be substituted for any one of the 3 Td doses in the series.



On October 24, 2012, the ACIP voted to recommend tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccine (Tdap) for pregnant women with every pregnancy irrespective of privious Tdap history. It is preferable to administer Tdap during the late second or third trimester (27-36 weeks gestation) to minimize the coincidental association of Tdap vaccination with adverse outcomes, which occur most often during the first trimester. To maximize the maternal antibody response and passive antibody transfer to the infant, optimal timing for Tdap administration is between 27 and 36 weeks gestation. **Transplacental transfer of maternal pertussis antibodies from mother to infant may provide protection against pertussis in early life, before beginning the primary DTaP series.** Adolescents and women not vaccinated during pregnancy should be vaccinated during the immediate postpartum period.

This information can be found in the "Guidelines for Vaccinating Pregnant Women" on the CDC website listed above.

Human Papillomavirus Vaccines (HPV)

County of Los Angeles Public Health

HPV Vaccines

Vaccine	VLP Types	Rec. Age* To Begin	Indicated For Females?	Indicated For Males?**	Protects Against	Dosing Intervals Doses 1-3
Gardasil (quadrivalent-HPV4)	6,11,16, 18	11-12 years	Yes	Yes	Cervical vaginal, & vulvar cancers, anal and genital warts	0 months 1-2 months 6 months
Cervarix (bivalent – HPV2)	16,18	11-12 years	Yes	No	Cervical cancer	0 months 1-2 months 6 months

*May begin series as early as 9 years of age
** No longer permissive, but recommended for males

HPV vaccination series consist of 3 doses. The first dose should be given at the elected date. Dose # 2 should be given 2 months after dose #1, but can be given as soon as one month (4 weeks) after the 1st dose. Dose #3 should be given 6 months after the 1st dose, but can be given a minimum of 12 weeks after the 2nd dose.

On October 25, 2011, the Advisory Committee on Immunization Practices (ACIP) recommended routine use of quadrivalent human papillomavirus vaccine (HPV4; Gardasil, Merck & Co. Inc.) for males aged 11 or 12 years. ACIP also recommended vaccination with HPV4 for males aged 13 through 21 years who have not been vaccinated previously or who have not completed the 3-dose series; males aged 22 through 26 years may be vaccinated. **These recommendations replace the October 2009 ACIP guidance that HPV4 *may* be given to males aged 9 through 26 years.**

Meningococcal Vaccines (MCV)

County of Los Angeles Public Health

Meningococcal Conjugate Vaccines

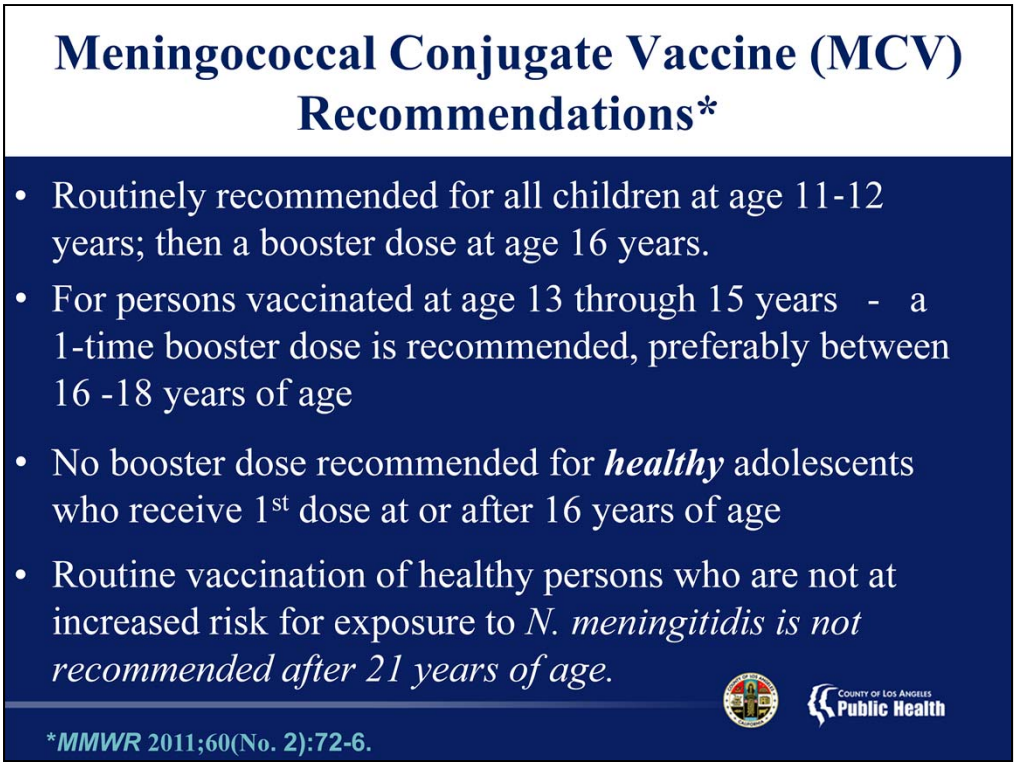
- Menactra™ (Sanofi Pasteur)
  - Quadrivalent vaccine (serogroups A, C, Y, and W-135)
  - MCV4 is approved for persons *9 months to 55 years of age*

- Menveo (Novartis)
  - MenACWY-CRM is approved for persons age 2-55 years of age

County of Los Angeles Public Health

There are two meningococcal conjugate vaccines. Menactra (MCV4) is approved for persons aged 9 months-55 years of age and Menveo (MenACWY-CRM) is approved for persons 2 years -55 years of age.

ACIP recommends quadrivalent meningococcal conjugate vaccine for all persons aged 11--18 years and for persons aged 2-55 years who are at increased risk for meningococcal disease. Persons at increased risk for meningococcal disease include 1) college freshmen living in dormitories, 2) microbiologists who are exposed routinely to isolates of *Neisseria meningitidis*, 3) military recruits, 4) persons who travel to or reside in countries where meningococcal disease is hyperendemic or epidemic, 5) persons who have persistent complement component deficiencies, and 6) persons with anatomic or functional asplenia. Either MenACWY-CRM (Menveo) or MCV4 (Menactra) may be used in persons aged 11--55 years, and are preferred to quadrivalent meningococcal polysaccharide vaccine (MPSV4). Persons aged 2--10 years who are recommended to receive a meningococcal vaccine should receive MCV4, and persons aged >55 years should receive MPSV4. MCV4 is now recommended for revaccination for those who need it. VFC providers may only use MCV4 for persons 18 years and younger.



Meningococcal conjugate vaccine (MCV) is recommended for all adolescents at 11-12 years of age at their pre-teen visit. Since immunity wanes over time, ACIP now recommends a booster dose at age 16 years.

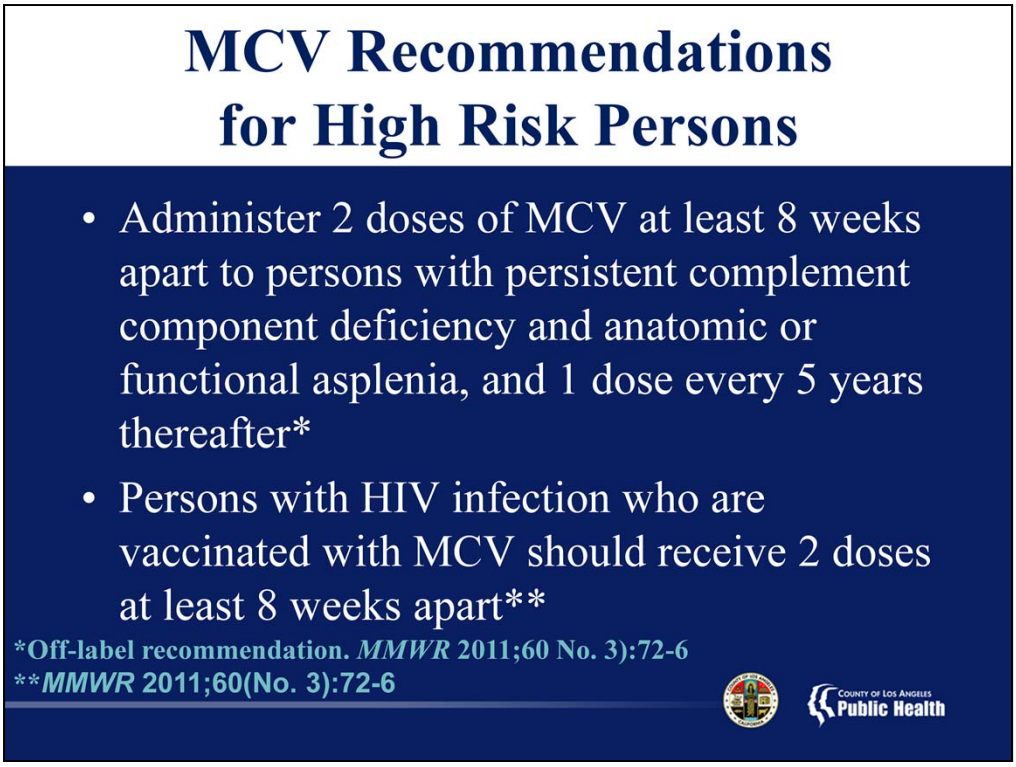
Adolescents who did not receive their first dose of MCV at their pre-teen visit should receive it as soon as possible.

Teens vaccinated at 13 through 15 years of age should receive 1 booster dose between 16 -18 years of age.

If the first dose of MCV is given to a healthy adolescent at age 16 years or older, a booster dose is not recommended.

Healthy persons 21 years of age or older who are not at risk for exposure to N. meningitidis should not be vaccinated.

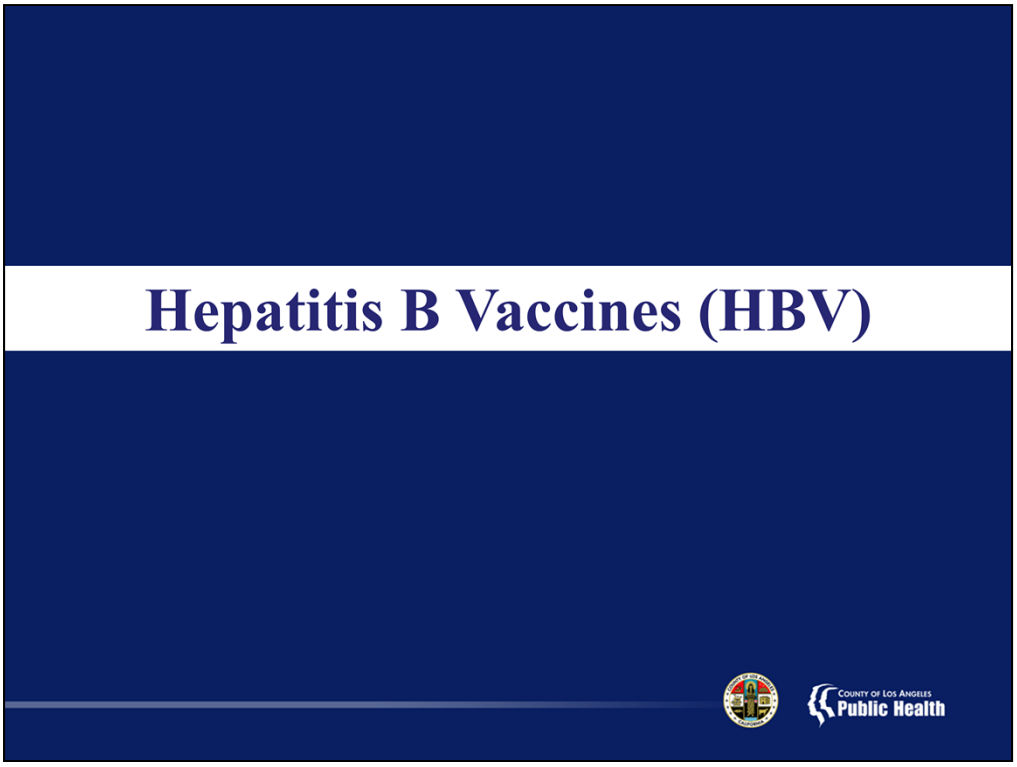
Either vaccine can be used to vaccinate adolescents.



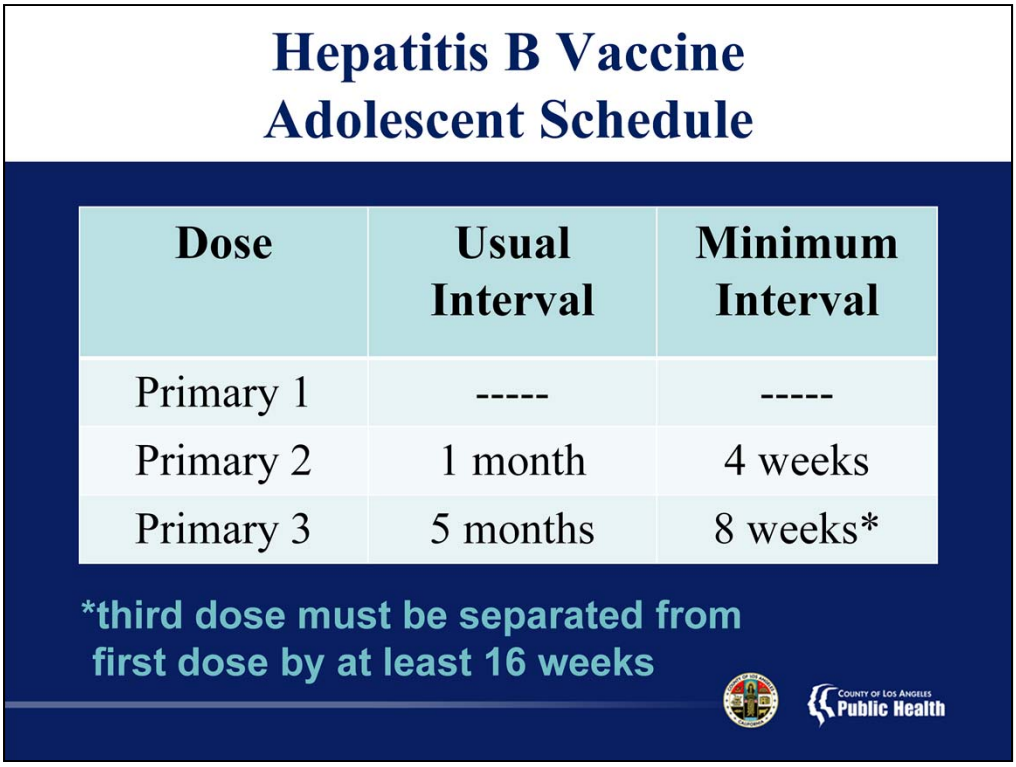
Single dose primary series may not be sufficient to confer protection for persons with these high-risk conditions.

Persons with complement component deficiency, asplenia and HIV who previously received 1 dose should receive a second dose at the earliest opportunity **(*off-label recommendation. *MMWR* 2011;60(No. 3):72-6.)**

HIV infection alone is not an indication for MCV vaccination. However, some persons with HIV infection should receive MCV (adolescents, some international travelers, microbiologists, etc).



We will review each vaccine as it is listed on the Recommended Immunization Schedule, starting with Hepatitis B.



•For adolescents previously not vaccinated against Hepatitis B, three doses are required to complete the series. Dose 1 and 2 should be separated by 4 weeks. The minimal interval between doses 2 and 3 is eight weeks, but dose 3 must be separated from dose 1 by at least 16 weeks.

•The minimal intervals can be used for catch-up vaccination for persons who have not completed the series. It is not necessary to restart the series.

Alternative Adolescent Vaccination Schedule

- Two 1.0mL (10 mcg) doses of Recombivax HB separated by 4-6 months
- Approved only for adolescents aged 11 through 15 years
- **Only** applies to Merck hepatitis B vaccine Recombivax

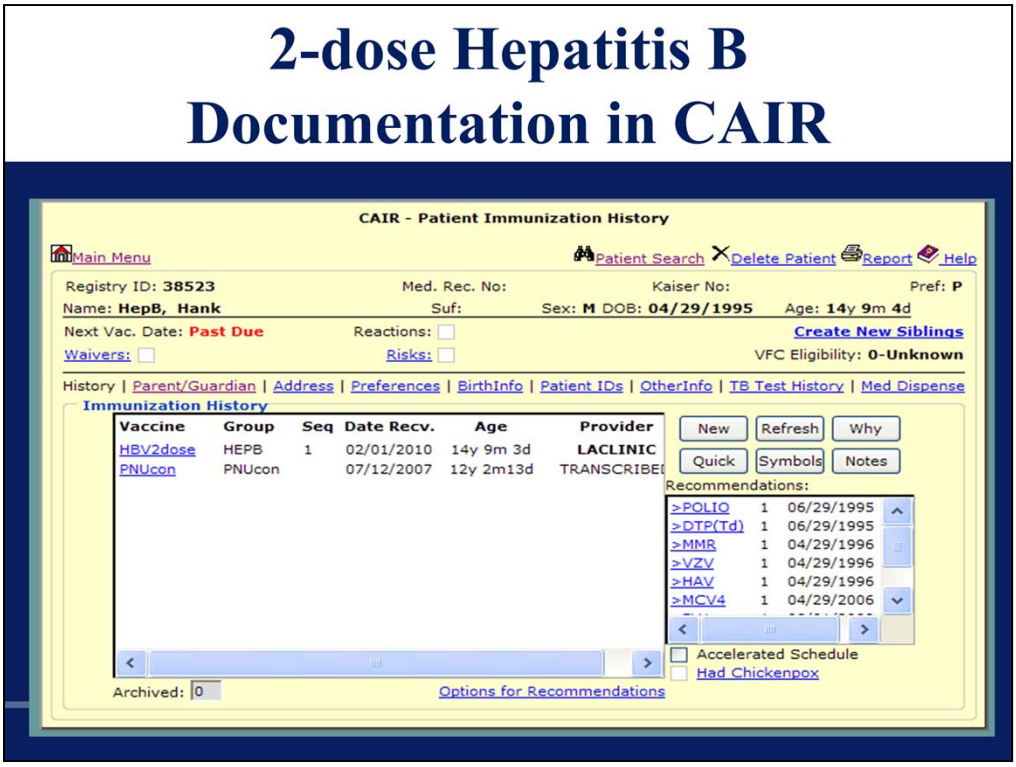
County of Los Angeles Public Health

An alternative 2-dose hepatitis B schedule is available for adolescents aged 11-15 years by combining two doses of pediatric formulation **Recombivax HB** (yellow top) in one syringe (i.e., combining two 0.5 mL Recombivax vials into one syringe for a total of 1.0 mL). The second dose is given 4-6 months later. Be sure to document that the patient received the 2-dose schedule using the pediatric formulation. The 2-dose schedule should be completed by age 16 years.

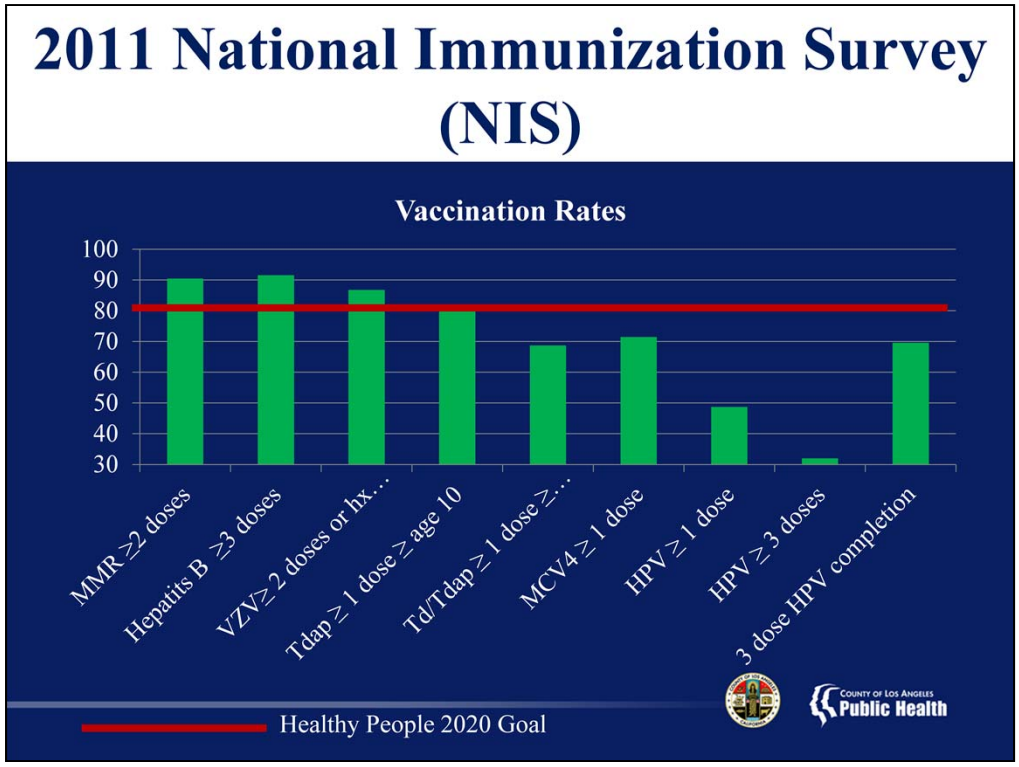
This alternative schedule is approved ***ONLY*** for adolescents 11–15 years of age, and ***ONLY*** for Merck's Recombivax hepatitis B vaccine. Engerix-B ***can not*** be used for the 2-dose schedule.

The 2-dose schedule should be completed before the 16th birthday. Otherwise, 3 doses are needed to complete the hep B series.

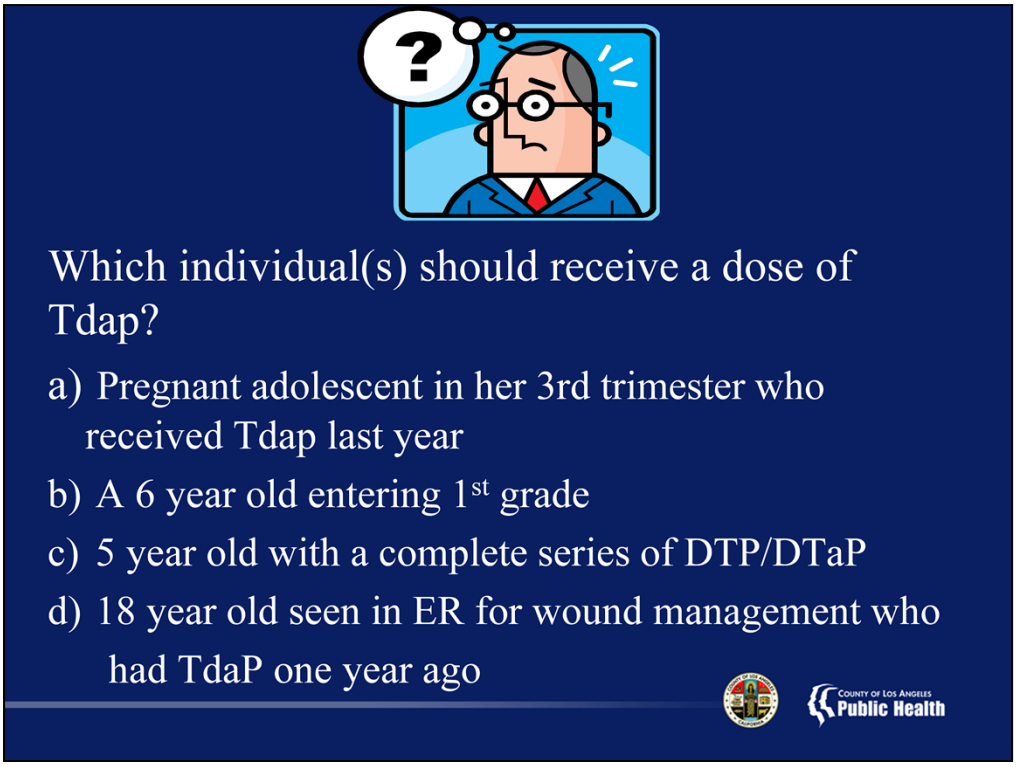
2-dose Hepatitis B Documentation in CAIR



For providers using the immunization registry (CAIR) this screen shot shows you how to document the 2-dose Hepatitis B vaccine series. Please select the “HBV2dose” to appropriately document the vaccine administered. This will ensure the adolescent receives the adolescent dose in 4-6 months.

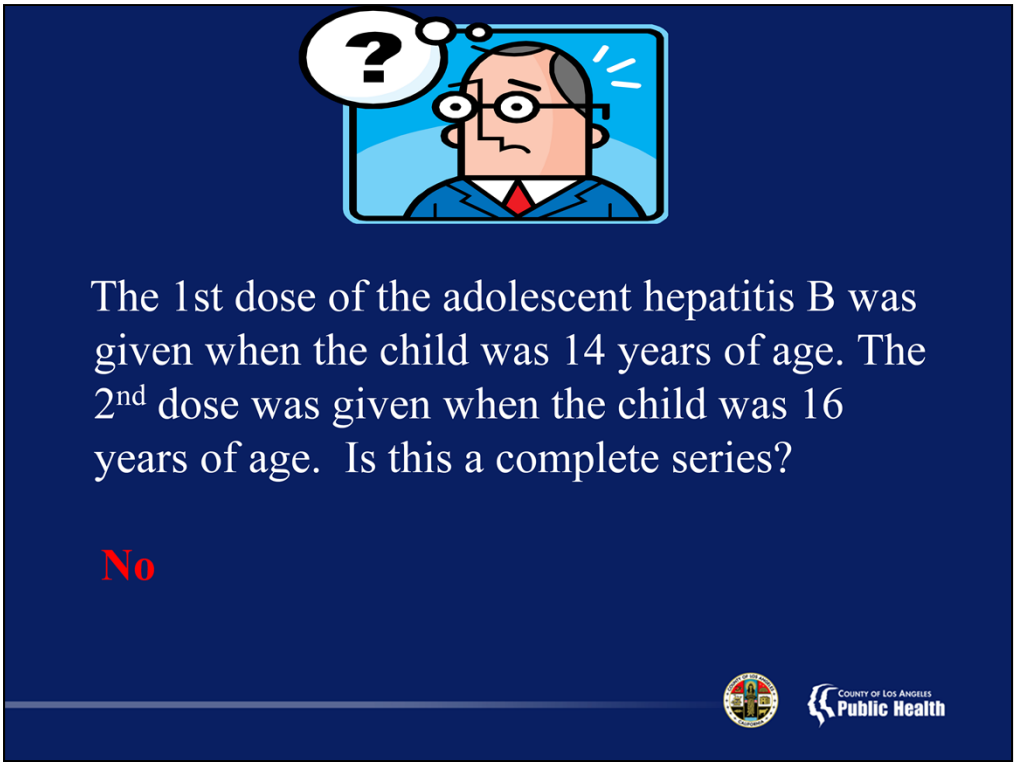


According to the 2011 National Immunization Survey (23,564 adolescents participated), adolescent vaccination coverage increased from 2010 to 2011 with Tdap coverage reaching the *Healthy People 2020* target of 80%. Coverage with MMR and Hep B vaccines remained above 90% and 2-dose varicella vaccine coverage had a 10% point increase since 2010.



The answer is a.

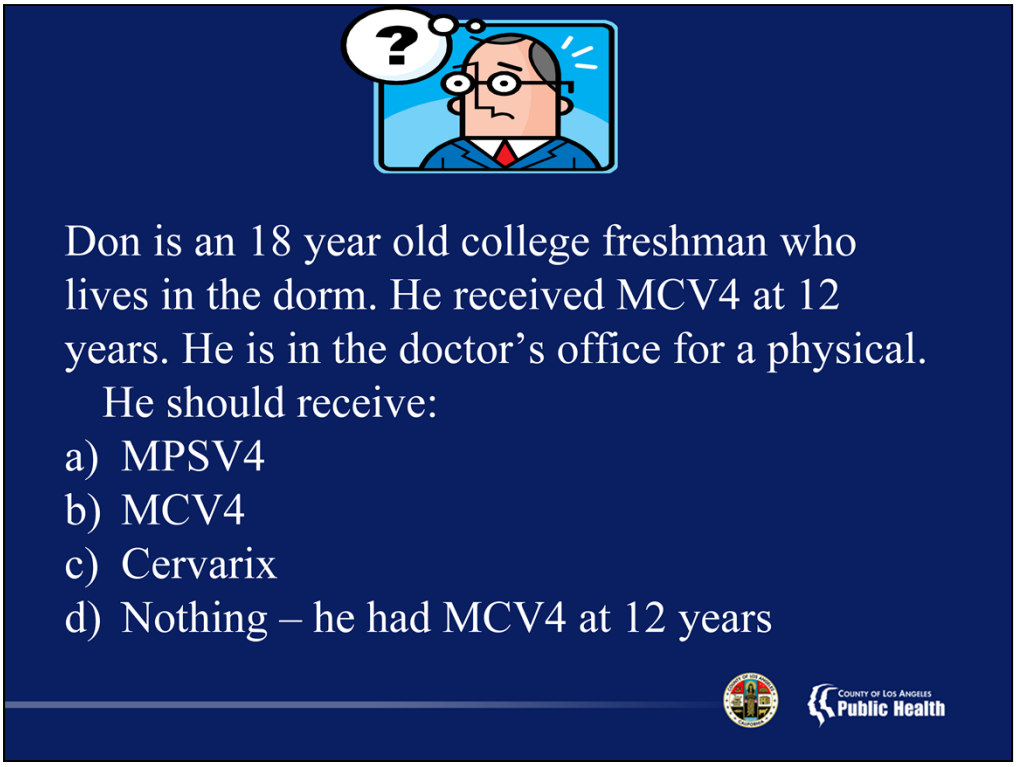
a. Tdap should be administered during the second or third trimester (at least 20 weeks gestation) to minimize the coincidental association of Tdap vaccination with adverse outcomes. ACIP recommends that Tdap is administered for each pregnancy regardless of whether Tdap was previously received.



Read question and wait for a response from the audience.

Answer: No, the two-dose schedule is for adolescents aged 11 through 15 years (with a 4-6 month interval between doses). A 3rd dose is indicated in this situation because the second dose was given after the child turned 16 years.

Remember, only the Merck vaccine Recombivax is approved for this schedule. It should be accurately documented to reflect that it was the 2-dose series. The first dose should be given between the ages of 11 and 15. The second dose should be given 4-6 months later. If the child starts the series at 14 years of age and doesn't return until they are 16, how many doses would they need? If they start the series at 15 years of age and turn 16 before the second dose is given, how many doses do they need? In both instances they would need to have 3 doses.



The answer **B** – Since he received MCV4 at 12 years, Don is due for a booster dose. Remember, adolescents who received their first dose at 11-12 years of age should receive a booster dose at age 16 years. Since he is past that age it is appropriate to provide him with a booster dose.

In what instance would it *not* be appropriate to give Don a booster dose?

If he received his first dose at age 16 years. Remember if an adolescent at age 16 years and older they should not be given a booster dose.

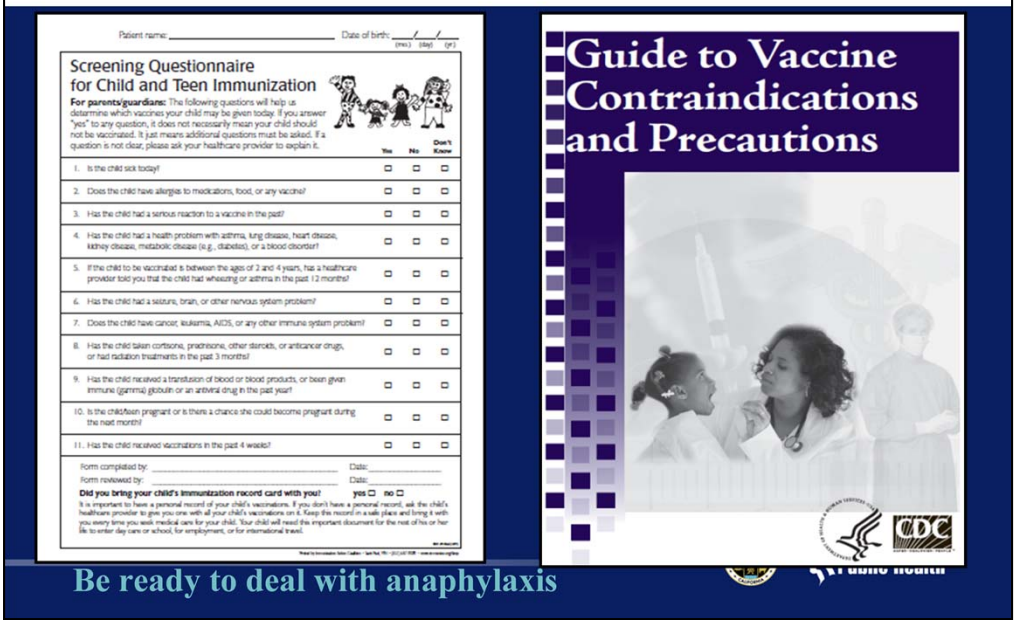
Antipyretics and Vaccine Administration

- There is no evidence to support use of antipyretics before or at the time of vaccination, but they can be used for the treatment of fever that might occur following vaccination.
- Studies of children with previous febrile seizures have not demonstrated antipyretics to be effective in the prevention of febrile seizures*

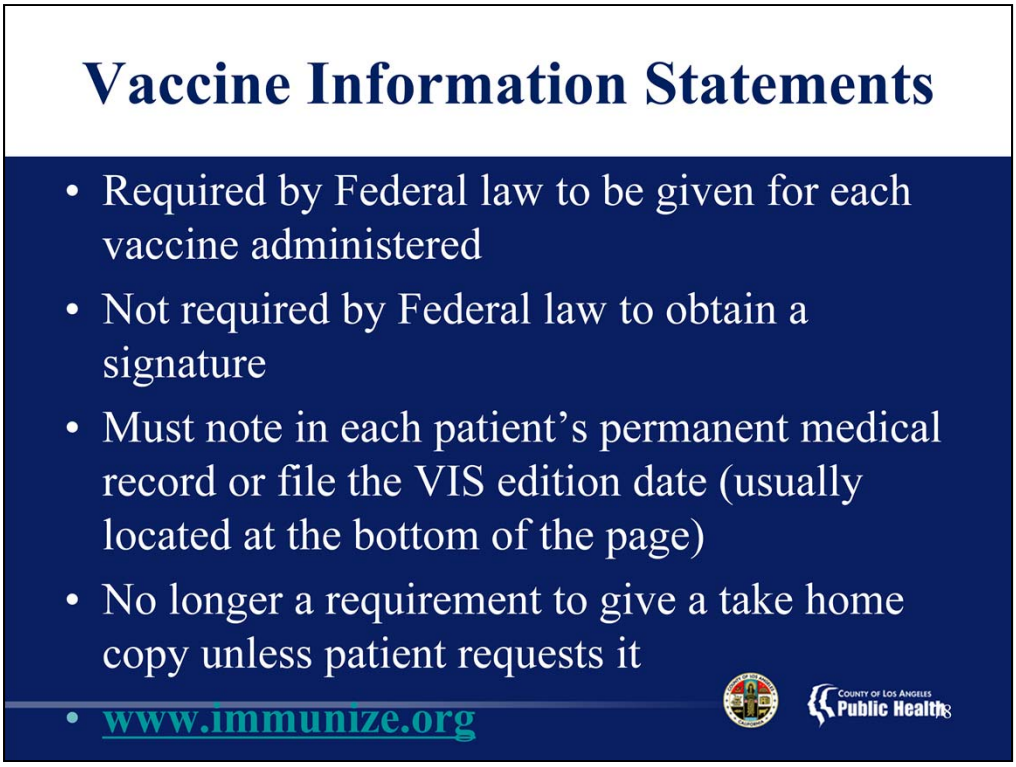
(AAP Steering Committee on Quality Improvement and Management, Subcommittee on Febrile Seizures, Pediatrics, 2008)

County of Los Angeles Public Health

Preventing Adverse Reactions



The screening questionnaire should be used before every vaccination encounter. Please refer to The Guide to Contraindications and Precautions in order to make a determination to administer vaccines to a person with a health issue. A copy of the guide can be found on the CDC website www. cdc.gov/vaccines or the Immunization Program website http://publichealth.lacounty.gov/ip/HCPs.htm.



Every healthcare provider who administers vaccines covered by the National Childhood vaccine Injury Act is required by law to provide a copy of the most current VIS with ***EACH DOSE*** of vaccine at every visit. Please make sure to periodically check your hard copies of the VISs to make sure you have the most current edition of each VIS. Although it is no longer a requirement to give the patient a paper copy to take home, it is required for them to read information while in the office before vaccines are administered. A good resource to check for updates is the www.immunize.org website.

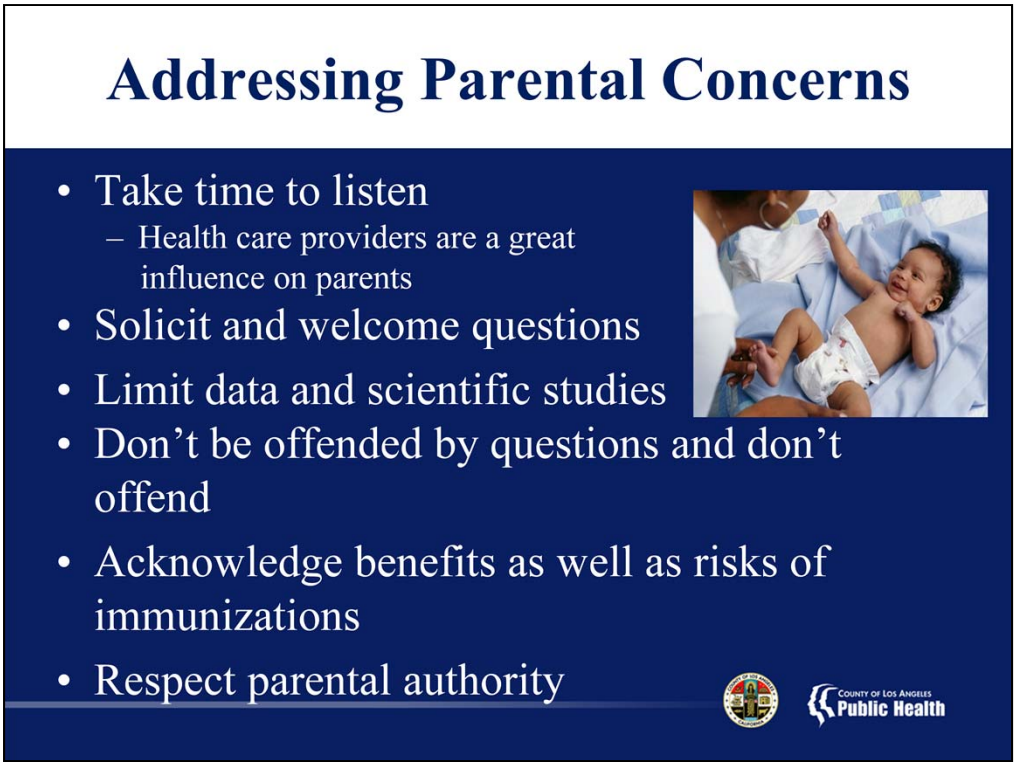
Addressing Parental Concerns

County of Los Angeles Public Health

Key Messages for Parents

- Positive messages about vaccinations
- Data & scientific studies may not resonate
- Emotional, personal messages more effective

County of Los Angeles Public Health



Take time to listen: If parents need to talk about vaccines, please allow time to listen and give them your undivided attention. Be sure to make eye contact with them and given them time to completely state their concerns and be sure you understand their viewpoint.

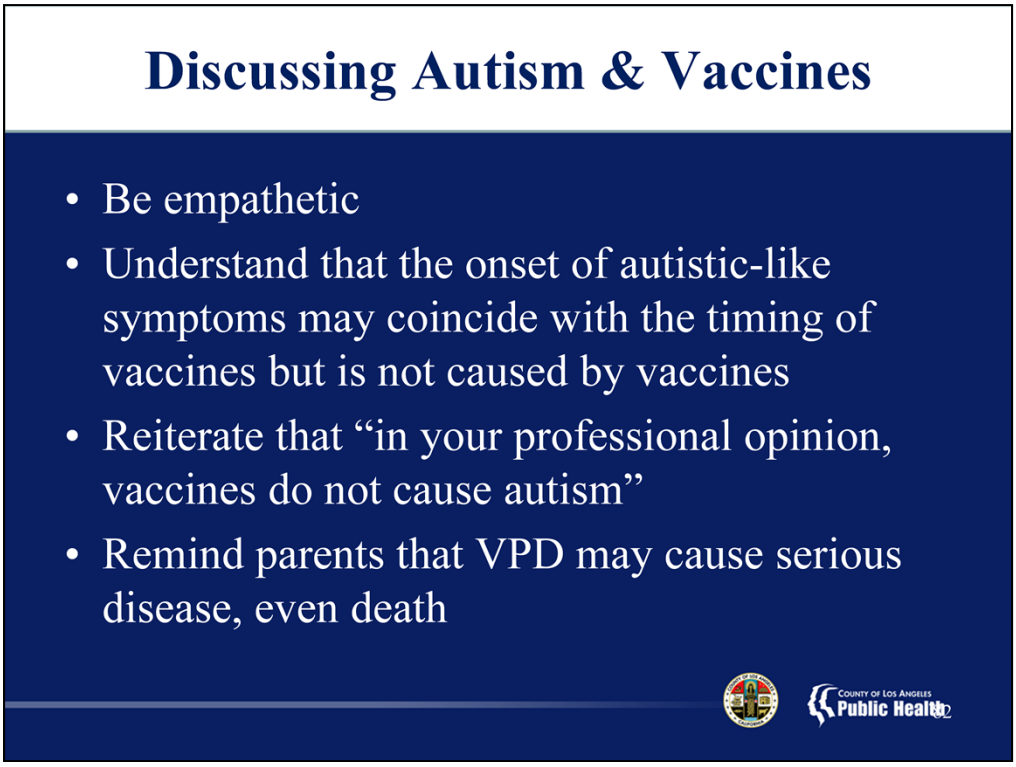
Solicit and welcome questions: If you sense a reluctance on the parents' part to openly discuss their vaccine concerns, let them know that you want to hear their questions and concerns. Acknowledge their feelings and emotions, including their fear and desire to protect their children. Remind them that you know that their child's health is a top priority to them as well as it is to you.

Don't be offended and don't offend: Don't be offended by parental questions. Do not consider it a lack of respect for your knowledge or practice. If you imply that you are insulted, it may place the parent(s) in an awkward position, cause them to shut down and the trust to be eroded.

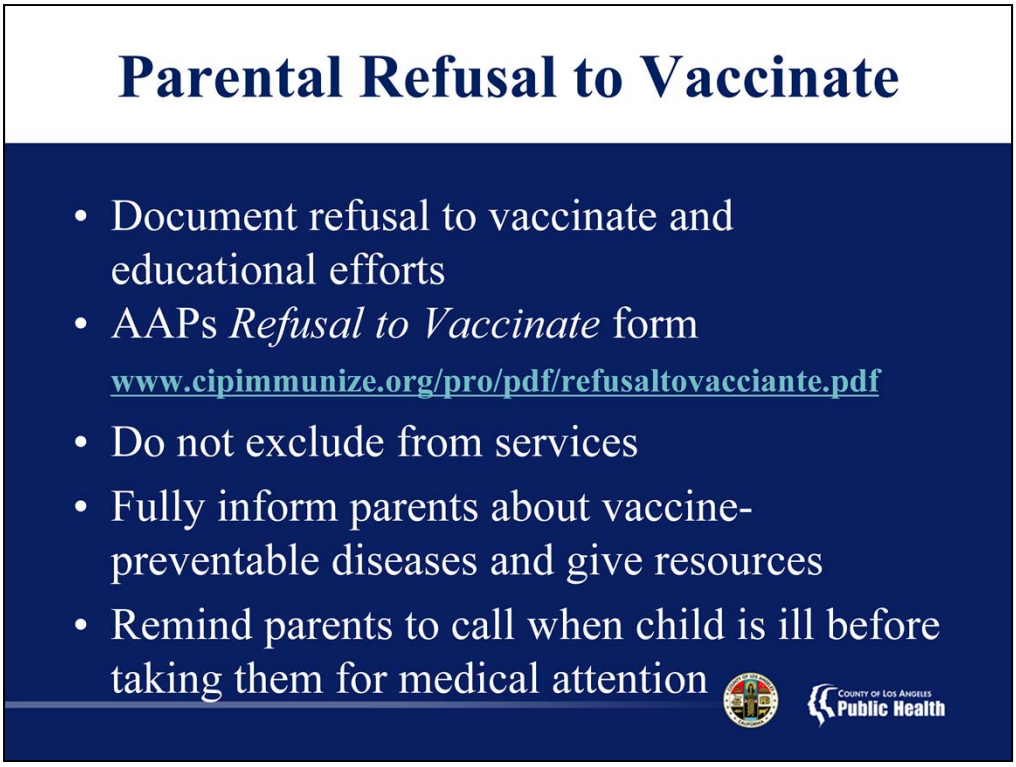
Acknowledge benefits as well as risks of immunizations: Always discuss side effects, risks and adverse reactions of vaccines. It is good to state that vaccines are safe but never state that they are risk-free. Advise parents that, although we don't see a lot of vaccine-preventable diseases, they can return. It is honest and a good practice to tell the parent(s) that the decision to not vaccinate their child will

worry you.

Respect parents' authority: Most parents are very cooperative in working with the doctor to ensure their child's health and well-being. Taking the time out to talk respectfully with parents about their immunization concerns builds a partnership. It lets the parents know that you support their decisions regarding vaccinations and it helps to build trust.



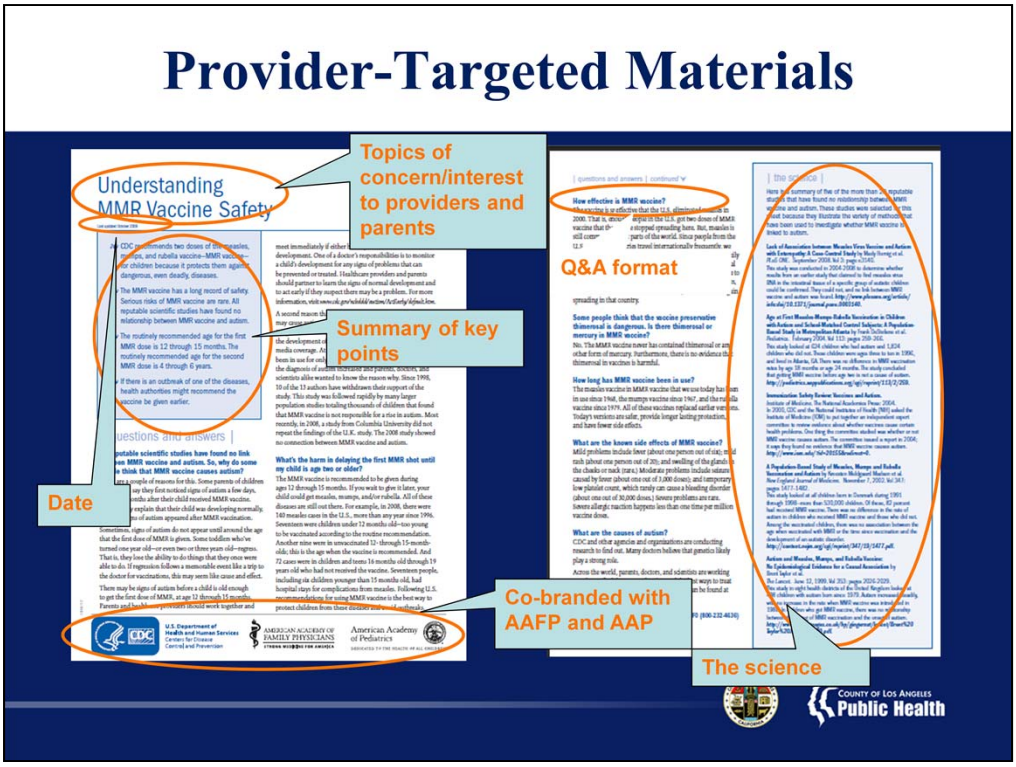
Parents may encounter poorly designed and conducted studies, misleading summaries of well-conducted studies, or anecdotes made to look like science—claiming that vaccines cause autism. Many rigorous studies show that there is no link between MMR vaccine or thimerosal and autism. Visit www.cdc.gov/vaccines/hcp for more information to help you answer parents' questions on these two issues. If parents raise other possible hypotheses linking vaccines to autism, four items are key: (1) patient and empathetic reassurance that you understand that their infant's health is their top priority, and it also is your top priority, so putting children at risk of vaccine-preventable diseases without scientific evidence of a link between vaccines and autism is a risk you are not willing to take; (2) your knowledge that the onset of regressive autism symptoms often coincides with the timing of vaccines but is not caused by vaccines; (3) your personal and professional opinion that vaccines are very safe; and (4) your reminder that vaccine-preventable diseases, which may cause serious complications and even death, remain a threat.



If you educate parents on risks and benefits of vaccine and they still refuse, it is their right. Document the refusal and the efforts made to educate them. Some office may have the parent sign something such as the AAP's *Refusal to Vaccinate* form (found at www.cipimmunize.org/pro/pdf/refusaltovaccinate.pdf.). Re-visit the subject of vaccinations on the next office visit. Some providers may exclude a child from their practice if a parent refuses to immunize. This is not recommended. It can put the child at risk for other health problems in addition to the vaccine-preventable diseases. Remember: it is not the child's decision not to receive vaccinations. They should not have to suffer consequences as a result of their parent's decision.

If a parent refuses to vaccinate their child, education regarding vaccine–preventable diseases should be given verbally as well as in the form of written resources. We will talk about resources later. Make sure that parents are fully informed about clinical presentations of vaccine-preventable diseases, including early symptoms. Parents who refuse vaccines for their children need to be advised and reminded that they should call ahead of time to the doctor's office, urgent care clinic or whatever facility they are taking their child to for care if they are ill. This is for the protection of other patients and office staff should they be ill from a vaccine-preventable disease.

Vaccine Resources



The rest of the provider-targeted materials are in-depth educational resources about vaccines and vaccine safety. All materials were designed keeping in mind the parent and provider research we have done.

-topics were selected based on parent questions and concerns and areas where providers indicated they needed more information to have more comfortable conversations with parents

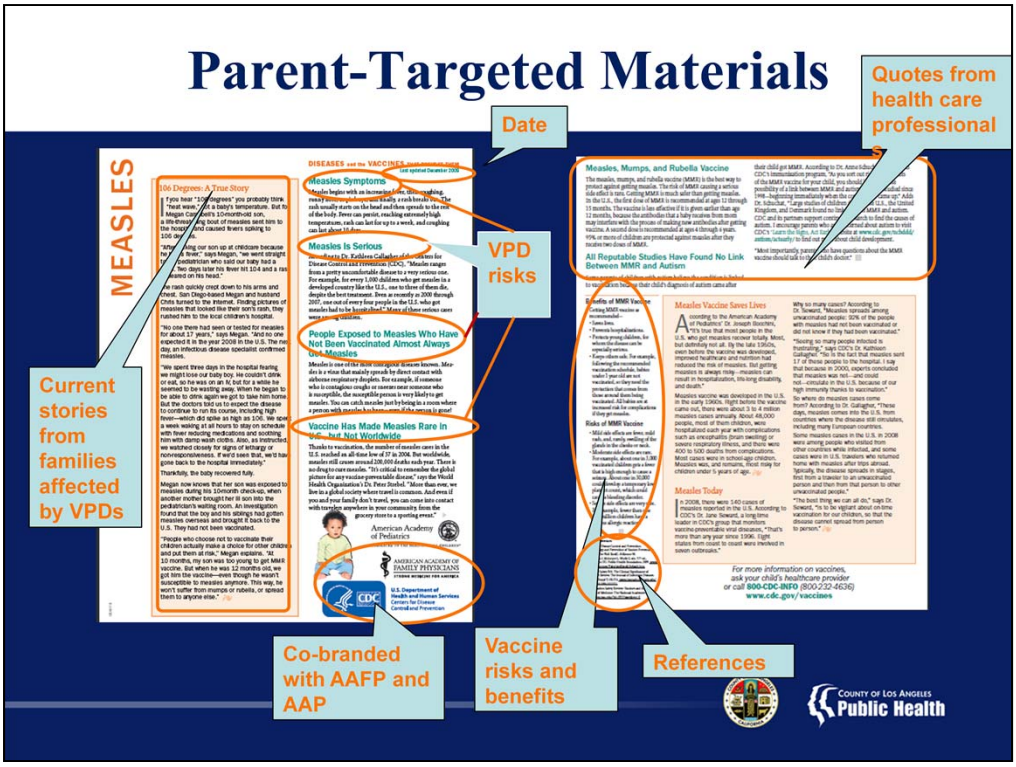
-layering information by providing bullets (other sheets have call out boxes). Providers can quickly read the bullets to get the point of the sheet and pull out key points to use during conversations with parents. We have a lot of people who scan.

-the questions were based on real questions parents asked during focus groups and real concerns indicated via survey data, and the answers take the risk comm approach-this design is intended to help health care professionals when they have real conversations with parents. Allison talked briefly about the equation Risk = hazard + outrage. These sheets are intended to help physicians reduce parents' outrage (concern) and increase their perceived level of hazard-since many think the risks of getting VPDs is low and that even if their child gets them, they aren't that serious.

-co-branding of materials provides more credibility and consistency (provider, CDC, AAP, and AAFP all on same page)

-providers and/or parents may want to know where the research came from for these sheets, and therefore, many references are listed. Parents liked seeing this

info when the materials were pre-tested.



Audience: Parents questioning vaccine safety and/or necessity

Helps give parents important information about VPDs that they might not know and providers information to answer parent questions. We recognize this is long, but it tested well. Parents said that they would be willing to read everything because it pertained to their children's health-the most important thing for them. Also, we laid it out like a magazine article to make it more parent-friendly.

All disease sheets include a personal story of infection with a VPD because we found that parents found personal, true stories to be compelling, and many parents don't understand statistics and rates, but they understand and will remember a story about a child, like their own child-this is how blogs and social media also attract parents and try to shape their opinions about vaccines-these are real stories that are recent to show they aren't diseases of the past-worked hard to get each and every one.

One parent quote: "I have a five year-old nephew who was diagnosed with autism. I was speaking to my sister, and she's made me a little bit wary of some vaccinations, because the risk of it causing autism."

Resource shows the risks associated with each VPD -Parents don't know about many VPDs because they don't see them often.

Mothers classify seriousness of diseases based on perceived severity and likelihood of catching the disease, but…..

Perception is that many are not serious and/or do not circulate widely in the U.S.-need to know the facts

Also shows information about the vaccine for each VPD

Quotations from authoritative sources throughout, but also the physician POV in the last box-health care professional quotes throughout the document-parents wanted

that.
-for the scanners-there is a Vaccine Risk and Benefit section-this is also critical for the risk communication approach-providing both sides
-again, co-branded with AAP and AAFP for credibility and consistency.-Multiple credible sources-AAP and CDC consistently identified as credible by parents in focus groups

CDC, AAP, AAFP and WHO

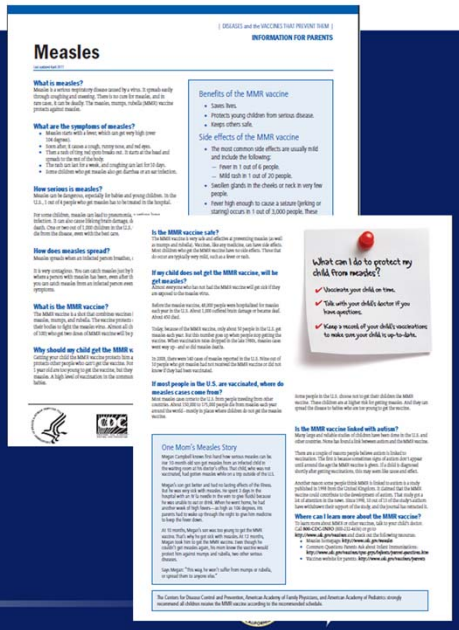
Lists risks and benefits of MMR vaccine

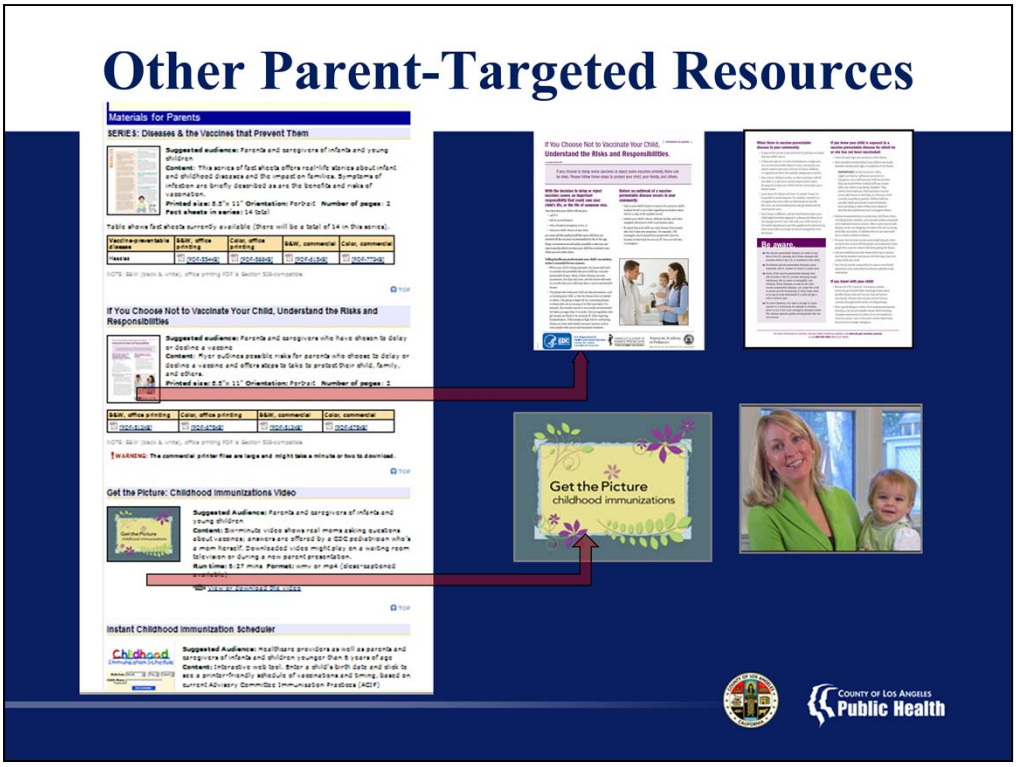
Provides sources for more information

Even the picture is age-appropriate so that parents know it's for them.

Parent-Targeted Materials

- Providers requested more plain-language pieces for parents
- More basic overview of disease and vaccine
- Most have no story (or an abbreviated version)
- Clearly shows benefits and risks





If you choose not to vaccinate your child, understand the risk and responsibilities- information for zero-dose parents, those following delayed schedule, etc.

Get the Picture

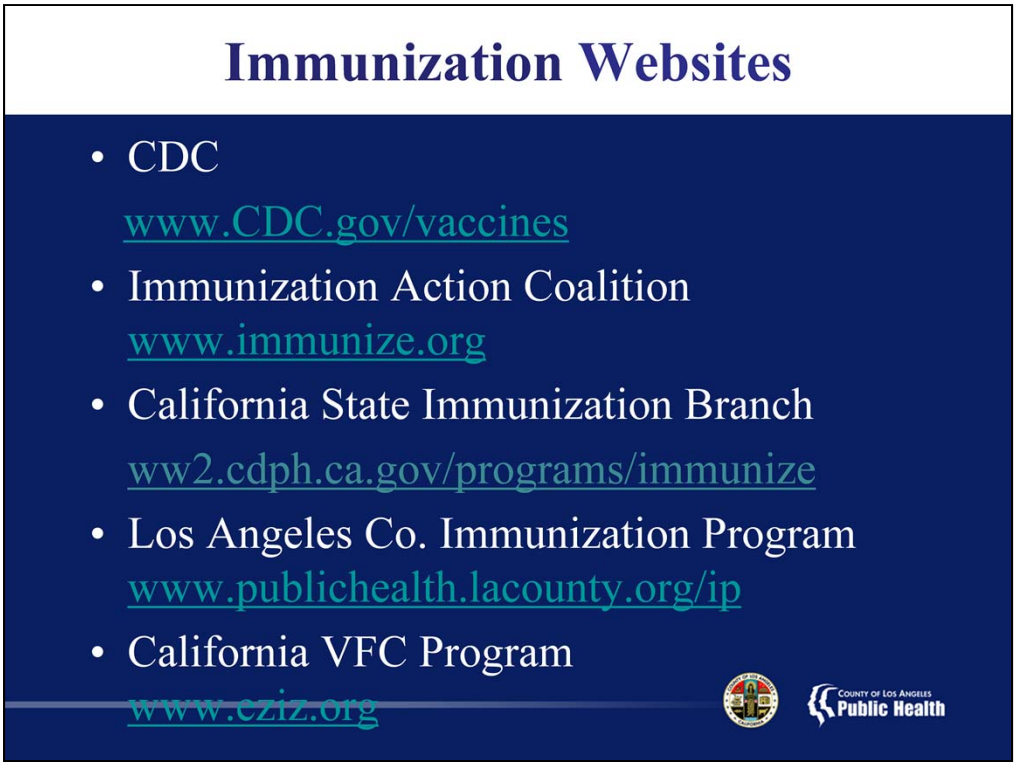
6-minute awarding winning video for parents to view in waiting rooms or on-line (multimedia approach)

People in the video are real moms with real concerns

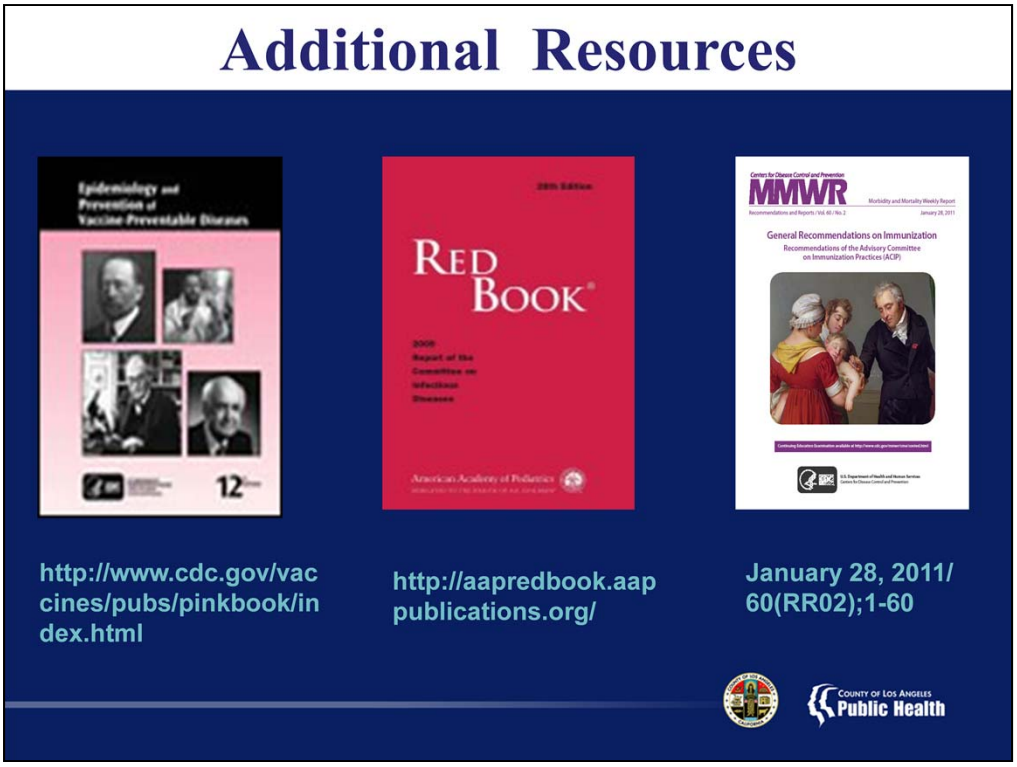
Their questions mirror those expressed during focus groups

The pediatrician who answers their questions indicates her own children are vaccinated

The pediatrician acknowledges their concerns



Here are a few websites where you can find education materials related to immunizations.

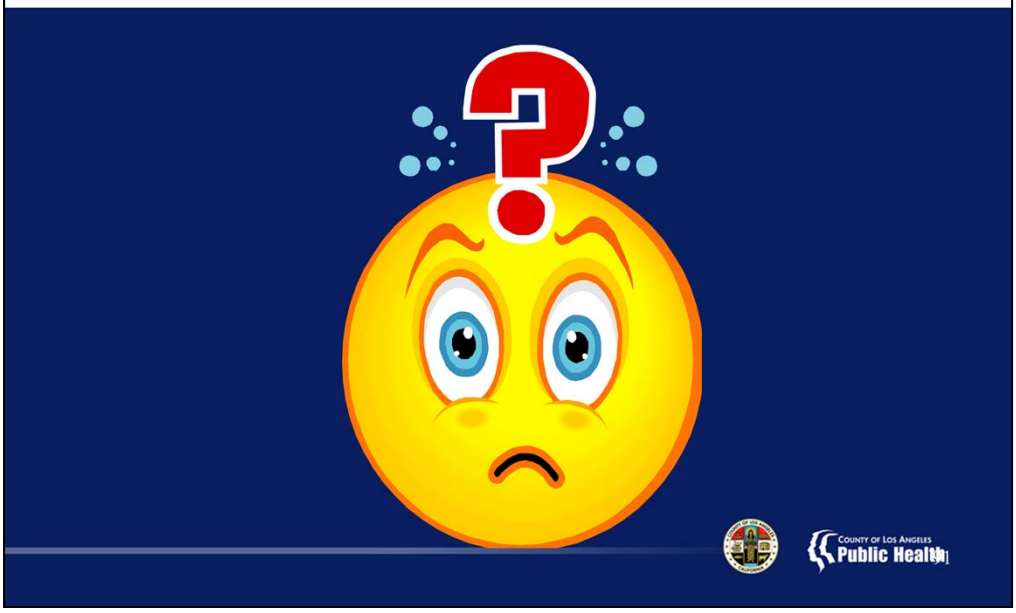


Epidemiology and Prevention of Vaccine Preventable Diseases, 12th edition. Also known as the Pink Book. Includes information on all vaccines, vaccine-preventable diseases, immunization schedules, vaccine administration, and vaccine storage and handling.

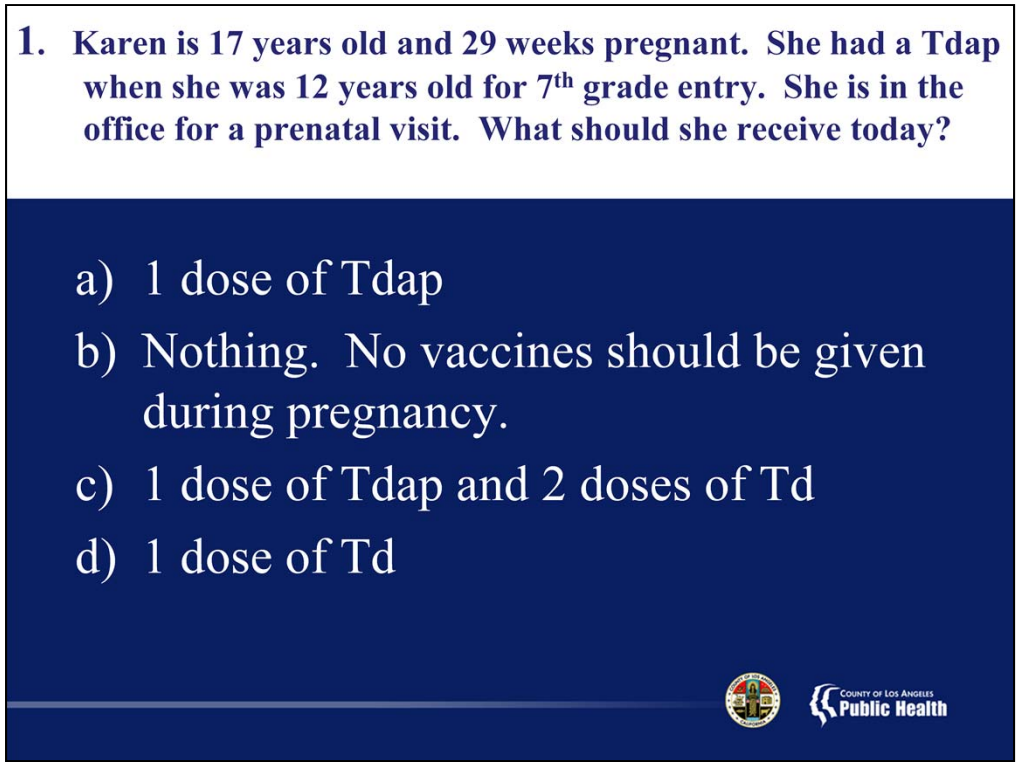
Red Book – 2012 Report of the Committee on Infectious Diseases, of the American Academy of Pediatrics, 29th Edition. Recommendations concerning infectious diseases in and immunizations for infants, children, and adolescents.

This report is a revision of the General Recommendations on Immunization and updates the 2006 statement by the ACIP in the MMWR 2006;55 [No. RR-15].
January 28, 2011/60(RR02);1-60

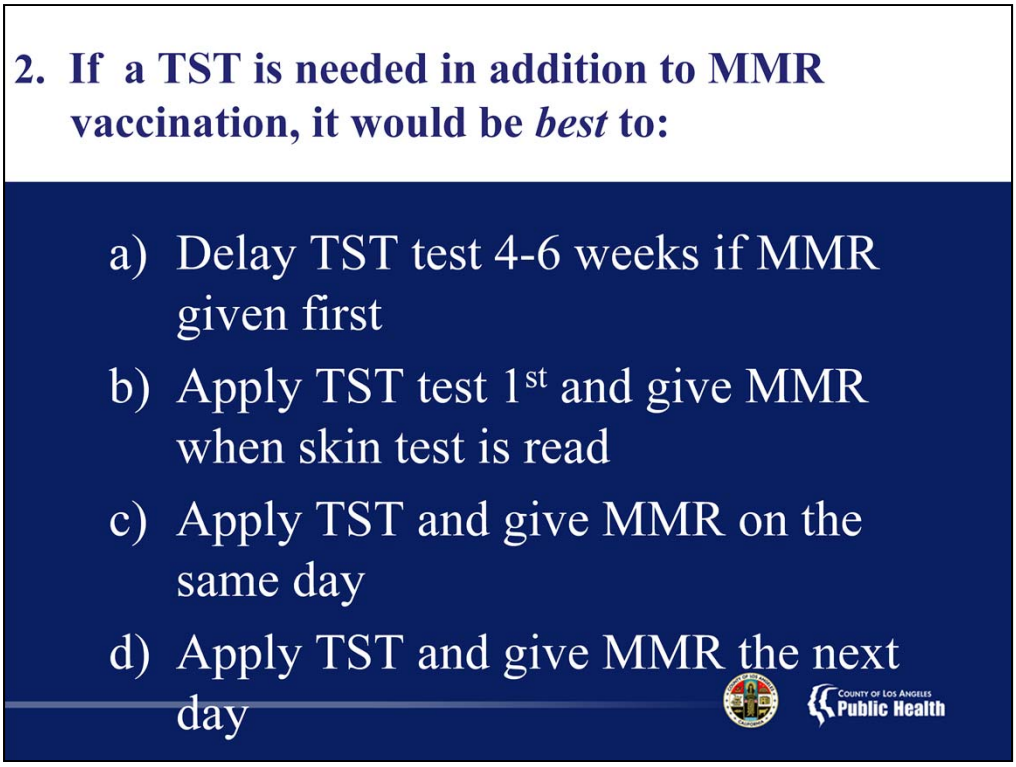
Questions?



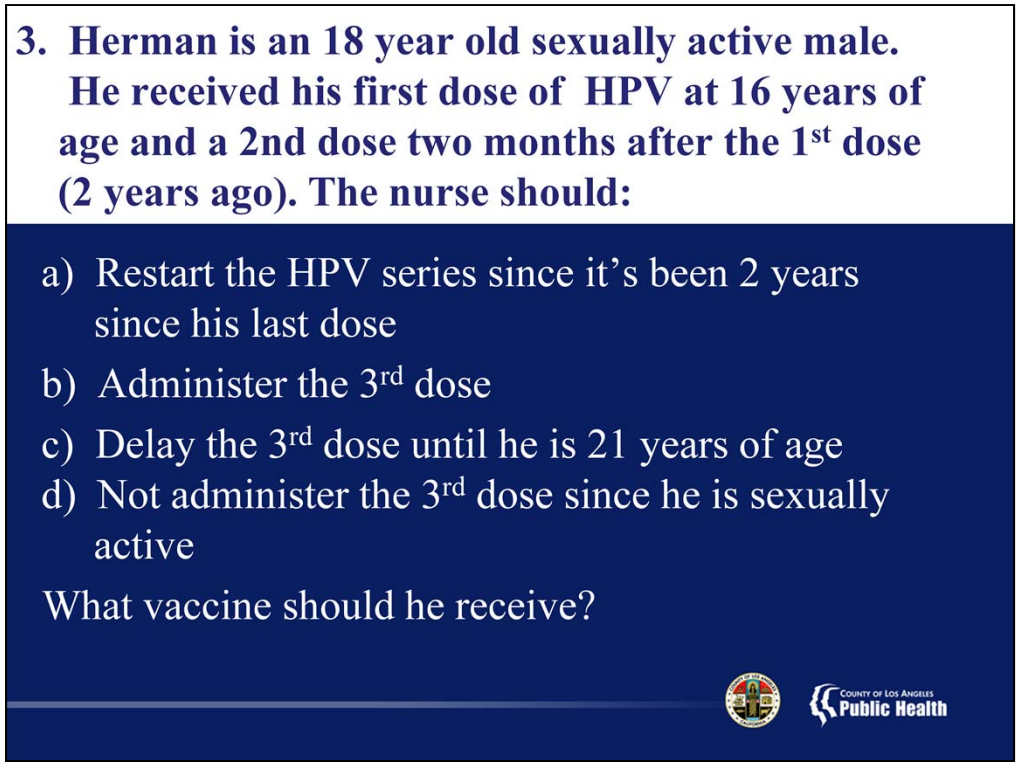
POST-TEST



Answer: a. As of October 24, 2012, the ACIP voted that pregnant adolescents and women should receive a dose of Tdap, between 27 and 36 weeks gestation, with every pregnancy regardless of when the last Tdap was received.



Answer: c. MMR vaccine may decrease the response to the tuberculin skin test, potentially causing a false-negative response in someone who actually has an infection with tuberculosis. MMR can be given the same day as a PPD, but if MMR has been given and 1 or more days have elapsed, in most situations a wait of at least 4 weeks is recommended before administering the skin test. No information on the effect of varicella-containing vaccine or LAIV on a skin test is available. Until such information is available, it is prudent to apply rules for spacing measles vaccine and TST to varicella vaccine and LAIV.

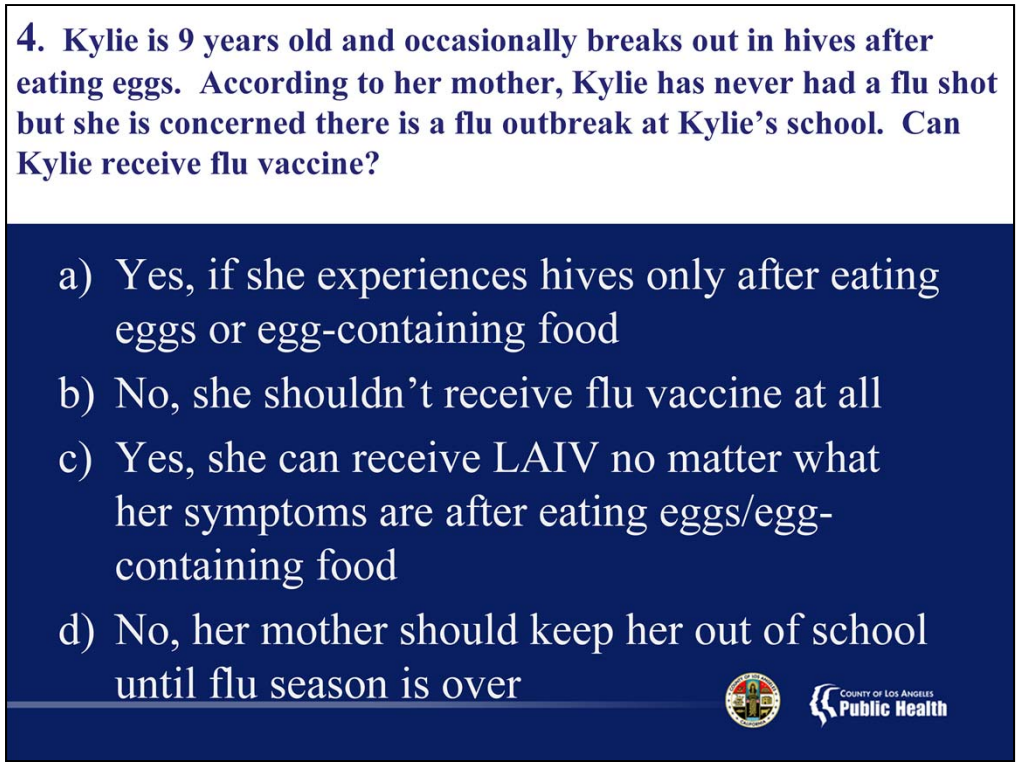


Answer: b. Administer the 3rd dose.

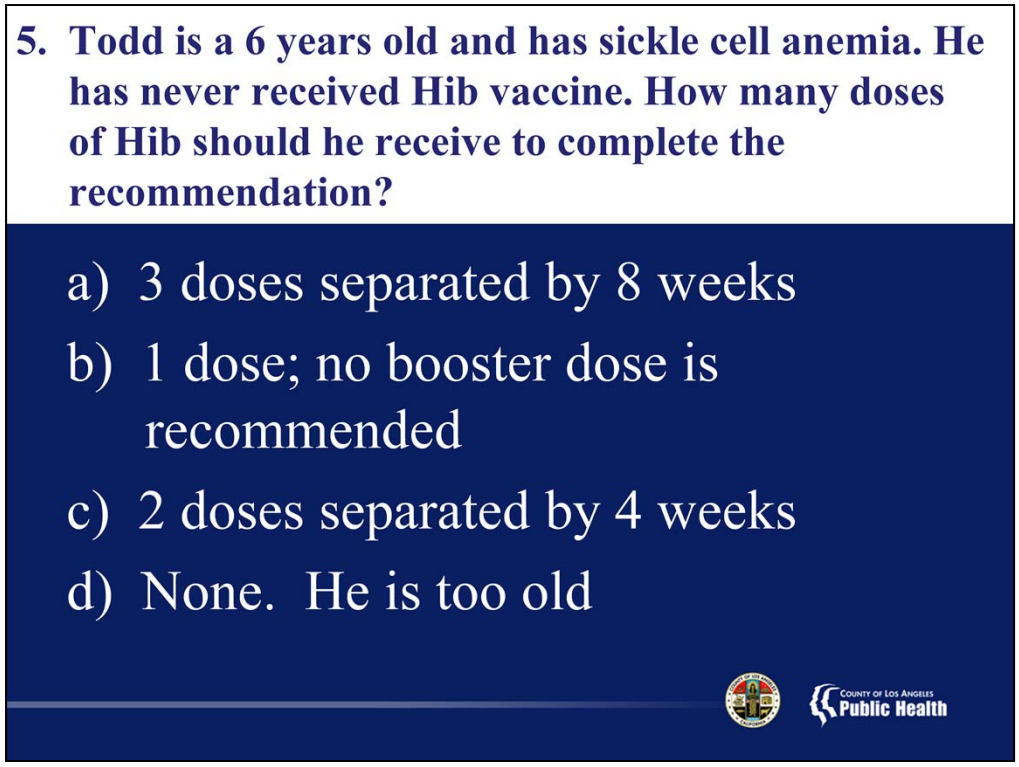
The HPV series should not be restarted. Providers should complete the series by administering the remaining doses left in the series. Because VFC vaccine is only indicated for persons through the 18th birthday, the last dose should be given before age 19.

Follow – up question:

What vaccine should he receive? Gardasil. **Gardasil is the only HPV vaccine recommended for males.**

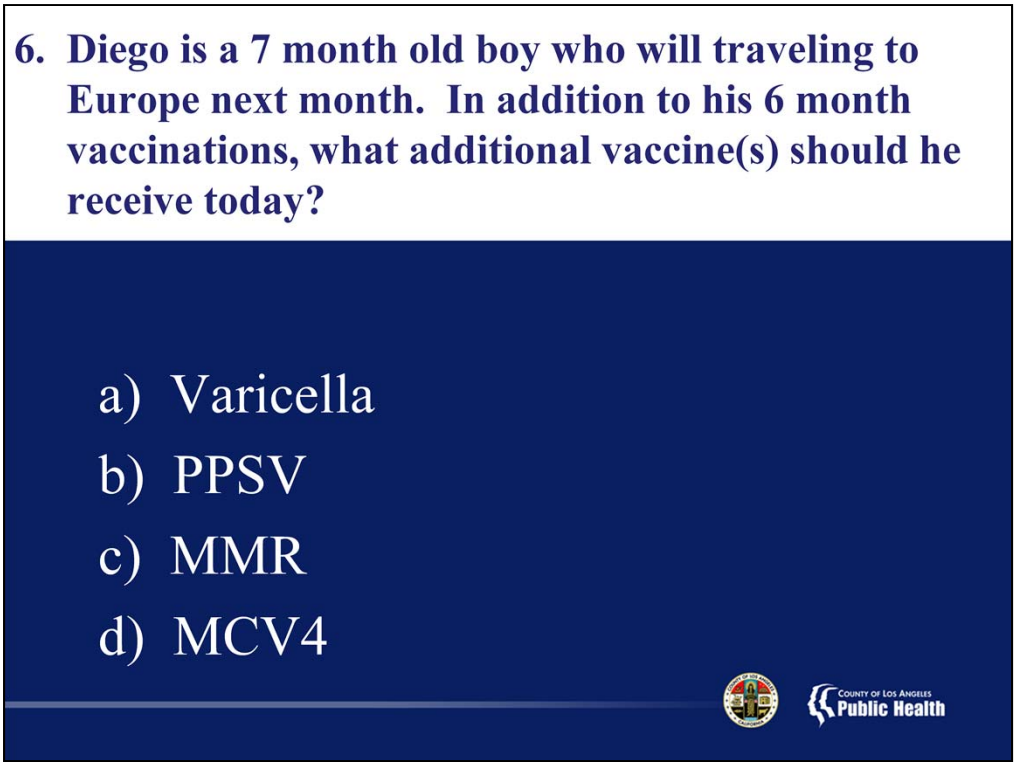

4. Kylie is 9 years old and occasionally breaks out in hives after eating eggs. According to her mother, Kylie has never had a flu shot but she is concerned there is a flu outbreak at Kylie's school. Can Kylie receive flu vaccine?
a) Yes, if she experiences hives only after eating eggs or egg-containing food
b) No, she shouldn't receive flu vaccine at all
c) Yes, she can receive LAIV no matter what her symptoms are after eating eggs/egg-containing food
d) No, her mother should keep her out of school until flu season is over
County of Los Angeles Public Health

Answer: a.

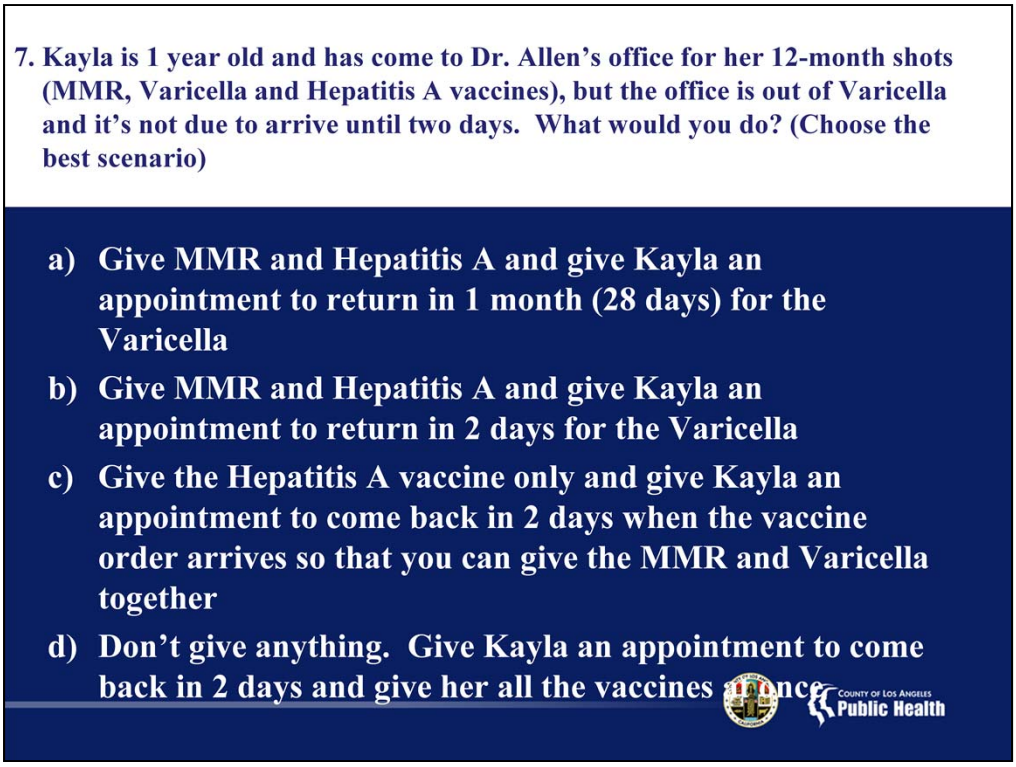


Answer: b. In this instance, you would refer to the Catch-up Immunization Schedule. Although he has never received any Hib vaccinations, only one dose is recommended for persons with sickle cell anemia in his age group who have not previously received Hib vaccinations.

Refer participants to the Catch-up schedule: According to the catch-up schedule, it states that Hib should be considered for unvaccinated persons aged 5 years or older who have sickle cell, leukemia, HIV infection, or anatomic or functional asplenia (first column).



Answer c: Administer MMR vaccine to infants aged 6 through 11 months who are traveling internationally. These children should be revaccinated with 2 doses of MMR vaccine, the first at ages 12 through 15 months and at least 4 weeks after the previous dose, and the second at ages 4 through 6 years.



Answer: a.

The best answer is to give the two vaccines that you have in stock. The answer cannot be b because, remember, if two live vaccines are not administered together, they have to be separated by at least 1 month (28 days). Option c is not such a good choice because the order may not be there in two days and you will have had the parent bring the patient back without having the vaccine in stock. Option d is not a good option because the vaccine order may not come in two days and they may not return.

Nurse Consultants

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County of Los Angeles Public Health

THANK YOU!

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www.publichealth.lacounty.gov/ip