

Adolescent Immunization Update

Connecticut Immunization Teleconference

September 26, 2007

Shannon Stokley, MPH

Immunization Services Division

National Center for Immunization and Respiratory Diseases
Centers for Disease Control and Prevention



DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION



SAFER · HEALTHIER · PEOPLE

Overview

- **Burden of vaccine preventable diseases**
- **Vaccines recommended for adolescents**
- **Vaccination coverage levels**
- **Pre-Teen Vaccination Campaign**

Comparison of U.S. 20th Century Estimated Annual Morbidity and Current Reported Morbidity Vaccine-Preventable Diseases (pre-1990 Vaccines)

Disease	20th Century Annual Morbidity [†]	2005 ^{††}	Percent Decrease
Smallpox	48,164	0	100%
Diphtheria	175,885	0	100%
Measles	503,282	66	> 99%
Mumps	152,209	314	> 99%
Pertussis	147,271	25,616	83%
Polio (paralytic)	16,316	1*	> 99%
Rubella	47,745	11	> 99%
Congenital Rubella Syndrome	823	1	> 99%
Tetanus	1,314	27	98%
<i>Haemophilus influenzae</i>	20,000	226**	99%

[†]Source: CDC. *MMWR* April 2, 1999. 48: 242-264

^{††}Source: CDC. *MMWR*. August 18, 2006 / 55(32);880-893

* Imported vaccine-associated paralytic polio (VAPP)

** Type b and unknown (< 5 years of age)

**Numbers in yellow indicate
at or near record lows in 2005**

Comparison of U.S. Pre-Vaccine Era Estimated Annual Morbidity and Current Estimated Morbidity Vaccine-Preventable Diseases (post-1990 Vaccines)

Disease	Pre-Vaccine Era Estimated Annual Morbidity †	2005 Estimated Morbidity †	Percent Decrease
Hepatitis A	117,333	19,183	84%
Hepatitis B (acute)	66,232	15,352	77%
Pneumococcus (invasive)	63,067	40,325	36%
Varicella	4,085,120	817,024	80%

† Unpublished CDC data, reported November 2006

Recommended Childhood and Adolescent Immunization Schedule UNITED STATES • 2006

Vaccine ▼	Age ►	Birth	1 month	2 months	4 months	6 months	12 months	15 months	18 months	24 months	4-6 years	11-12 years	13-14 years	15 years	16-18 years
Hepatitis B ¹		HepB	HepB	HepB ¹	HepB			HepB Series							
Diphtheria, Tetanus, Pertussis ²			DTaP	DTaP	DTaP	DTaP				DTaP	Tdap	Tdap			
<i>Haemophilus influenzae</i> type b ³			Hib	Hib	Hib ²	Hib									
Inactivated Poliovirus			IPV	IPV	IPV				IPV						
Measles, Mumps, Rubella ⁴						MMR				MMR	MMR				
Varicella ⁵						Varicella					Varicella				
Meningococcal ⁶												MCV4		MCV4	
Pneumococcal ⁷			PCV	PCV	PCV	PCV				PCV	PPV				
Influenza ⁸					Influenza (Yearly)				Influenza (Yearly)						
Hepatitis A ⁹									HepA Series						

This schedule indicates the recommended ages for routine administration of currently licensed childhood vaccines, as of December 1, 2005, 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. ■ Indicates age groups that warrant special effort to administer those vaccines not previously administered. Additional vaccines may be licensed and recommended during the year. Licensed combination vaccines may be used whenever

any components of the combination are indicated and other components of the vaccine are not contraindicated and if approved by the Food and Drug Administration for that dose of the series. Providers should consult the respective ACIP statement for detailed recommendations. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting System (VAERS). Guidance about how to obtain and complete a VAERS form is available at www.vaers.hhs.gov or by telephone, 800-822-7967.




■ Range of recommended ages ■ Catch-up immunization ■ 11-12 year old assessment

Adolescent Vaccination

DEPARTMENT OF HEALTH AND HUMAN SERVICES • CENTERS FOR DISEASE CONTROL AND PREVENTION

Recommended Immunization Schedule for Ages 7–18 Years UNITED STATES • 2007

Vaccine ▼	Age ►	7-10 years	11-12 YEARS	13-14 years	15 years	16-18 years
Tetanus, Diphtheria, Pertussis ¹	<i>see footnote 1</i>		Tdap		Tdap	
Human Papillomavirus ²	<i>see footnote 2</i>		HPV (3 doses)		HPV Series	
Meningococcal ³	MPSV4		MCV4		MCV4³	MCV4
Pneumococcal ⁴			PPV			
Influenza ⁵			Influenza (Yearly)			
Hepatitis A ⁶			HepA Series			
Hepatitis B ⁷			HepB Series			
Inactivated Poliovirus ⁸			IPV Series			
Measles, Mumps, Rubella ⁹			MMR Series			
Varicella ¹⁰			Varicella Series			

-  Range of recommended ages
-  Catch-up immunization
-  Certain high-risk groups

This schedule indicates the recommended ages for routine administration of currently licensed childhood vaccines, as of December 1, 2006, for children aged 7–18 years. For additional information see www.cdc.gov/nip/recs/child-schedule.htm. Any dose not administered at the recommended earlier age should be administered at any subsequent visit when indicated and feasible. Additional vaccines may be licensed and recommended during the year. Licensed combination vaccines may be used whenever any components of

the combination are indicated and other components of the vaccine are not contraindicated and if approved by the Food and Drug Administration for that dose of the series. Providers should consult the respective ACIP statement for detailed recommendations. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting System (VAERS). Guidance about how to obtain and complete a VAERS form is available at www.vaers.hhs.gov or by telephone, **800-822-7967**.

Recommended Vaccines for Adolescents

- Recommended for all adolescents
 - Tetanus diphtheria acellular pertussis (Tdap)
 - Tetravalent meningococcal conjugate vaccine (MCV4)
 - Human Papillomavirus vaccine (HPV)
- Recommended for those not previously vaccinated
 - Hepatitis B
 - Measles-mumps-rubella (MMR) 2nd dose
 - Varicella (or historical or serological immunity)
 - Polio
- Recommended for special target groups at increased risk of infection or complication
 - Influenza
 - Pneumococcal polysaccharide
 - Hepatitis A

Tdap vaccine

- Licensed and recommended in 2005
- Administered as a single dose
- Recommended for all adolescents 11-18 years of age
 - Preferred age is 11-12 years
- If previously vaccinated with Td:
 - Should receive Tdap
 - 5-year interval between Td and Tdap is encouraged

Meningococcal Conjugate vaccine

- **Licensed and recommended in 2005**
- **Administered as a single dose**
- **Recommended for all adolescents 11-18 years of age**
 - **Preferred age is 11-12 years**
 - **College freshman living in dorms**

HPV vaccine

- **Licensed and recommended June 2006**
- **Vaccine protects against 4 types of HPV**
 - 2 types that cause 70% of cervical cancers
 - 2 types that cause 90% of genital warts
- **Administered as a 3 dose schedule**
 - 0, 2, 6 months
- **Recommended for females 11-12 years**
 - Can be given as early as 9 years
 - Should be given to females 13-26 years if not previously vaccinated

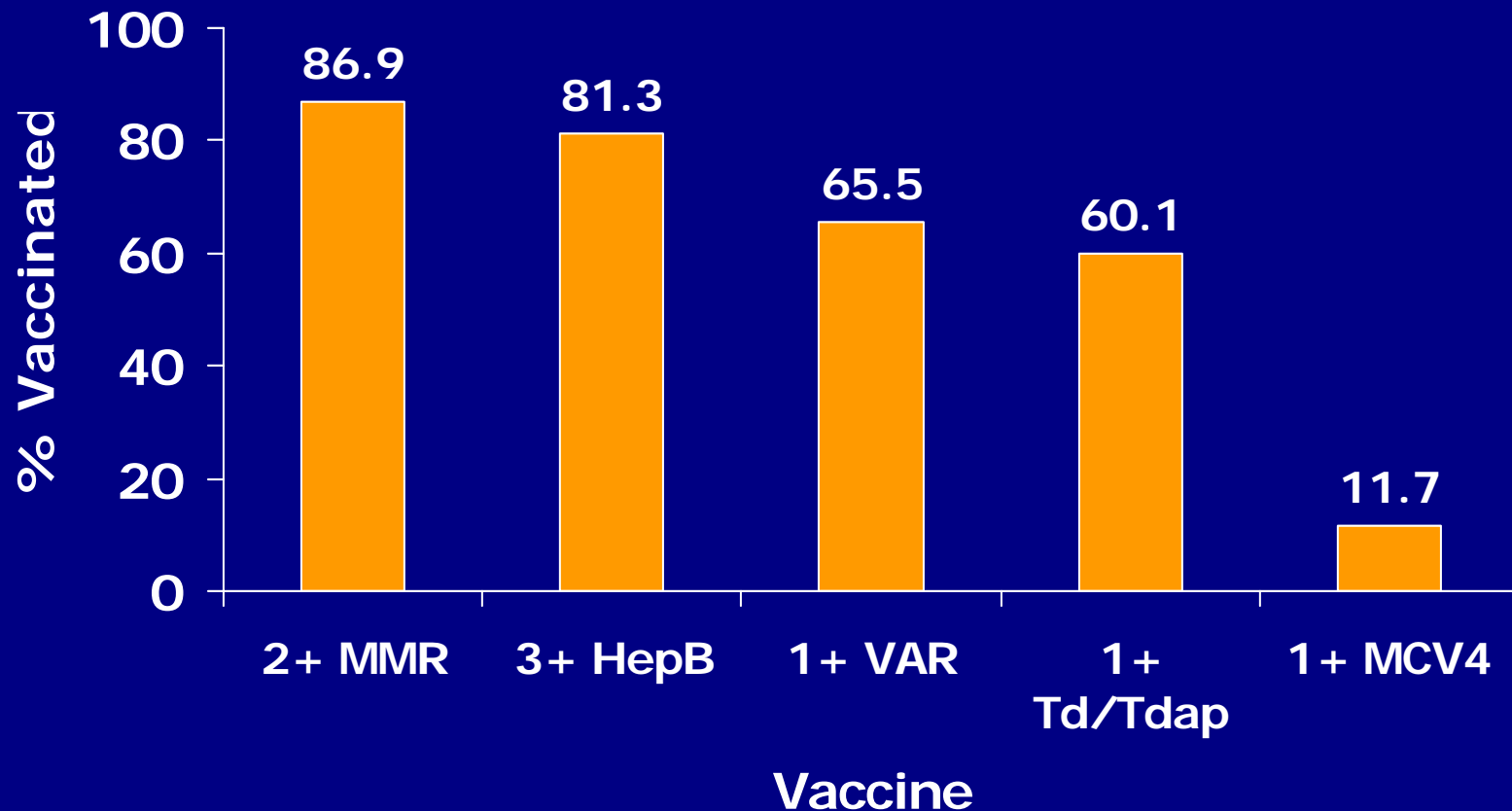
Varicella – 2nd dose

- **June 2006 ACIP updated recommendation**
- **Unvaccinated child <13 years**
 - 2 doses
 - Recommended interval: 3 months
- **Previously vaccinated child with 1 dose**
 - Receive 2nd dose
 - 3 month interval between doses

National Immunization Survey Teen Module (NIS-Teen)

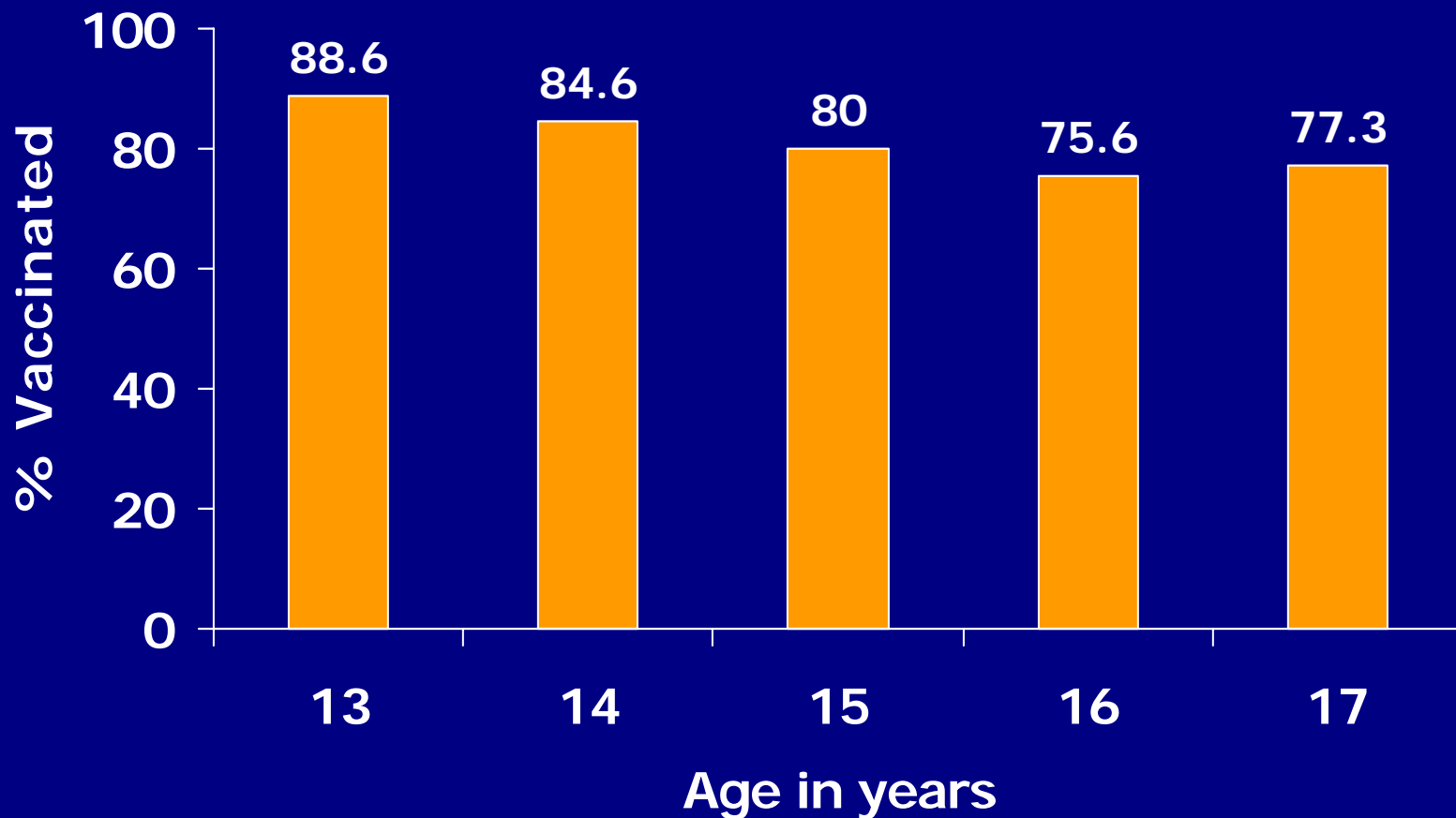
- Conducted Oct-Dec 2006
- Uses National Immunization Survey (NIS) sample frame methodology
 - Random digit dial telephone survey
 - National sample of parents of 13-17 year olds (~5000)
 - Born between 10/7/88 – 2/7/94
 - Provider record check for verification of immunizations

Estimated vaccination coverage levels among adolescents 13-17 years of age, 2006 NIS-Teen



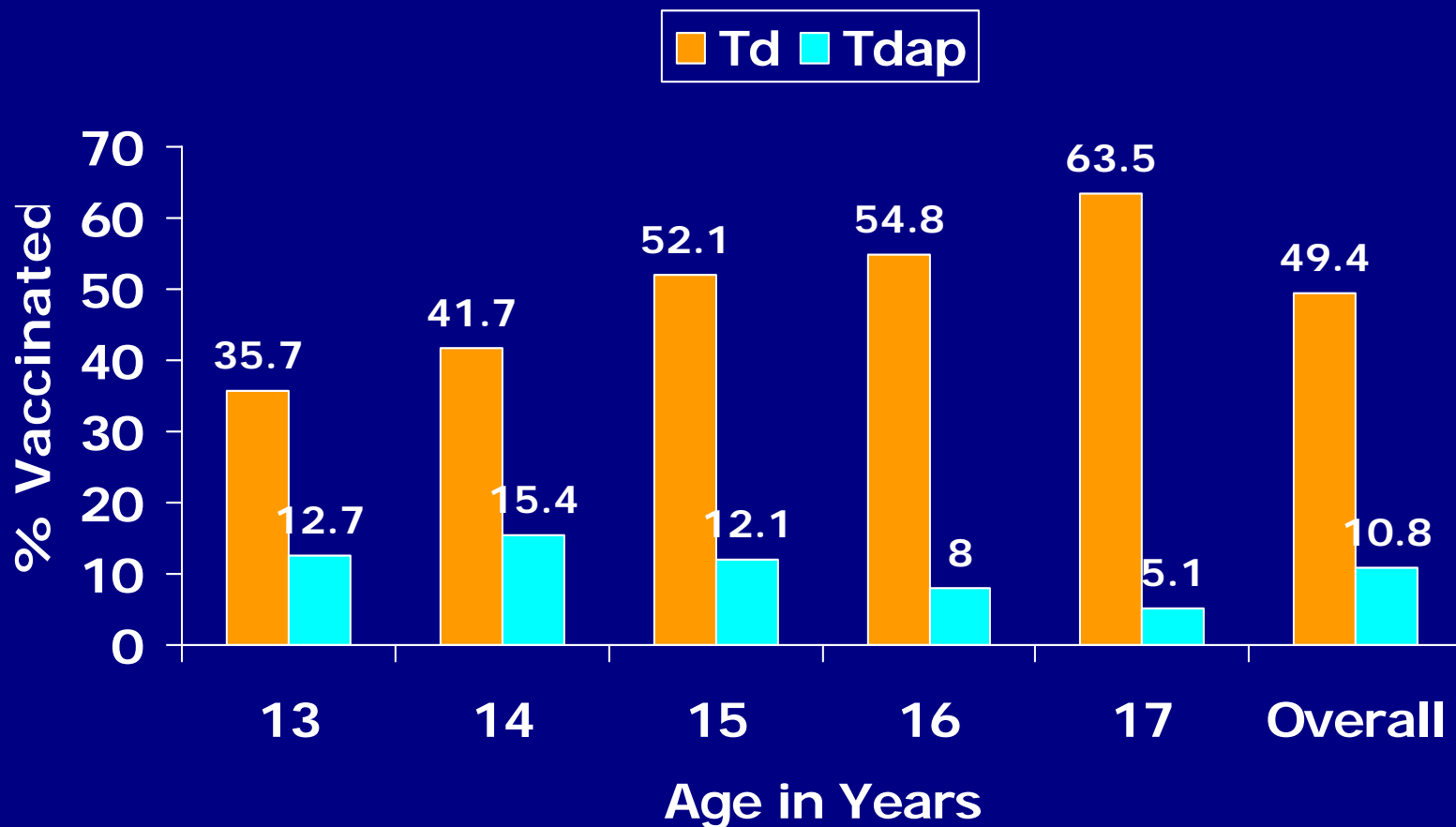
*Varicella coverage is among teens without a reported history of disease.
MMWR. 2007;56:885-888.

Estimated vaccination coverage levels for 3+ Hepatitis B by age, 2006 NIS-Teen



MMWR. 2007;56:885-888.

Estimated vaccination coverage levels of Td/Tdap by age, 2006 NIS-Teen



Strategies to Improve Coverage

- **Evidenced based strategies**
 - Patient reminder/recall
 - Provider reminder/recall
 - Assessment and feedback (AFIX)
 - Standing orders
- **Standards for vaccination**
 - Vaccinate at the earliest opportunity
 - Assess vaccination status at every opportunity
 - Administer all indicated vaccines during the same visit

Missed opportunities for Td vaccination among insured adolescents 11-17 years of age*

Type of Healthcare Visit	Eligible for Td at time of visit	Received Td	Missed Opportunities for Td
Hospitalization	449	2%	98%
Emergency Department	3,560	5%	95%
Outpatient - Preventive	22,299	53%	47%
Outpatient - Vaccine only	7,404	29%	71%
Outpatient - Non-preventive	70,027	4%	96%
TOTAL	103,739	16%	84%

*Courtesy of Dr. Grace Lee; preliminary results (not yet published)

CDC Pre-Teen Vaccination Campaign

- **Launched Aug 1, 2007**
 - **National Immunization Awareness Month**
- **Purpose: motivate parents to get their pre-teens vaccinated and promote the 11-12 year old preventive healthcare visit**

CDC Pre-Teen Vaccination Campaign

- Posters and flyers
 - English and Spanish
 - General vaccines and HPV specific

- Free materials for download at:

<http://www.cdc.gov/vaccines/spec-grps/preteens-adol/07gallery/default.htm>

Do you have an 11 or 12 year old?

**If yes, help prepare your child
for the adolescent years ahead.**



**"I recommend that all
11 and 12 year olds
get a check-up to
monitor their growth,
talk about their
development,
and get updated
on their vaccines."**



Now is the perfect time to vaccinate
your child against serious diseases
like meningitis, tetanus, cervical
cancer, and whooping cough.

Schedule a pre-teen check-up today!

For more information on vaccines, ask your child's
healthcare provider or call **800-CDC-INFO** (800-232-6439).
Website: www.cdc.gov/vaccines/preteen/



Centers for Disease Control and Prevention

CDC

Como padre o madre, *usted* siempre ha apoyado a su hija.



Quando tenía 3 años,
usted estaba allí
para vendarle
la rodilla.



Quando tenía 8 años,
usted estaba allí para
ayudarle a pronunciar
las palabras difíciles.

Ahora es el momento de **proteger** a su hija preadolescente contra el **cáncer del cuello del útero.**



- El cáncer del cuello del útero es causado por un virus común llamado el virus del papiloma humano (HPV, por sus siglas en inglés).
- En el 2007, cerca de 11.000 mujeres en los Estados Unidos serán diagnosticadas con cáncer del cuello del útero y aproximadamente 3.600 morirán a causa del mismo.
- Ahora hay una vacuna disponible que protege contra el HPV. Esta vacuna puede prevenir la mayoría de los cánceres del cuello del útero.
- Los estudios han demostrado que la vacuna es segura y muy eficaz.
- Los médicos recomiendan la vacuna contra el HPV para todas las niñas de 11 y 12 años de edad. Si a su hija no le pusieron la vacuna cuando tenía 11 ó 12 años, haga una cita para que se la pongan ahora.

PARA OBTENER MÁS INFORMACIÓN
SOBRE LAS VACUNAS, CONSULTE CON
EL MÉDICO DE SU NIJA, LLÁME GRATIS
AL TELÉFONO 1-800-332-4636 O VISITE
EL SITIO WEB: www.cdc.gov/vaccines/imz/



Flyers for parents

Questions and answers for parents about pre-teen vaccines

Vaccines are not just for infants. As children get older, the immunity provided by childhood vaccines can wear off. Children are also at risk of new diseases as they enter their pre-teen years. For these reasons, they need vaccinations too. Doctors recommend pre-teens get several vaccines at their 11 or 12 year old check-up.

Q: What vaccines do pre-teens need?

A:

- Tetanus-diphtheria-acellular pertussis vaccine (Tdap).
- Meningococcal conjugate vaccine (MCV4).
- Human papillomavirus (HPV) vaccine, also known as the "cervical cancer vaccine."

The Tdap and MCV4 vaccines are recommended for all pre-teens. The HPV vaccine is only recommended for girls. Pre-teens should get the following vaccinations if they did not receive them during childhood: Hepatitis B, varicella (chickenpox), polio, and measles-mumps-rubella (MMR). Pre-teens who were vaccinated against chickenpox as infants should receive a booster shot now.

Q: Why are these vaccines necessary?

A: These vaccines prevent serious, sometimes life-threatening diseases. Immunity from some childhood vaccines can decrease over time, so people need to get another dose of the vaccine during their pre-teen years. Also, as children move into adolescence, they are at greater risk of catching certain diseases, like meningitis and HPV.

Q: When should pre-teens be vaccinated?

A: Pre-teens can receive all of these vaccines during their 11 or 12 year old check-up. If your child missed that check-up, ask your child's doctor about getting the vaccines now.

**Ask your child's doctor
about these vaccines today.**

Q: Are these vaccines safe and effective?

A: All of these vaccines have been widely studied and are safe and effective. Pre-teens may experience mild side effects such as redness and soreness where they get the injection. These vaccines are recommended by the American Academy of Pediatrics, the American Academy of Family Physicians, and the Centers for Disease Control and Prevention.

Q: Can I get help paying for vaccines?

A: For families with health insurance, all or most of the cost of vaccines is usually covered. Children age 18 and younger may be eligible to get vaccines for free through the Vaccines for Children (VFC) program if they are: Medicaid eligible; uninsured; or American Indian or Alaska Native. Doctors can charge a fee to give each shot. However, VFC vaccines cannot be denied to an eligible child if the family cannot afford the fee. To learn more about the VFC program, visit the website at www.cdc.gov/vaccines/programs/vfc/ or contact your State VFC Coordinator. A list of VFC Coordinators is available at www.cdc.gov/vaccines/programs/vfc/contacts.htm.

For more information on vaccines,
ask your child's healthcare provider
or call 800-CDC-INFO (800-232-6236)
Website: www.cdc.gov/vaccines/preteen/



DEPARTMENT OF HEALTH AND HUMAN SERVICES



Flyers for parents

Information for **parents** about **pre-teen vaccines**

As kids get older, protection provided by some childhood vaccines can begin to wear off. Kids can also develop risks for more diseases as they get older. Help your child transition into adolescence in a healthy way by staying up-to-date on pre-teen vaccines. Doctors recommend that all 11 and 12 year olds get the Tdap and Meningococcal vaccines. 11 and 12 year old girls should also get the human papillomavirus (HPV) vaccine.

Recommended vaccines and the diseases they prevent

Human Papillomavirus (HPV)

Disease: HPV is a common virus. HPV is most common in people in their teens and early 20s. It is the most cause of cervical cancer in women.

Vaccine: HPV vaccine protects against the types of HPV that most commonly cause cervical cancer and genital warts. This vaccine is recommended for 11 and 12 year old girls. Healthy girls should get 3 doses of this vaccine before their first sexual contact when they could be exposed to HPV. If your teenage daughter missed getting the vaccine when she was 11 or 12, ask her doctor about getting it now.

Meningococcal Disease (a common cause of meningitis)

Disease: Meningococcal meningitis is a very serious infection of the lining around the brain and spinal cord. It can cause death. Meningococcal bloodstream infection can cause loss of an arm or leg and even death.

Vaccine: Meningococcal conjugate vaccine (MCV4) protects against these infections. Teens should receive a single shot of this vaccine during their 11 or 12 year old check-up. If your teenage missed getting the vaccine at her/his check-up, ask the doctor about getting it now.

Pertussis (Whooping Cough)

Disease: Whooping cough is highly contagious with prolonged cough. If it is transmitted to infants, it may be life-threatening.

Vaccine: Tetanus-diphtheria-acellular pertussis vaccine (Tdap) is an improvement to the old Td booster because it adds protection from whooping cough while still maintaining protection from tetanus and diphtheria. Teens should receive a single shot of Tdap at their 11 or 12 year old check-up.



Help keep your pre-teen healthy and safe with immunizations.

Check with your child's doctor to make sure your child isn't missing any doses of these childhood vaccines:

Immunization 2

Disease: Can cause lifelong infection, liver damage, ear failure, blindness, and death.

Meningitis, Mumps, and Rubella

Disease: Meningitis: inflammation of the brain and spinal cord. Mumps: can cause deafness. Rubella: can cause birth defects.

Polio

Disease: Highly contagious. It causes flu-like symptoms, but can also cause paralysis and death.

Tetanus/Diphtheria

Disease: Highly contagious. It causes red, itchy skin sores and blisters. It can lead to death due to stiffness, neck, paralysis, and death.

Getting your child vaccinated can be easy and convenient by visiting your health care provider. At the end of the visit, your provider can quickly vaccinate children age 11 and younger who are eligible to get vaccines for free through the Vaccines for Children (VFC) program. For your Medicaid eligible, uninsured, or low-income children or teens below, doctors can check a box to give each shot. However, VFC vaccines cannot be given as single shots. For teens, contact your doctor to learn more about the VFC program, visit for details at www.cdc.gov/vaccines/imz/programs/vfc/ or contact your state VFC Coordinator. A list of VFC Coordinators is available at www.cdc.gov/vaccines/imz/programs/vfc/contact.htm.

For more information on vaccines, visit www.cdc.gov/vaccines/imz/programs/vfc/.

1-800-CDC-IMZP (1-800-232-6273)

Additional: www.cdc.gov/vaccines/imz/programs/vfc/



Immunizations can protect your child against serious diseases and prevent disability, pain and death.

