

The presentation will begin shortly. There will be no audio until then.



Adolescent Vaccines

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Objectives

- ❑ Describe diseases prevented by adolescent immunization
- ❑ Review current recommendations for each of the adolescent vaccines
- ❑ Review issues related to vaccinating adolescents, such as strategies and safety
- ❑ Increase learner understanding of the process of immunization

Catch-Up Vaccines Recommended for Adolescents

- Polio
- Hepatitis B
- MMR
- Varicella
- Hepatitis A

The image shows a screenshot of a vaccine schedule table. The table has columns for 'Vaccine', 'Age Group', 'Schedule', and 'Notes'. It lists various vaccines such as Polio, Hepatitis B, MMR, Varicella, and Hepatitis A, along with their recommended ages and any special considerations. The table is partially obscured by a black border.

Vaccines Recommended for Adolescents with High-Risk Conditions

- Pneumococcal conjugate vaccine (PCV13)
- Pneumococcal polysaccharide vaccine (PPSV23)

Immunization Process

- Assess the patient's immunization history
- Check the recommended immunization schedule
- Screen for contraindications and precautions
- Educate the parent and patient
- Administer all needed vaccines
- Document administered vaccines
- Inform parents and patients when vaccines are needed next

Assess the Immunization History

- ❑ Assess for needed vaccines at EVERY health care visit
 - Acute and health promotion visits
- ❑ Sources for immunization history include
 - Medical record (current and previous health care providers)
 - Immunization Information System
 - Patient immunization record card
 - School immunization records
- ❑ Physicians should only accept documented vaccine doses
- ❑ Patients without documentation should be started on the age-appropriate vaccination schedule

Check the Immunization Schedule

- ❑ Updated and published annually in the *Morbidity and Mortality Weekly Report (MMWR)*
- ❑ Assess using the correct schedule, based on the patient's age
- ❑ Available in print and electronic formats at www.cdc.gov/vaccines
 - A free app is available for iPhone, Android, and Palm Pre (WebOS) phones

Figure 1. Recommended immunization schedule for persons aged 0 through 19 years - Updated October 2015.

NOTE: Vaccines should always be administered on time. If a vaccine is not administered at the recommended age, it should be administered as soon as possible. For more information on the correct timing of immunization, see the text box on the right. For more information on the correct timing of immunization, see the text box on the right.

Vaccine	Age	12 months	15 months	18 months	24 months	30 months	36 months	4-6 years	11-12 years	16 years	19 years
Polio (IPV)	2, 4, 6, 12-18 months	IPV	IPV	IPV							
Polio (OPV)	2, 4, 6, 12-18 months	OPV	OPV	OPV							
Diphtheria, tetanus, acellular pertussis (DTaP)	2, 4, 6, 15-18 months	DTaP	DTaP	DTaP							
Tetanus, diphtheria, acellular pertussis (Tdap)	11-12 years	Tdap	Tdap	Tdap							
Measles, mumps, rubella (MMR)	12-15 months	MMR	MMR	MMR							
Measles, mumps, rubella, varicella (MMRV)	12-15 months	MMRV	MMRV	MMRV							
MMRV (second dose)	4-6 years	MMRV	MMRV	MMRV							
MMRV (third dose)	11-12 years	MMRV	MMRV	MMRV							
MMRV (fourth dose)	16 years	MMRV	MMRV	MMRV							
MMRV (fifth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (sixth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (seventh dose)	19 years	MMRV	MMRV	MMRV							
MMRV (eighth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (ninth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (tenth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (eleventh dose)	19 years	MMRV	MMRV	MMRV							
MMRV (twelfth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (thirteenth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (fourteenth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (fifteenth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (sixteenth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (seventeenth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (eighteenth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (nineteenth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (twentieth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (twenty-first dose)	19 years	MMRV	MMRV	MMRV							
MMRV (twenty-second dose)	19 years	MMRV	MMRV	MMRV							
MMRV (twenty-third dose)	19 years	MMRV	MMRV	MMRV							
MMRV (twenty-fourth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (twenty-fifth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (twenty-sixth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (twenty-seventh dose)	19 years	MMRV	MMRV	MMRV							
MMRV (twenty-eighth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (twenty-ninth dose)	19 years	MMRV	MMRV	MMRV							
MMRV (thirtieth dose)	19 years	MMRV	MMRV	MMRV							

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

PERTUSSIS (WHOOPING COUGH) AND Tdap VACCINE

Pertussis

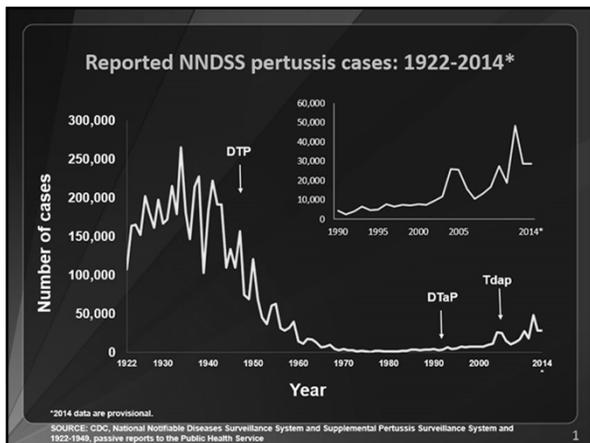


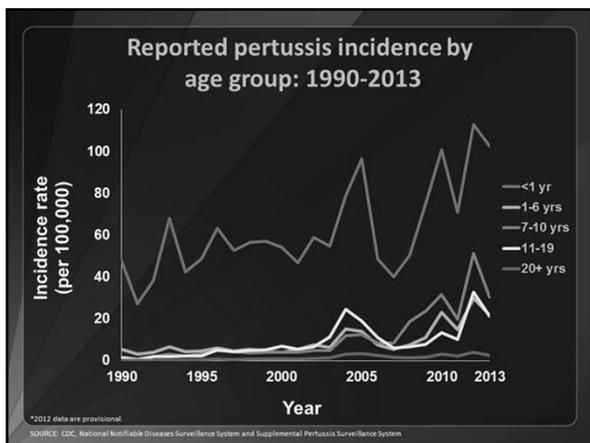
Pertussis Among Adolescents and Adults

- Prolonged cough (3 months or longer)
- Vomiting after prolonged coughing
- Weight loss
- Multiple medical visits and extensive medical evaluations
- Loss of sleep
- Transmission to infants

Pertussis Among Adolescents and Adults

- Complications (pneumonia, rib fractures)
- Hospitalization
- Missed school and work
- Impact on public health system





Why Do Adolescents Need Pertussis Vaccine?

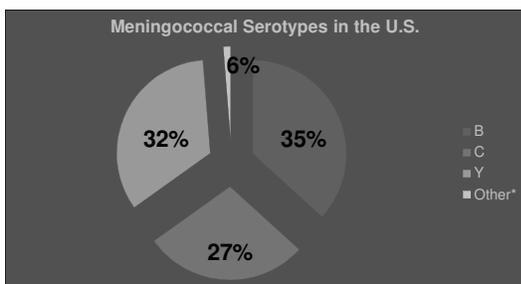
- Pertussis is endemic in the United States
- Outbreaks are still occurring
- Protection provided by the DTaP vaccine series wanes, so adolescents need Tdap as a booster
- Increasing Tdap immunization rates among adolescents is an important strategy for reducing pertussis among adolescents and infants too young to be fully immunized

Meningococcal Disease



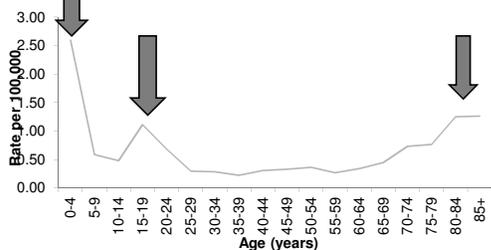
New England Journal of Medicine 2001;344:1372

Meningococcal Disease Serotypes in the U.S., 2005-2011



*Includes serogroup W135, nongroupable, and other serogroups. MMWR, March 22, 2013; Recommendations and Reports / Vol. 62 / No. 2

Three Age Peaks in Meningococcal Disease Incidence



ABCs cases from 1993-2012 and projected to the U.S. population with 18% correction for under reporting

Neisseria meningitidis
Risk Factors for Invasive Disease

- Immunodeficient persons (e.g., no spleen)
- Family members of an infected person
- Smoking
- Passive exposure to smoke
- Upper respiratory tract infection
- Crowding
- College students (living in dormitory)
- Military recruits

Men ACWY Recommendations for Adolescents

- Two doses of Men ACWY are recommended for adolescents aged 11 through 18 years:
 - First dose at age 11 or 12 years
 - Booster dose at age 16 years
- Adolescents who receive their first dose of Men ACWY at or after age 16 years do not need a booster dose

Adolescents with Certain Medical Conditions

- Two-dose primary series in adolescents with**
 - HIV infection
 - Asplenia
 - Complement component deficiency

Meningococcal Serogroup B (MenB) Vaccine Recommendations

- **MMWR / June 12, 2015 / Vol. 64 / No. 22:**
 - Either licensed vaccine should be administered to persons ≥10 years of age at increased risk of meningococcal disease, including persons
 - With persistent complement component deficiencies¹
 - With anatomic or functional asplenia²
 - Who are microbiologists routinely exposed to isolates of Neisseria meningitidis
 - Identified to be at increased risk because of a serogroup B meningococcal disease outbreak

¹including inherited or chronic deficiencies in C3, C5-9, properdin, factor D, factor H, or taking eculizumab (Soliris)

²including sickle cell disease

ACIP MenB Vaccine June, 2015 Vote

- **MenB vaccine series may be administered to adolescents and young adults 16 through 23 years of age to provide short term protection against most strains of serogroup B meningococcal disease. The preferred age for MenB vaccination is 16 through 18 years of age**
 - Permissive recommendation (Category B)

Pending CDC Director's approval and publication of ACIP recommendations

DRAFT

ACIP MenB Recommendations

- MenB should be administered as either a 2-dose series of MenB-4C or a 3-dose series of MenB-FHbp
- The same vaccine product should be used for all doses
- Based on available data and expert opinion, MenB-4C and MenB-FHbp may be administered concomitantly with other vaccines indicated for this age, but at a different anatomic site, if feasible
- No product preference to be stated

High School Students and Sexual Activity

□ Among U.S. high school students surveyed in 2013

- 47% had ever had sexual intercourse.
- 34% had had sexual intercourse during the previous 3 months, and, of these
- 41% did not use a condom the last time they had sex.

- 15% had had sex with four or more people during their life.

CDC. Youth Risk Behavior Surveillance—United States, 2013. MMWR 2014;63(SS-4).

Cumulative Incidence of Any HPV Infection Months after Sexual Initiation



Available HPV vaccines

	Bivalent (Cervarix)	Quadrivalent (Gardasil)	9-valent (Gardasil 9)
Licensed for	Females 9-25 years	Females 9-26 years Males 9-26 years	Females 9-26 years Males 9-15 years

- At the time of the first 9vHPV application to FDA, trials in males 16-26 years had not been completed
- Immunogenicity data now are available for males 16-26 years, reviewed by ACIP and submitted to FDA
- ACIP recommended use of 9vHPV in the currently recommended age groups

L1, major capsid protein; VLP, virus like particle

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Updated ACIP recommendations

- Routine vaccination at age 11 or 12 years*
- Vaccination recommended through age 26 for females and through age 21 for males not previously vaccinated
- Vaccination recommended for men who have sex with men and immunocompromised men (including persons HIV-infected) through age 26
- Vaccination of females is recommended with 2vHPV, 4vHPV (as long as this formulation is available), or 9vHPV
- Vaccination of males is recommended with 4vHPV (as long as this formulation is available) or 9vHPV

*vaccination series can be started at 9 years of age

• MMWR 2015;64:300-4

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Updated ACIP recommendations, 2015

- 2vHPV, 4vHPV and 9vHPV all protect against HPV 16 and 18, types that cause about 66% of cervical cancers and the majority of other HPV-attributable cancers in the United States.
- 9vHPV targets five additional cancer causing types, which account for about 15% of cervical cancers.
- 4vHPV and 9vHPV also protect against HPV 6 and 11, types that cause genital warts.

MMWR 2015;64:300-4

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HPV Vaccine: Special Situations

- Vaccine can still be given, even if**
 - History of genital warts
 - History of abnormal Pap test result
 - Patient is immunocompromised
 - Female patient is breastfeeding

Screen for Contraindications and Precautions

- ❑ Key to preventing serious adverse reactions following vaccination is screening
- ❑ Ask screening questions every time vaccines are needed
- ❑ Follow only true contraindications and precautions



www.immunize.org

Vaccine Contraindications and Precautions

- ❑ **Contraindication**
 - Severe allergic reaction to a vaccine component or following a prior dose
 - Encephalopathy not due to another identifiable cause occurring within 7 days of a pertussis-containing vaccine
 - For pertussis-containing vaccines only
- ❑ **Precaution**
 - Moderate or severe acute illnesses (defer until symptoms improve)

Educate the Parent and Patient

- ❑ **Immunization education should include:**
 - Benefits of and risks associated with the vaccines
 - After care instructions for managing side effects
- ❑ **Use Vaccine Information Statements (VIS)**
 - Give EVERY time a dose of vaccine is administered
 - Available in print and electronic formats from CDC at www.cdc.gov/vaccines

Administer All Needed Vaccines

- ❑ **Ensure vaccines are prepared and administered correctly**
- ❑ **Tdap, MCV4, and HPV vaccines can be administered during the same health care visit**
 - *And* influenza vaccine during flu season
- ❑ **Administer any vaccines that may have been missed earlier in childhood**

General Adolescent Vaccine Safety

- ❑ **Fainting—or syncope—can occur after any medical procedure, including vaccination**
 - Adolescents should be seated or lying down during vaccination
 - Providers should consider observing patients in seated or lying positions for 15 minutes after vaccination
 - Concern: risk for serious secondary injuries
- ❑ **Vaccine Adverse Event Reporting System**

Document Administered Vaccines

- ❑ **Document immunizations in the medical record and an Immunization Information System**
- ❑ **Federal law requires all immunization providers to document:**
 - Date vaccine dose given
 - Date Vaccine Information Statement (VIS) given
 - Date on VIS
 - Vaccine manufacturer
 - Vaccine lot number
 - Signature of person administering the vaccine
- ❑ **Best practice: record type of vaccine, site, dosage, and route**

Inform Parents and Patients when Vaccines are Needed Next

- ❑ Utilize tracking, reminder, and recall systems
 - Reminder/recall: let parents and adolescents know a vaccine or dose is due or missed
 - IIS or registries often can help with reminder/recall
 - Standing orders
 - Schedule an appointment for the next dose before leaving the facility

Considerations for Providing Vaccines to Adolescents

- ❑ Use all visits as opportunities for immunization
 - Check vaccination status at each visit
 - Compliance with 3-dose regimen
- ❑ Provider recommendation is strongest predictor of vaccination

Physicians Can Change Minds



National Immunization Survey interviews in 2003–2004 suggested that

1. 28% of parents were doubtful about benefits and safety of certain vaccines
2. Parents who were doubtful delayed or refused child's vaccination

Most parents who changed their minds about delaying or refusing vaccination cited *information from their physician* as the main reason for the change.

Journal of Pediatrics, October 2008

Stay Up to Date

- Visit accurate websites:
 - CDC www.cdc.gov/vaccines
 - American Academy of Pediatrics www.aap.org and www.2.aap.org/immunization
 - American Academy of Family Physicians www.aafp.org
 - Immunization Action Coalition www.immunize.org
 - Sign up for email alerts, listservs if possible
- Subscribe to CDC's *MMWR* www.cdc.gov/mmwr
- Find additional resources from your state or local health department immunization program

Summary

- Adolescents are, or will be, at risk for vaccine-preventable diseases
- Recommend vaccines to your patients and their parents
- Use preventive *and* acute care visits to ensure adolescents receive all needed vaccines
- Integrate proven strategies to improve vaccination rates into health care systems

CDC Vaccines and Immunization Contact Information

- **Telephone** **800.CDC.INFO**
(for patients and parents)
- **Email** **nipinfo@cdc.gov**
(for providers)
- **Website** **www.cdc.gov/vaccines/**
- **Vaccine Safety** **www.cdc.gov/vaccinesafety/**

Thank You!

Type your question in the chat window to the right

After the presentation, questions may be sent to:

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Mary Woinarowicz	mary.woinarowicz@nd.gov
Dominick Fitzsimmons	dfitzsimmons@nd.gov

Immunization Program :
701.328.3386 or toll-free 800.472.2180

Post-test

- Post-test
 - Nurses interested in continuing education credit, visit: <http://www.ndhealth.gov/disease/post/default.aspx?PostID=94>
 - Successfully complete the five-question post-test to receive your certificate.
- Credit for this session is available until Tuesday, November 17, 2015.
- This presentation will be posted to our website: www.ndhealth.gov/immunize.
