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NEEDLE TIPS

from the Immunization Action Coalition — www.immunize.org

ACIP Expands Recommendations for the Use of Meningococcal Serogroup B Vaccine to Include Adolescents and Young Adults

Two serogroup B meningococcal (MenB) vaccines were recently licensed by the Food and Drug Administration (FDA) for use in people age 10–25 years. MenB-FHbp (Trumenba; Pfizer Inc.) was licensed in October 2014, and MenB-4C (Bexsero; GSK) in January 2015.

On October 23, 2015, *Morbidity and Mortality Weekly Report* (*MMWR*) published "Use of Serogroup B Meningococcal Vaccines in Adolescents and Young Adults: Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2015," available at www.cdc.gov/mmwr/pdf/wk/mm6441.pdf, pages 1171–6. These recommendations were voted upon and approved at the June 2015 ACIP meeting.

The recommendations state that adolescents and young adults age 16–23 may be vaccinated with MenB vaccine to provide short-term protection against most strains of serogroup B meningococcal disease. The preferred age for MenB vaccination is 16–18 years.

The new MenB recommendations are classified as Category B, meaning the recommendations allow for individual clinical decision making. (Vaccines with Category A recommendations are made for all persons in an age- or risk-factor-based group.) The Category B classification enables coverage by the Vaccines For Children program and most insurance plans.

MenB vaccine should be administered either as a 3-dose series of MenB-FHbp (Trumenba) or a 2-dose series of MenB-4C (Bexsero). The two MenB vaccines are not interchangeable; the same vaccine product must be used for all doses. On the basis of available data and expert opinion, MenB-FHbp or MenB-4C may be administered concomitantly with other vaccines indicated for this age, but at a different anatomic site, if feasible.

In addition to the Category B recommendation for adolescents and young adults, CDC also has issued recommendations for routine use (i.e., Category A) of MenB vaccines in certain groups of people at increased risk for serogroup B meningococcal disease. (Available at www.cdc.gov/mmwr/pdf/wk/mm6422.pdf, pages 608-612) These groups include:

- People age 10 years and older who have functional or anatomic asplenia
- People age 10 years and older who have persistent complement component deficiency
- People age 10 years and older who are at risk during an outbreak caused by a vaccine serogroup, such as on college campuses
- Microbiologists who work with meningococcus bacteria in a laboratory

Even though both MenB vaccines are FDA-licensed for people 10 through 25 years of age, ACIP recommends the vaccines can be used off-label for those at increased risk of serogroup B meningococcal disease who are 26 years of age or older.

In contrast to meningococcal conjugate vaccine (MCV4 [MenACWY]) recommendations, MenB vaccine is not routinely recommended for college students or international travelers.

Q&As regarding the use of both MCV4 and MenB in adolescents are available on the CDC website at www.cdc.gov/vaccines/vpd-vac/mening/faqs-hcp-adolescent-vaccine.html.

What's In This Issue

Ask the Experts

The Immunization Action Coalition extends thanks to our experts, medical officer Andrew T. Kroger, MD, MPH, and nurse educator Donna L. Weaver, RN, MN, both with the National Center for Immunization and Respiratory Diseases at the Centers for Disease Control and Prevention (CDC).

Meningococcal vaccines

What meningococcal vaccines are currently available in the United States?

Since 2005, 2 types of meningococcal vaccines have been available in the United States that protect against meningococcal serogroups A, C, W, and Y: 1) meningococcal polysaccharide vaccine (MPSV4; Menomune, Sanofi Pasteur), which is made up of polysaccharide (sugar molecules) from the surface of the meningococcal bacteria; and 2) meningococcal conjugate vaccines (MCV4; Menactra, Sanofi Pasteur; Menveo, GSK) in which the polysaccharide is chemically bonded ("conjugated") to a protein to produce better protection. MCV4 is more effective in young children than the original polysaccharide vaccine.

More recently, vaccines have become available that offer protection from meningococcal serogroup B. These vaccines are composed of proteins also found on the surface of the bacteria. Neither type of vaccine contains live meningococcal bacteria.

MPSV4 and MCV4 provide no protection against serogroup B disease, and meningococcal serogroup B vaccines (MenB) provide no protection against

Ask the Experts… *continued on page 22* ▶

Immunization questions?

- Email nipinfo@cdc.gov
- Call your state health department (phone numbers at www.immunize.org/coordinators)

Needle Tips

online at www.immunize.org/nt

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MCV4: You're Not Done If You Give Just One. Give 2 MCV4 Doses to Strengthen Protection.

New initiative reminds clinicians to give dose #2 at age 16

According to the recently released Centers for Disease Control and Prevention's (CDC) 2014 National Immunization Survey-Teen, most teens are inadequately protected from meningococcal (A, C, W, Y) disease.[1] CDC recommends that a child receive one dose of meningococcal conjugate vaccine (MCV4) at age 11 or 12 years, followed by a second (or booster) vaccination at age 16, as the protection provided by the first dose often wanes within five years. The CDC survey indicates that only 28% of teens by age 17 years had received the second dose to boost their protection against this devastating illness at a time in life when they are at heightened risk for meningococcal disease.

In response to these extremely low immunization rates for MCV4 booster doses, the Immunization Action Coalition (IAC), in collaboration with Sanofi Pasteur, has launched a new initiative at www.Give2MCV4.org. The core of this campaign is a collection of free downloadable resources to assist your practice in addressing this MCV4 booster dose gap.

Be sure to visit the initiative's website, www.Give2MCV4.org, where you will find the following print resources for health care professionals (HCPs):

Fact sheet – MCV4: You're Not Done If You Give Just One; Give 2 Doses to Strengthen Protection at www.give2mcv4.org/wp-content/uploads/2015/07/Give-2-Doses-to-Strengthen-Protection.pdf

Talking points for HCPs – Recommending MCV4: What to Say and How to Say It: www.give2mcv4.org/wp-content/uploads/2015/07/Toolkit-Recommending-MCV4.pdf

Overview of vaccine recommendations for adolescents – Vaccinate Adolescents: Think 1–2–3!: www.give2mcv4.org/wp-content/uploads/2015/08/Toolkit-Vaccinate-Adolescents.pdf

www.Give2MCV4.org

MCV4 YOU'RE NOT DONE IF YOU GIVE JUST ONE
GIVE 2 DOSES to Strengthen Protection

Suggestions to improve immunization rates – Top 10 Ways to Improve Adolescent Immunization Rates: www.give2mcv4.org/wp-content/uploads/2015/07/Toolkit-Top-10-Ways.pdf

Access full collection of MCV4 resources – View entire MCV4 Toolkit: www.give2mcv4.org/essential-tools/view-all-tools/

In addition, the Give2MCV4.org website offers a series of videos for HCPs, as well as handouts you can share with your patients and their parents. Check back often, as more tools will be posted in coming months.

Don't let one of your adolescent patients be inadequately protected. Remember – *You're not done if you give just one!*

1 National, Regional, State, and Selected Local Area Vaccination Coverage Among Adolescents Aged 13–17 Years – United States, 2014. MMWR, 2015; 64(29);784–792 (www.cdc.gov/mmwr/preview/mmwrhtml/mm6429a3.htm).

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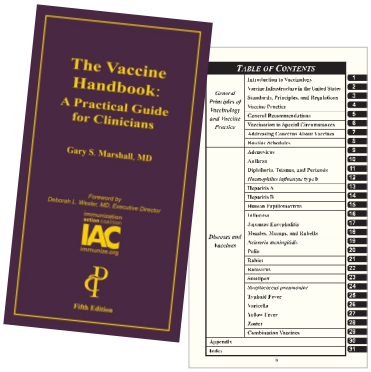
The Vaccine Handbook: A Practical Guide for Clinicians ("The Purple Book") by Gary Marshall, MD



NEW! Fifth edition extensively updated for 2015

Purchase *The Vaccine Handbook* (560 pages) from IAC at www.immunize.org/vaccine-handbook.

$29.95 + shipping • Discount pricing available!

Wallet-sized immunization record cards for all ages: For children and teens, for adults, and for a lifetime!

Record Cards: $45/box

Now you can give any patient a permanent vaccination record card designed specifically for their age group: child and teen, adult, or lifetime. These brightly colored cards are printed on durable rip-, smudge-, and water-proof paper. Each box contains 250 cards.

▶ To order, visit www.immunize.org/shop, or use the order form on page 24.

Quantity discounts are available. To receive sample cards, contact us: admininfo@immunize.org

Training Video: "Immunization Techniques – Best Practices with Infants, Children, and Adults"

DVD: $17 each
Quantity discounts are available.

The California Department of Public Health, Immunization Branch, updated its award-winning training video, "Immunization Techniques: Best Practices with Infants, Children, and Adults." The 25-minute DVD can be used to train new employees and to refresh the skills of experienced staff on administering injectable, oral, and nasal-spray vaccines to children, teens, and adults.

▶ To order, visit www.immunize.org/shop, or use the order form on page 24.

For health care settings in California, contact your local health department immunization program for a free copy.

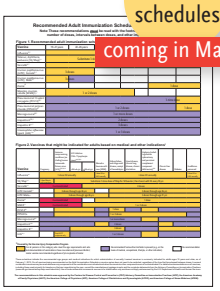
Laminated child and adult immunization schedules Order one of each for every exam room

2016 schedules coming in March

Coming in March 2016! The ACIP/AAP/AAFP-approved immunization schedule for people ages 0 through 18 years (8-sided) and the ACIP/AAFP/ACOG/ACNM-approved schedule for adults (6-sided). Both are laminated and washable for heavy-duty use, complete with essential footnotes, and printed in color for easy reading.

▶ To order, visit www.immunize.org/shop, or use the order form on page 24.

Quantity discounts are available.



Schedules: $7.50 each

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Vaccine Highlights

Recommendations, schedules, and more

Editor's note: The information in Vaccine Highlights is current as of November 2, 2015.

Next ACIP meetings

The Advisory Committee on Immunization Practices (ACIP) is comprised of 15 national experts who advise CDC on the appropriate use of vaccines. ACIP meets three times a year in Atlanta; meetings are open to the public and available online via live webcast. The next meetings will be held on February 24–25 and June 22–23, 2016. For more information, visit www.cdc.gov/vaccines/acip. ACIP periodically issues recommendations on the use of vaccines; they are published and readily available in the *Morbidity and Mortality Weekly Report* (*MMWR*). Clinicians who vaccinate should have a current set for reference. Here are sources:

- Download from IAC's website: www.immunize.org/acip
- Download from CDC's website: www.cdc.gov/vaccines/hcp/acip-recs

In addition, extensive information on ACIP meetings is available at www.cdc.gov/vaccines/acip/meetings/meetings-info.html.

CDC news

In June 2015, CDC released the 13th edition of its book *Epidemiology and Prevention of Vaccine-Preventable Diseases* (also known as "The Pink Book"). Developed by CDC's National Center for Immunization and Respiratory Diseases, this edition provides updated immunization and vaccine information. All the sections of the "The Pink Book" (i.e., chapters, appendices) are available for download at no charge at www.cdc.gov/vaccines/pubs/pinkbook/index.html. Order the book from the Public Health Foundation for $40 (plus shipping and handling) at http://bookstore.phf.org/Default.aspx?TabID=251&productId=27876.

CDC offers an accompanying 15-part webinar series to provide a chapter-by-chapter overview of the 13th edition of "The Pink Book"). Access the webinar series at www.cdc.gov/vaccines/ed/webinar-epv/index.html.

In July, CDC released *CDC Health Information for International Travel 2016* (also known as "The Yellow Book"). The book is published every two years as a reference for those who advise international travelers about health risks. Access the 2016 edition of "The Yellow Book" online at www nc.cdc.gov/travel/page/yellowbook-home. The book is also available for sale from Oxford University Press and other major online booksellers.

CDC's 47th National Immunization Conference is scheduled to be held on September 13–15, 2016, in Atlanta. For more information, visit www.cdc.gov/vaccines/events/nic/index.html.

AAP news

The newly revised and updated *Red Book: 2015 Report of the Committee on Infectious Diseases*, 30th edition (American Academy of Pediatrics), is now available on Red Book Online at http://redbook.solutions.aap.org. Members of AAP receive Red Book Online as a free member benefit.

Influenza vaccine news

National Influenza Vaccination Week (NIVW) will be held this year on December 6–12. For more information, visit www.cdc.gov/flu/nivw.

On August 7, CDC published "Prevention and Control of Influenza with Vaccines: Recommendations of the ACIP—U.S., 2015–16 Influenza Season" in *MMWR*. Access the full recommendations for the 2015–16 influenza season at www.cdc.gov/mmwr/pdf/wk/mm6430.pdf, pages 818–25.

On August 7, CDC issued two updated influenza Vaccine Information Statements (VISs). The VIS for inactivated influenza vaccine (IIV) is intended for use with all injectable formulations. The VIS for live attenuated influenza vaccine (LAIV) is intended for use when administering nasal spray vaccine. Access the IIV VIS in English and many translations at www.immunize.org/vis/vis_flu_inactive.asp. The LAIV VIS and its translations are available at www.immunize.org/vis/vis_flu_live.asp. Influenza VISs released this year are not season specific and you will be able to use them for future influenza seasons as well.

To obtain VISs in up to 40 languages, visit www.immunize.org/vis.

On September 7, the American Academy of Pediatrics (AAP) issued two immunization policy statements online: 1) "Influenza Immunization for All Health Care Personnel: Keep It Mandatory" at http://pediatrics.aappublications.org/content/early/2015/09/01/peds.2015-2922.full.pdf+html, and 2) "Recommendations for Prevention and Control of Influenza in Children, 2015–2016" at http://pediatrics.aappublications.org/content/early/2015/09/01/peds.2015-2920.full.pdf+html.

IAC EXPRESS

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www.immunize.org/subscribe

Meningococcal vaccine news

On October 23, CDC published "Use of Serogroup B Meningococcal Vaccines in Adolescents and Young Adults: Recommendations of the ACIP, 2015" in *MMWR*. Access the recommendations at www.cdc.gov/mmwr/pdf/wk/mm6441.pdf, pages 1171–6.

On June 12, CDC published "Use of Serogroup B Meningococcal Vaccines in Persons Aged ≥10 Years at Increased Risk for Serogroup B Meningococcal Disease: Recommendations of the ACIP, 2015" in *MMWR*. Access the recommendations at www.cdc.gov/mmwr/pdf/wk/mm6422.pdf, pages 608–12.

On August 14, CDC released a new VIS for use with serogroup B meningococcal vaccines (MenB). Access the MenB VIS and its translations at www.immunize.org/vis/vis_meningococcal_b.asp.

Current VIS dates

Check the dates on your supply of Vaccine Information Statements (VISs). If any are outdated, get current versions and VISs in more than 30 languages at www.immunize.org/vis.

Adenovirus	6/11/14	MMR	4/20/12
Anthrax	3/10/10	MMRV	5/21/10
Chickenpox	3/13/08	Multi-vaccine	10/22/14
DTaP	5/17/07	PCV13	2/27/13
Hib	4/2/15	PPSV	4/24/15
Hepatitis A	10/25/11	Polio	11/8/11
Hepatitis B	2/2/12	Rabies	10/6/09
HPV-Cervarix	5/3/11	Rotavirus	4/15/15
HPV-Gardasil	5/17/13	Shingles	10/6/09
HPV-Gardasil 9	4/15/15	Td	2/24/15
Influenza	8/7/15	Tdap	2/24/15
Japanese enceph.	1/24/14	Typhoid	5/29/12
MCV4/MPSV4	10/14/11	Yellow fever	3/30/11
MenB	8/14/15		

For a ready-to-print version of this table for posting in your practice, go to www.immunize.org/catg.d/p2029.pdf.

Vaccine Highlights…continued from page 4

More vaccine-related news

Pneumococcal: On September 4, CDC published "Intervals Between PCV13 and PPSV23 Vaccines: Recommendations of the ACIP" in *MMWR*. Access the recommendations at www.cdc.gov/mmwr/pdf/wk/mm6434.pdf, pages 944–947.

HPV: In July 2015, CDC released additional guidance for providers regarding 9-valent HPV vaccine (HPV9) in *MMWR*. Access the PDF document titled "Supplemental information and guidance for vaccination providers regarding use of 9-valent HPV vaccine,"at www.cdc.gov/hpv/downloads/9vHPV-guidance.pdf.

DTaP-IPV: On September 8, CDC published "Licensure of a Diphtheria and Tetanus Toxoids and Acellular Pertussis Adsorbed and Inactivated Poliovirus Vaccine and Guidance for Use as a Booster Dose" in *MMWR*. Access the CDC guidance at www.cdc.gov/mmwr/pdf/wk/mm6434.pdf, pages 948–9.

Hepatitis B: On October 9, CDC published "Update: Shortened Interval for Postvaccination Serologic Testing of Infants Born to Hepatitis B-Infected Mothers" in *MMWR*. The interval for testing is now age 9–12 months. (Previously it was 9–18 months.) For detailed information, visit www.cdc.gov/mmwr/pdf/wk/mm6439.pdf, pages 1118–1120.

Yellow Fever: On June 19, CDC published "Yellow Fever Vaccine Booster Doses: Recommendations of the ACIP, 2015" in *MMWR*. Access the recommendations at www.cdc.gov/mmwr/pdf/wk/mm6423.pdf, pages 647–50.

Immunization mandates news

On October 5, the American Academy of Family Physicians released its new policy that supports ending non-medical vaccination exemptions. The policy is available at www.aafp.org/about/policies/all/immunizations-exemptions.html.

At its annual meeting in June, the American Medical Association (AMA) adopted a new policy that supports ending non-medical exemptions to immunization mandates. Access a related press release at www.ama-assn.org/ama/pub/news/news/2015/2015-06-08-tighter-limitations-immunization-opt-outs.page.

On June 30, California Governor Edmund (Jerry) Brown signed a bill into law (SB 277) requiring all California children without a medical exemption to be fully vaccinated in order to attend public or private school, eliminating personal and religious belief exemptions. Access Governor Brown's signing statement at www.gov.ca.gov/docs/SB_277_Signing_Message.pdf.

Vaccine coverage news

On September 18, CDC published the following articles about influenza vaccination coverage during the 2014–15 influenza season in *MMWR*:

- Influenza Vaccination Coverage Among Health Care Personnel—U.S., 2014–15 Influenza Season
- Influenza Vaccination Coverage Among Pregnant Women—U.S., 2014–15 Influenza Season
- Announcements: Available Online: Final 2014–15 Influenza Vaccination Coverage Estimates for Selected Local Areas, States, and the U.S.

Access the articles at www.cdc.gov/mmwr/pdf/wk/mm6436.pdf, pages 993–9, 1000–5, and 1017, respectively.

On August 28, CDC published the following articles about childhood vaccination coverage in *MMWR*:

- National, State, and Selected Local Area Vaccination Coverage Among Children Aged 19–35 Months—U.S., 2014
- Vaccination Coverage Among Children in Kindergarten—U.S., 2014–15 School Year

Access the articles at www.cdc.gov/mmwr/pdf/wk/mm6433.pdf, pages 889–96, and 897–904, respectively.

On July 31, CDC published "National, Regional, State, and Selected Local Area Vaccination Coverage Among Adolescents Aged 13–17 Years—U.S., 2014" in *MMWR*. Access the NIS-Teen data report at www.cdc.gov/mmwr/pdf/wk/mm6429.pdf, pages 784–792.

HHS news

On July 7, the National Vaccine Program Office (NVPO) announced the release of the *Annual Report of the State of the National Vaccine Plan* (2014). This report highlights accomplishments and progress of HHS agencies and offices, as well as the work of other partners across the immunization system toward meeting the goals and objectives in the 2010 National Vaccine Plan and Implementation Plan. Access the NVPO report at www.hhs.gov/nvpo/vacc_plan/annual-report-2014/nationalvaccineplan2014.pdf.

Apply for IAC's Influenza Vaccination Honor Roll

Join more than 500 health care settings already honored!

This honor roll recognizes health-care settings that have implemented mandatory vaccination policies for health care personnel (HCP).

To find the health care settings listed by state, visit www.immunize.org/honor-roll/influenza-mandates/honorees.asp

To read position statements supporting mandatory HCP vaccination from leading health care organizations and professional medical societies or to apply, visit www.immunize.org/honor-roll/influenza-mandates.

Apply for IAC's Hepatitis B Birth Dose Honor Roll

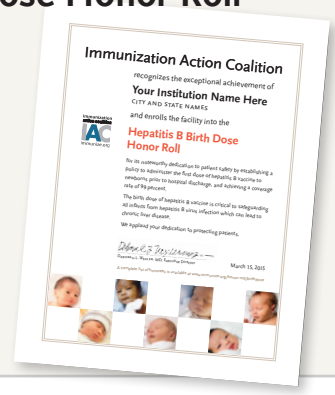
Join more than 200 hospitals already honored!

This honor roll recognizes hospitals and birthing centers that have attained high coverage rates for administering hepatitis B vaccine at birth.

To find hospitals listed by state, visit www.immunize.org/honor-roll/birthdose/honorees.asp

To find out more about the birth dose honor roll, visit www.immunize.org/honor-roll/birthdose

To apply, visit www.immunize.org/honor-roll/birthdose/apply.aspx



Coming soon to a city near you!

Portsmouth, Va.
November 10, 2015

Nashville, Tenn.
November 18, 2015

Little Rock, Ark.
November 19, 2015

San Francisco, Calif.
January 19, 2016

Sacramento, Calif.
January 20, 2016

Los Angeles, Calif.
January 22, 2016

San Diego, Calif.
January 23, 2016

Fort Worth, Tex.
February 16, 2016

San Antonio, Tex.
February 17, 2016

Houston, Tex.
February 19, 2016

Seattle, Wash.
March 15, 2016

Phoenix, Ariz.
March 17, 2016

Tucson, Ariz.
March 18, 2016

Orlando/Daytona Beach, Fla.
April 12, 2016

Fort Lauderdale, Fla.
April 13, 2016

Atlanta, Ga.
April 15, 2016

Boston, Mass.
June 6, 2016

New York, N.Y.
June 8, 2016

Philadelphia, Penn.
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Baltimore, Md.
June 11, 2016

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This free workshop is provided by the Immunization Action Coalition (IAC), with sponsorship from Pfizer, Inc.

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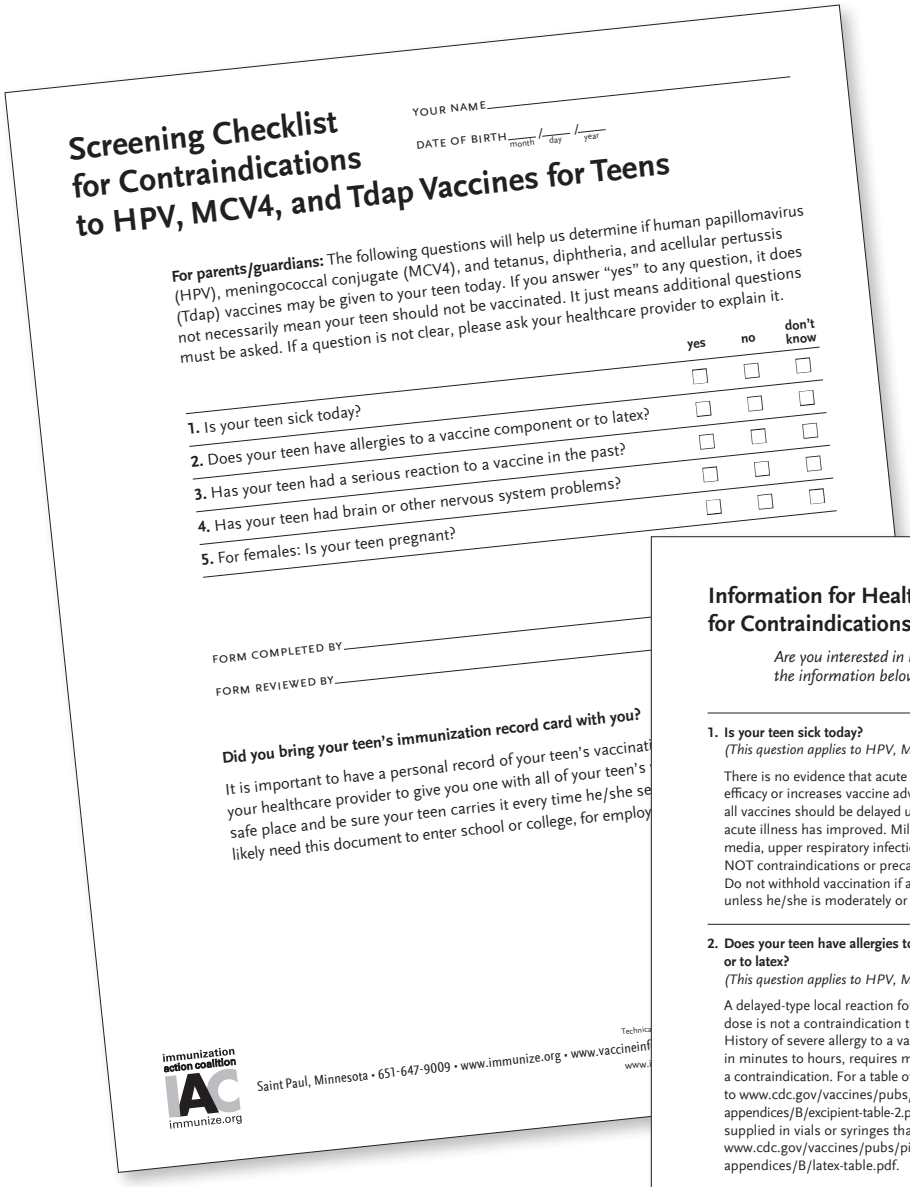
New! Screening Checklist for Preteen and Teen Vaccination – HPV, MCV4, and Tdap



Screening Checklist for Contraindications to HPV, MCV4, and Tdap Vaccines for Teens

YOUR NAME

DATE OF BIRTH ___/___/___ (month/day/year)

For parents/guardians: The following questions will help us determine if human papillomavirus (HPV), meningococcal conjugate (MCV4), and tetanus, diphtheria, and acellular pertussis (Tdap) vaccines may be given to your teen today. If you answer "yes" to any question, it does not necessarily mean your teen should not be vaccinated. It just means additional questions must be asked. If a question is not clear, please ask your healthcare provider to explain it.

	yes	no	don't know
1. Is your teen sick today?	☐	☐	☐
2. Does your teen have allergies to a vaccine component or to latex?	☐	☐	☐
3. Has your teen had a serious reaction to a vaccine in the past?	☐	☐	☐
4. Has your teen had brain or other nervous system problems?	☐	☐	☐
5. For females: Is your teen pregnant?	☐	☐	☐

FORM COMPLETED BY

FORM REVIEWED BY

Did you bring your teen's immunization record card with you?

It is important to have a personal record of your teen's vaccinati
your healthcare provider to give you one with all of your teen's
safe place and be sure your teen carries it every time he/she se
likely need this document to enter school or college, for employ

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- This checklist covers precautions and contraindications to three routinely recommended vaccinations for adolescents – HPV, MCV4, and Tdap.
- Patients or their parents complete the checklist on page 1.
- Page 2 provides detailed information for health care professionals about why each question is asked.

Information for Healthcare Professionals about the Screening Checklist for Contraindications to HPV, MCV4, and Tdap Vaccines for Teens

Are you interested in knowing why we included a certain question on the screening checklist? If so, read the information below. If you want to find out even more, consult the references listed at the end.

1. Is your teen sick today?
(This question applies to HPV, MCV4, Tdap.)

There is no evidence that acute illness reduces vaccine efficacy or increases vaccine adverse events.[1,2] However, all vaccines should be delayed until a moderate or severe acute illness has improved. Mild illnesses (such as otitis media, upper respiratory infections, and diarrhea) are NOT contraindications or precautions to vaccination. Do not withhold vaccination if a teen is taking antibiotics unless he/she is moderately or severely ill.

2. Does your teen have allergies to a vaccine component or to latex?
(This question applies to HPV, MCV4, Tdap.)

A delayed-type local reaction following a prior vaccine dose is not a contraindication to a subsequent dose. History of severe allergy to a vaccine component occurs in minutes to hours, requires medical attention, and is a contraindication. For a table of vaccine components, go to www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf. For a table of vaccines supplied in vials or syringes that contain latex, go to www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/latex-table.pdf.

3. Has your teen had a serious reaction to a vaccine in the past?
(This question applies to HPV, MCV4, Tdap.)

A local reaction following a prior vaccine dose is not a contraindication to a subsequent dose. However, history of an anaphylactic reaction (hives, swelling of the lips or tongue, acute respiratory distress, or collapse) following a previous dose of vaccine or vaccine component is a contraindication for subsequent doses.[1]

4. Has the teen had brain or other nervous system problems?
(This question applies to Tdap.)

Tdap is contraindicated in teens who have a history of encephalopathy within 7 days following DTP/DTaP. An unstable progressive neurologic problem is a precaution to the use of Tdap. Under normal circumstances, vaccines are deferred when a precaution is present. However, situations may arise when the benefit of vaccinating outweighs the risk (e.g., during a community pertussis outbreak). For teens with stable neurologic disorders (including seizures) unrelated to vaccination, or for those with a family history of seizures, vaccinate as usual. A history of Guillain-Barré syndrome (GBS) is a consideration with Td or Tdap: if GBS occurred within 6 weeks of receipt of a tetanus-containing vaccine and a decision is made to continue vaccination, give age-appropriate Tdap instead of Td if there is no history of a prior Tdap dose, to improve pertussis protection.

5. For females; Is your teen pregnant?
(This question applies to HPV.)

Teens who are pregnant should not be given HPV vaccine. However, pregnancy is not a contraindication or precaution for administering Tdap or MCV4 vaccine.

REFERENCES

1. CDC. *General Recommendations on Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP)* at www.cdc.gov/vaccines/pubs/acip-list.htm.
2. AAP. *Red Book: Report of the Committee on Infectious Diseases* at www.aapredbook.org.

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www.immunize.org/catg.d/p4062.pdf • Item #P4062 – page 2 (6/15)

Visit www.immunize.org/catg.d/p4062.pdf

It's Federal Law! You must give your patients current Vaccine Information Statements

It's Federal Law! You must give your patients current Vaccine Information Statements (VISs)

What are Vaccine Information Statements (VISs)?

Vaccine Information Statements (VISs) are documents produced by the Centers for Disease Control and Prevention (CDC), in consultation with panels of experts and parents, to properly inform vaccinees (or their parents/legal representatives) about the risks and benefits of each vaccine. VISs are not meant to replace interactions with health care providers, who should address any questions or concerns that the vaccinee (or parent/legal representative) may have.

Using VISs is legally required!

Federal law (under the National Childhood Vaccine Injury Act) requires a health care provider to give a copy of the current VIS to an adult patient or to a child's parent/legal representative before vaccinating an adult or child with a dose of the following vaccines: diphtheria, tetanus, pertussis, measles, mumps, rubella, polio, hepatitis A, hepatitis B, *Haemophilus influenzae* type b (Hib), influenza, pneumococcal conjugate, meningococcal, rotavirus, human papillomavirus (HPV), or varicella (chickenpox only).

Where to get VISs

All available VISs can be downloaded from the websites of the Immunization Action Coalition at www.immunize.org/vis or CDC at www.cdc.gov/vaccines/hcp/vis/index.html. Ready-to-copy versions may also be available from your state or local health department.

Translations: You can find VISs in more than 30 languages on the Immunization Action Coalition website at www.immunize.org/vis.

To obtain translations of VIS in languages other than English, go to www.immunize.org/vis.

According to CDC, the appropriate VIS must be given:

- ▶Prior to the vaccination (and prior to each dose of a multi-dose series);
- ▶Regardless of the age of the vaccinee;
- ▶Regardless of whether the vaccine is given in a public or private health care setting.

Top 10 Facts About VISs

FACT 1 **It's federal law! You must give current VISs to all your patients before vaccinating them.**

Federal law requires that VISs must be used for patients of **ALL ages** when administering these vaccines:

- DTaP (includes DT)
- Td and Tdap
- Hib
- hepatitis A
- hepatitis B
- HPV
- influenza (inactivated and live, intranasal vaccines)
- MMR and MMRV
- meningococcal
- pneumococcal conjugate
- polio
- rotavirus
- varicella (chickenpox)

For the vaccines not covered under the National Childhood Vaccine Injury Act (i.e., adenovirus, anthrax, Japanese encephalitis, pneumococcal polysaccharide, rabies, shingles, typhoid, and yellow fever), providers are not required by federal law to use VISs unless they have been purchased under CDC contract. However, CDC recommends that VISs be used whenever these vaccines are given.

FACT 2 **VISs can be given to patients in a variety of ways.**

In most medical settings, VISs are provided to patients (or their parents/legal representatives) in paper form. However, VISs also may be provided using electronic media. Regardless of the format used, the goal is to provide a current VIS just prior to vaccination.

CONTINUED ON NEXT PAGE ▶

Most current versions of VISs (table)

As of August 14, 2015, the most recent versions of the VISs are as follows:

Adenovirus	6/11/14
Anthrax	3/10/10
Chickenpox	3/13/08
DTaP	5/17/07
Hib	4/2/15
Hepatitis A	10/25/11
Hepatitis B	2/2/12
HPV-Cervarix	5/3/11
HPV-Gardasil	5/17/13
HPV-Gardasil 9	4/15/15
Influenza	8/7/15
Japanese enceph	1/24/14
MCV4/MPSV4	10/14/11
MenB	8/14/15
MMR	
MMRV	
Multi-vaccin	
PCV13	
PPSV	
Polio	
Rabies	
Rotavirus	
Shingles	
Td	
Tdap	
Typhoid	
Yellow fev	

A handy list of current VIS dates is also available at www.immunize.org/catg.d/p2029.pdf.

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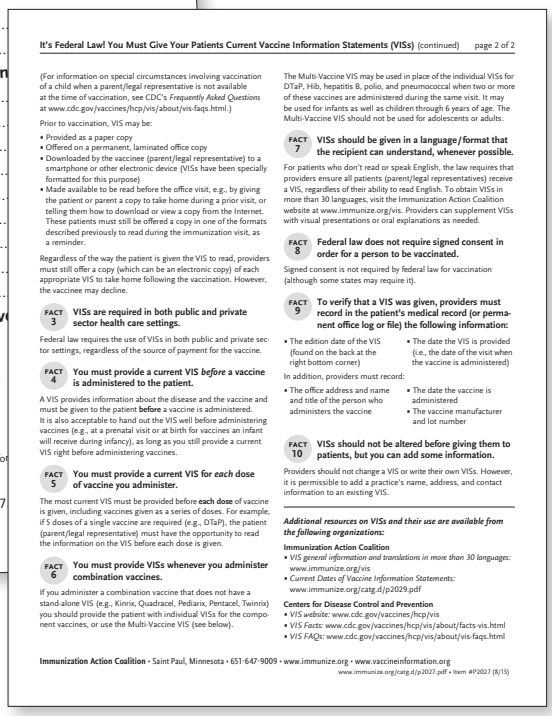
Technical content reviewed by the Centers for

www.immunize.org/catg.d/p2027

- Share with staff in your medical setting!
- Fully updated and redesigned to reflect new VIS dates
- Provides new information about the use of VISs and the ways they can be distributed.



It's Federal Law! You Must Give Your Patients Current Vaccine Information Statements (VISs) (continued) page 2 of 2

(For information on special circumstances involving vaccination of a child when a parent/legal representative is not available at the time of vaccination, see CDC's *Frequently Asked Questions* at www.cdc.gov/vaccines/hcp/vis/about/vis-faqs.html.)

Prior to vaccination, VIS may be:

- Provided as a paper copy
- Offered on a permanent, laminated office copy
- Downloaded by the vaccinee (parent/legal representative) to a smartphone or other electronic device (VISs have been specially formatted for this purpose)
- Made available to be read before the office visit, e.g., by giving the patient or parent a copy to take home during a prior visit, or telling them how to download or view a copy from the Internet. These patients must still be offered a copy in one of the formats described previously to read during the immunization visit, as a reminder.

Regardless of the way the patient is given the VIS to read, providers must still offer a copy (which can be an electronic copy) of each appropriate VIS to take home following the vaccination. However, the vaccinee may decline.

FACT 3 **VISs are required in both public and private sector health care settings.**

Federal law requires the use of VISs in both public and private sector settings, regardless of the source of payment for the vaccine.

FACT 4 **You must provide a current VIS *before* a vaccine is administered to the patient.**

A VIS provides information about the disease and the vaccine and must be given to the patient **before** a vaccine is administered. It is also acceptable to hand out the VIS well before administering vaccines (e.g., at a prenatal visit or at birth for vaccines an infant will receive during infancy), as long as you still provide a current VIS right before administering vaccines.

FACT 5 **You must provide a current VIS for *each* dose of vaccine you administer.**

The most current VIS must be provided before **each dose** of vaccine is given, including vaccines given as a series of doses. For example, if 5 doses of a single vaccine are required (e.g., DTaP), the patient (parent/legal representative) must have the opportunity to read the information on the VIS before each dose is given.

FACT 6 **You must provide VISs whenever you administer combination vaccines.**

If you administer a combination vaccine that does not have a stand-alone VIS (e.g., Kinrix, Quadracel, Pediarix, Pentacel, Twinrix) you should provide the patient with individual VISs for the component vaccines, or use the Multi-Vaccine VIS (see below).

The Multi-Vaccine VIS may be used in place of the individual VISs for DTaP, Hib, hepatitis B, polio, and pneumococcal when two or more of these vaccines are administered during the same visit. It may be used for infants as well as children through 6 years of age. The Multi-Vaccine VIS should not be used for adolescents or adults.

FACT 7 **VISs should be given in a language/format that the recipient can understand, whenever possible.**

For patients who don't read or speak English, the law requires that providers ensure all patients (parent/legal representatives) receive a VIS, regardless of their ability to read English. To obtain VISs in more than 30 languages, visit the Immunization Action Coalition website at www.immunize.org/vis. Providers can supplement VISs with visual presentations or oral explanations as needed.

FACT 8 **Federal law does not require signed consent in order for a person to be vaccinated.**

Signed consent is not required by federal law for vaccination (although some states may require it).

FACT 9 **To verify that a VIS was given, providers must record in the patient's medical record (or permanent office log or file) the following information:**

- The edition date of the VIS (found on the back at the right bottom corner)
- The date the VIS is provided (i.e., the date of the visit when the vaccine is administered)

In addition, providers must record:

- The office address and name and title of the person who administers the vaccine
- The date the vaccine is administered
- The vaccine manufacturer and lot number

FACT 10 **VISs should not be altered before giving them to patients, but you can add some information.**

Providers should not change a VIS or write their own VISs. However, it is permissible to add a practice's name, address, and contact information to an existing VIS.

Additional resources on VISs and their use are available from the following organizations:

Immunization Action Coalition

- *VIS general information and translations in more than 30 languages:* www.immunize.org/vis
- *Current Dates of Vaccine Information Statements:* www.immunize.org/catg.d/p2029.pdf

Centers for Disease Control and Prevention

- *VIS website:* www.cdc.gov/vaccines/hcp/vis
- *VIS Facts:* www.cdc.gov/vaccines/hcp/vis/about/facts-vis.html
- *VIS FAQs:* www.cdc.gov/vaccines/hcp/vis/about/vis-faqs.html

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www.immunize.org/catg.d/p2027.pdf • Item #P2027 (8/15)

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Summary of Recommendations for Child/Teen Immunization (Age birth through 18 years)

Vaccine name and route	Schedule for routine vaccination and other guidelines (any vaccine can be given with another, unless otherwise noted)	Schedule for catch-up vaccination and related issues	Contraindications and precautions (mild illness is not a contraindication)
Hepatitis B (HepB) *Give IM*	• Vaccinate all children age 0 through 18 yrs. • Vaccinate all newborns with monovalent vaccine prior to hospital discharge. Give dose #2 at age 1–2m and the final dose at age 6–18m (the last dose in the infant series should not be given earlier than age 24 wks). After the birth dose, the series may be completed using 2 doses of single-antigen vaccine (ages 1–2m, 6–18m) or up to 3 doses of Comvax (ages 2m, 4m, 12–15m) or with 3 doses of Pediarix (ages 2m, 4m, 6m), which may result in giving a total of 4 doses of hepatitis B vaccine. • **If mother is HBsAg-positive:** Give the newborn HBIG and dose #1 within 12 hrs of birth; complete series by age 6m. • **If mother's HBsAg status is unknown:** Give the newborn dose #1 within 12 hrs of birth. If low birth weight (less than 2000 grams), also give HBIG within 12hrs. For infants weighing 2000 grams or more whose mother is subsequently found to be HBsAg positive, give the infant HBIG ASAP (no later than age 7d) and follow HepB immunization schedule for infants born to HBsAg-positive mothers.	• Do not restart series, no matter how long since previous dose. • 3-dose series can be started at any age. • Minimum intervals between doses: 4 wks between #1 and #2, 8 wks between #2 and #3, and at least 16 wks between #1 and #3. **Special Notes on Hepatitis B Vaccine (HepB)** **Dosing of HepB:** Monovalent vaccine brands are interchangeable. For people age 0 through 19 yrs, give 0.5 mL of either Engerix-B or Recombivax HB. **Alternative dosing schedule for unvaccinated adolescents age 11 through 15 yrs:** Give 2 doses Recombivax HB 1.0 mL (adult formulation) spaced 4–6m apart. (Engerix-B is not licensed for a 2-dose schedule.)	**Contraindication** Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. **Precautions** • Moderate or severe acute illness. • For infants who weigh less than 2000 grams, see ACIP recommendations at www.cdc.gov/mmwr/PDF/rr/rr5416.pdf.
DTaP, DT (Diphtheria, tetanus, acellular pertussis) *Give IM*	• Give to children at ages 2m, 4m, 6m, 15–18m, and 4–6 yrs. • May give dose #1 as early as age 6 wks. • May give #4 as early as age 12m if 6m have elapsed since #3. • Do not give DTaP/DT to children age 7 yrs and older. • If possible, use the same DTaP product for all doses.	• Dose #2 and #3 may be given 4 wks after previous dose. • Dose#4 may be given 6m after #3. • If dose #4 is given before 4th birthday, wait at least 6m for #5 (age 4–6 yrs). • If dose #4 is given after 4th birthday, #5 is not needed.	**Contraindications** • Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. • For all pertussis-containing vaccines: Encephalopathy not attributable to an identifiable cause, within 7d after DTP/DTaP/Tdap. **Precautions** • Moderate or severe acute illness. • History of arthus reaction following a prior dose of tetanus or diphtheria toxoid-containing vaccine; defer vaccination until at least 10 yrs have elapsed since the last tetanus toxoid-containing vaccine. • Guillain-Barré syndrome (GBS) within 6 wks after previous dose of tetanus toxoid-containing vaccine. • For DTaP only: Any of these events following a previous dose of DTP/DTaP: 1) temperature of 105°F (40.5°C) or higher within 48 hrs; 2) continuous crying for 3 hrs or more within 48 hrs; 3) collapse or shock-like state within 48 hrs; 4) seizure within 3d. • For all pertussis-containing vaccines: Progressive or unstable neurologic disorder, uncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized.
Td, Tdap (Tetanus, diphtheria, acellular pertussis) *Give IM*	• For children and teens lacking previous Tdap: Give Tdap routinely at age 11–12 yrs and vaccinate older teens on a catch-up basis; then boost every 10 yrs with Td. • Make special efforts to give Tdap to children and teens who are (1) in contact with infants younger than age 12m and, (2) health care workers with direct patient contact. • Give Tdap to pregnant adolescents during each pregnancy (preferred during 27–36 weeks' gestation), regardless of interval since prior Td or Tdap.	• DTaP and DT should not be used for children age 7 yrs and older; use Td and Tdap instead. • Children as young as age 7 yrs and teens who are unvaccinated or behind schedule should complete a primary Td series (3 doses, with an interval of 1–2m between dose #1 and #2, and an interval of 6–12m between dose #2 and #3); substitute Tdap for any dose in the series, preferably as dose #1. • Tdap should be given regardless of interval since previous Td.	

This document was adapted from the recommendations of the Advisory Committee on Immunization Practices (ACIP). To obtain copies of these recommendations, visit CDC's website at www.cdc.gov/vaccines/hcp/ACIP-recs/index.html or visit the Immunization Action Coalition (IAC) website at www.immunize.org/acip.

This table is revised periodically. Visit IAC's website at www.immunize.org/childrules to make sure you have the most current version.

For the purposes of calculating intervals between doses, 4 weeks = 28 days. Intervals of 4 months or greater are determined by calendar months.

A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses.

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www.immunize.org/catg.d/p2010.pdf • Item #P2010 (9/15)

Summary of Recommendations for Child/Teen Immunization (Age birth through 18 years) (Page 2 of 5)

Vaccine name and route	Schedule for routine vaccination and other guidelines (any vaccine can be given with another, unless otherwise noted)	Schedule for catch-up vaccination and related issues	Contraindications and precautions (mild illness is not a contraindication)
Rotavirus (RV) *Give orally*	• Rotarix (RV1): give at ages 2m, 4m. • RotaTeq (RV5): give at ages 2m, 4m, 6m. • May give dose #1 as early as age 6 wks. • Give final dose no later than age 8m–0d.	• Do not begin series in infants older than age 14 wks 6 days. • Intervals between doses may be as short as 4 wks. • If prior vaccination included use of different or unknown brand(s), a total of 3 doses should be given.	**Contraindications** • Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. If allergy to latex, use RV5. • History of intussusception. • Diagnosis of severe combined immunodeficiency (SCID). **Precautions** • Moderate or severe acute illness. • Altered immunocompetence other than SCID. • Chronic gastrointestinal disease. • For RV1 only, spina bifida or bladder exstrophy.
Varicella (Var) (Chickenpox) *Give Subcut*	• Give dose #1 at age 12–15m. • Give dose #2 at age 4–6 yrs. Dose #2 of Var or MMRV may be given earlier if at least 3m since dose #1. If the 2nd dose was given at least 4 wks after 1st dose, it can be accepted as valid. • Give a 2nd dose to all older children/teens with history of only 1 dose. • MMRV may be used in children age 12m through 12 yrs (see note below).	• If younger than age 13 yrs, space dose #1 and #2 at least 3m apart. If age 13 yrs or older, space at least 4 wks apart. • May use as postexposure prophylaxis if given within 5d. • If Var and either MMR, LAIV, and/or yellow fever vaccine are not given on the same day, space them at least 28d apart.	**Contraindications** • Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. • Pregnancy or possibility of pregnancy within 4 wks. • Children on high-dose immunosuppressive therapy or who are immunocompromised because of malignancy and primary or acquired immunodeficiency, including HIV/AIDS (although vaccination may be considered if CD4+ T-lymphocyte percentages are 15% or greater in children age 1 through 8 yrs or 200 cells/μL in children age 9 yrs and older) **Precautions** • Moderate or severe acute illness. • If blood, plasma, and/or immune globulin (IG or VZIG) were given in past 11m, see ACIP's *General Recommendations on Immunization*[1] regarding time to wait before vaccinating. • Receipt of specific antivirals (i.e., acyclovir, famciclovir, or valacyclovir) 24 hrs before vaccination, if possible; delay resumption of these antiviral drugs for 14d after vaccination. • For MMRV only, personal or family (i.e., sibling or parent) history of seizures. **NOTE:** For patients with humoral immunodeficiency or leukemia, see ACIP recommendations at www.cdc.gov/mmwr/pdf/rr/rr5604.pdf.
MMR (Measles, mumps, rubella) *Give Subcut*	• Give dose #1 at age 12–15m. • Give MMR at age 6–11m if traveling internationally; revaccinate with 2 doses of MMR at age 12–15m and at least 4 wks later. The dose given at younger than 12m does not count toward the 2-dose series. • Give dose #2 at age 4–6 yrs. Dose #2 may be given earlier if at least 4 wks since dose #1. For MMRV: dose #2 may be given earlier if at least 3m since dose #1. • Give a 2nd dose to all older children and teens with history of only 1 dose. • MMRV may be used in children age 12m through 12 years (see note above).	• If MMR and either Var, LAIV, and/or yellow fever vaccine are not given on the same day, space them at least 28d apart. • When using MMR for both doses, minimum interval is 4 wks. • When using MMRV for both doses, minimum interval is 3m. • May use as postexposure prophylaxis if given within 3d.	**Contraindications** • Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. • Pregnancy or possibility of pregnancy within 4 wks. • Severe immunodeficiency (e.g., hematologic and solid tumors; receiving chemotherapy; congenital immunodeficiency; long-term immunosuppressive therapy, or severely symptomatic HIV). **NOTE:** HIV infection is NOT a contraindication to MMR for children who are not severely immunocompromised (see ACIP recommendations at www.cdc.gov/mmwr/pdf/rr/rr6204.pdf). Vaccination is recommended if indicated for 1) children age 12m through 5 yrs whose CD4+ T-lymphocyte percentage has been greater than 15% for at least 6m or 2) for children age 6 yrs and older whose CD4+ T-lymphocyte counts have been 200 cells/μL or greater for at least 6m. **Precautions** • Moderate or severe acute illness. • If blood, plasma, or immune globulin given in past 11m, see ACIP's *General Recommendations on Immunization*[1] regarding time to wait before vaccinating. • History of thrombocytopenia or thrombocytopenic purpura. • For MMRV only, personal or family (i.e., sibling or parent) history of seizures. • Need for tuberculin skin testing (TST). If TST needed, give TST before or on same day as MMR, or give TST 4 wks following MMR.

NOTE: For the first dose of MMR and varicella given at age 12–47m, either MMR and Var or MMRV may be used. Unless the parent or caregiver expresses a preference for MMRV, CDC recommends that MMR and Var be used for the first doses in this age group.

1 CDC. General Recommendations on Immunization–Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2011;60(No. RR-2):39.

(Child/Teen Schedule, page 2 of 5)

Summary of Recommendations for Child/Teen Immunization (Age birth through 18 years)

Vaccine name and route	Schedule for routine vaccination and other guidelines (any vaccine can be given with another, unless otherwise noted)	Schedule for catch-up vaccination and related issues	Contraindications and precautions (mild illness is not a contraindication)
Pneumococcal conjugate (PCV13) *Give IM*	• Give at ages 2m, 4m, 6m, 12–15m (booster dose). • Dose #1 may be given as early as age 6 wks. • For age 24 through 59m and healthy: If unvaccinated or any incomplete schedule or if 4 doses of PCV7 or any other age-appropriate complete PCV7 schedule, give 1 supplemental dose of PCV13 at least 8 wks after the most recent dose. • For high-risk** children ages 2 through 5 yrs: Give 2 doses at least 8 wks apart if they previously received fewer than 3 doses; give 1 dose at least 8 wks after the most recent dose if they previously received 3 doses. • For high-risk** children: All recommended PCV13 doses should be given prior to PPSV vaccination. • PCV13 is not routinely given to healthy children age 5 yrs and older. ** **High-risk:** *For both PCV13 and PPSV,* those with sickle cell disease; anatomic or functional asplenia; chronic cardiac, pulmonary, or renal disease; diabetes; cerebrospinal fluid leaks; HIV infection; immunosuppression; diseases associated with immunosuppressive and/or radiation therapy; solid organ transplantation; or who have or will have a cochlear implant and, *for PPSV only,* alcoholism and/or chronic liver disease.	• When children are behind on PCV13 schedule, minimum interval for doses given to children younger than age 12m is 4 wks; for doses given at 12m and older, it is 8 wks. • **For age 7 through 11m:** If history of 0 doses, give 2 doses of PCV13, 4 wks apart, with a 3rd dose at age 12 –15m; if history of 1 or 2 doses, give 1 dose of PCV13 with a 2nd dose at age 12–15m at least 8 wks later. • **For age 12 through 23m:** If unvaccinated or history of 1 dose before age 12m, give 2 doses of PCV13 8 wks apart; if history of 1 dose at or after age 12m or 2 or 3 doses before age 12m, give 1 dose of PCV13 at least 8 wks after most recent dose; if history of 4 doses of PCV7 or other age-appropriate complete PCV7 schedule, give 1 supplemental dose of PCV13 at least 8 wks after the most recent dose. • **For age 2 through 5 yrs** and at high risk**: If unvaccinated or any incomplete schedule of 1 or 2 doses, give 2 doses of PCV13, 1 at least 8 wks after the most recent dose and another dose at least 8 wks later; if any incomplete series of 3 doses, or if 4 doses of PCV7 or any other age-appropriate complete PCV7 schedule, give 1 supplemental dose of PCV13 at least 8 wks after the most recent PCV7 dose. • **For children ages 6 through 18 yrs** with functional or anatomic asplenia (including sickle cell disease), HIV infection or other immunocompromising condition, cochlear implant, or CSF leak, give 1 dose of PCV13 if no previous history of PCV13.	**Contraindication** Previous severe allergic reaction (e.g., anaphylaxis) to a PCV vaccine, to any of its components, or to any diphtheria toxoid-containing vaccine. **Precaution** Moderate or severe acute illness.
Pneumococcal polysaccharide (PPSV) *Give IM or Subcut*	• Give 1 dose at least 8 wks after final dose of PCV13 to high-risk** children age 2 yrs and older. • For children who have sickle cell disease, functional or anatomic asplenia, HIV infection, or other immunocompromising condition, give a 2nd dose of PPSV 5 yrs after previous PPSV. (See ACIP pneumococcal recommendations at www.cdc.gov/mmwr/pdf/rr/rr5911.pdf.)		**Contraindication** Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. **Precaution** Moderate or severe acute illness.
Human papillomavirus (HPV) (HPV2, Cervarix) (HPV4, Gardasil) (HPV9, Gardasil 9) *Give IM*	• Give 3-dose series of either HPV2, HPV4, or HPV9 to girls at age 11–12 yrs on a 0, 1–2, 6m schedule. (May give as early as age 9 yrs.) • Give 3-dose series of only HPV4 or HPV9 to boys age 11–12 yrs on a 0, 1–2, 6m schedule. (May give as early as age 9 yrs.) • Give a 3-dose series of either HPV2, HPV4, or HPV9 to all older girls/women (through age 26 yrs) and 3-dose series of HPV4 or HPV9 to all older boys/men (through age 21 yrs) who were not previously vaccinated.	Minimum intervals between doses: 4 wks between #1 and #2; 12 wks between #2 and #3. Overall, there must be at least 24 wks between doses #1 and #3. Any HPV vaccine may be used to complete a series started with a different vaccine, but only HPV4 or HPV9 should be used for males.	**Contraindication** Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. **Precautions** • Moderate or severe acute illness. • Pregnancy.

Summary of Recommendations for Child/Teen Immunization (Age birth through 18 years)

Vaccine name and route	Schedule for routine vaccination and other guidelines (any vaccine can be given with another, unless otherwise noted)	Schedule for catch-up vaccination and related issues	Contraindications and precautions (mild illness is not a contraindication)
Hepatitis A (HepA) *Give IM*	• Give 2 doses spaced 6–18m apart to all children at age 1 yr (12–23m). • Vaccinate all previously unvaccinated children and adolescents age 2 yrs and older who – Want to be protected from HAV infection and lack a specific risk factor. – Live in areas where vaccination programs target older children. – Travel anywhere except U.S., W. Europe, N. Zealand, Australia, Canada, or Japan. – Have chronic liver disease, clotting factor disorder, or are adolescent males who have sex with other males. – Use illicit drugs (injectable or non-injectable). – Anticipate close personal contact with an international adoptee from a country of high or intermediate endemicity during the first 60 days following the adoptee's arrival in the U.S.	• Minimum interval between doses is 6m. • Children who are not fully vaccinated by age 2 yrs can be vaccinated at a subsequent visit. • Administer 2 doses at least 6 months apart to previously unvaccinated persons who live in areas where vaccination programs target older children, or who are at increased risk for infection. • Give 1 dose as postexposure prophylaxis to incompletely vaccinated children and teens age 12m and older who have recently (during the past 2 wks) been exposed to hepatitis A virus.	**Contraindication** Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. **Precautions** • Moderate or severe acute illness.
Inactivated polio (IPV) *Give Subcut or IM*	• Give to children at ages 2m, 4m, 6–18m, 4–6 yrs. • May give dose #1 as early as age 6 wks. • Not routinely recommended for U.S. residents age 18 yrs and older (except certain travelers). For information on polio vaccination for international travelers, see wwwnc.cdc.gov/travel/diseases.	• The final dose should be given on or after the 4th birthday and at least 6m from the previous dose. • If dose #3 is given after 4th birthday, dose #4 is not needed if dose #3 is given at least 6m after dose #2.	**Contraindication** Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. **Precautions** • Moderate or severe acute illness. • Pregnancy.
Influenza Inactivated influenza* vaccine (IIV) *Give IM* * includes recombinant influenza vaccine (RIV3) for teens ages 18 yrs and older ——— Live attenuated influenza vaccine (LAIV) *Give NAS (intranasally)*	• Vaccinate all children and teens age 6m and older. • LAIV may be given to healthy children ages 2 through 8 yrs; it may be given to non-pregnant people through age 49 yrs who lack a contraindication or precaution. • Give 2 doses of age-appropriate vaccine, spaced 4 wks apart, to children age 6m through 8 yrs who 1) are first-time vaccinees, or 2) have received only one lifetime dose previous to this current season (season runs July to June) • For IIV, give 0.25 mL dose to children age 6–35m and 0.5 mL dose if age 3 yrs and older. • For teens age 18 years and older, intradermal vaccine (Fluzone Intradermal) may be used. • If LAIV and either MMR, Var, and/or yellow fever vaccine are not given on the same day, space them at least 28d apart.		**Contraindications** • Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine, to any of its components, including egg protein. **NOTE:** People age 18 yrs and older with egg allergy of any severity can receive the recombinant influenza vaccine (RIV3) (Flublok). RIV3 does not contain any egg protein. For children/teens who experience only hives with exposure to eggs, give IIV with additional safety precautions (i.e., observe patients for 30 minutes after receipt of vaccine for signs of a reaction). • For LAIV only: Age younger than 2 yrs; pregnancy; immunosuppression (including that caused by medications or HIV); for children and teens ages 6m through 18 yrs, current long-term aspirin therapy; for children age 2 through 4 yrs, wheezing or asthma within the past 12m, per health-care provider statement. Receipt of specific antivirals (i.e., amantadine, rimantadine, zanamivir, or oseltamivir) 48 hrs before vaccination. Avoid use of these antiviral drugs for 14d after vaccination. **Precautions** • Moderate or severe acute illness. • History of Guillain-Barré syndrome (GBS) within 6 wks of a previous influenza vaccination. • For LAIV only: Chronic pulmonary (including asthma in children age 5 yrs and older), cardiovascular (except hypertension), renal, hepatic, neurological/neuromuscular, hematologic or metabolic (including diabetes) disorders.

(Child/Teen Schedule, page 4 of 5)

Summary of Recommendations for Child/Teen Immunization (Age birth through 18 years)

Vaccine name and route	Schedule for routine vaccination and other guidelines (any vaccine can be given with another, unless otherwise noted)	Schedule for catch-up vaccination and related issues	Contraindications and precautions (mild illness is not a contraindication)
Hib (*Haemophilus influenzae* type b) *Give IM*	• ActHib (PRP-T): give at age 2m, 4m, 6m, 12–15m (booster dose). • PedvaxHIB or Comvax (containing PRP-OMP): give at age 2m, 4m, 12–15m (booster dose). • Dose #1 of Hib vaccine should not be given earlier than age 6 wks. • Give final dose (booster dose) no earlier than age 12m and a minimum of 8 wks after the previous dose. • Hib vaccines are interchangeable; however, if different brands of Hib vaccines are administered for dose #1 and dose #2, a total of 3 doses is necessary to complete the primary series in infants, followed by a booster after age 12m. • For vaccination of children 12 through 59m who are immunocompromised (immunoglobulin deficiency, complement component deficiency, HIV infection, receipt of chemotherapy or radiation therapy for cancer) or asplenic: if previously received no doses or only 1 dose before age 12m, give 2 additional doses at least 8 wks apart; if previously received 2 or more doses before age 12m, give 1 additional dose. • Hib is not routinely given to healthy children age 5 yrs and older. • 1 dose of Hib vaccine should be administered to children age 5 years and older who have anatomic or functional asplenia (including sickle cell disease) and who have not received a primary series and booster dose or at least 1 dose of Hib vaccine after age 14m. • 1 dose of Hib vaccine should be administered to unvaccinated persons 5 through 18 years of age with HIV infection. • Hiberix is approved ONLY for the booster dose at age 12m through 4 yrs.	**All Hib vaccines:** • If dose #1 was given at 12–14m, give booster in 8 wks. • Give only 1 dose to unvaccinated children ages 15–59m. **ActHib:** • Dose #2 and #3 may be given 4 wks after previous dose. • If dose #1 was given at age 7–11m, only 3 doses are needed; #2 is given at least 4 wks after #1, then final dose at age 12–15m (wait at least 8 wks after dose #2). **PedvaxHIB and Comvax:** • Dose #2 may be given 4 wks after #1. Recipients of hematopoietic stem cell transplant should receive 3 doses of Hib vaccine at least 4 wks apart beginning 6–12m after transplant, regardless of Hib vaccination history.	**Contraindications** • Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. • Age younger than 6 wks. **Precaution** Moderate or severe acute illness.
Meningococcal conjugate, quadrivalent (MCV4) Menactra and Menveo *Give IM* MenHibrix (contains Hib vaccine) *Give IM* — **Meningococcal polysaccharide** (MPSV4) Menomune *Give Subcut*	• Give a 2-dose series of MCV4 (Menactra or Menveo) with dose #1 routinely at age 11–12 yrs and dose #2 at age 16 yrs. • Give MCV4 to all unvaccinated teens age 13 through 18 yrs. If vaccinated at age 13–15 yrs, give dose #2 at age 16 through 18 yrs with a minimum interval of at least 8 wks between doses. • For college students, give 1 (initial) dose to unvaccinated first-year students age 19 through 21 yrs who live in residence halls; give dose #2 if most recent dose given when younger than age 16 yrs. • Give MenHibrix or Menveo to children age 2–18m with persistent complement component deficiency or anatomic/functional asplenia; give at ages 2, 4, 6, 12–15m. • For unvaccinated or partially vaccinated children age 7–23m with persistent complement component deficiency: 1) if age 7–23m and using Menveo, give a 2-dose series at least 3m apart with dose #2 given after age 12m or, 2) if age 9–23m and using Menactra, give a 2-dose series at least 3m apart. Give either brand of MCV4 to unvaccinated children age 24m and older with persistent complement component deficiency or anatomic or functional asplenia; give 2 doses, 2m apart. If Menactra is given, it must be separated by 4 wks from the final dose of PCV13. • Give age-appropriate series of meningococcal conjugate vaccine (brand must be licensed for age of child) to 1) children age 2m and older at risk during a community outbreak attributable to a vaccine serogroup and 2) children age 2m and older travelling to or living in countries with hyperendemic or epidemic meningococcal disease. Prior receipt of MenHibrix is not sufficient for children travelling to the meningitis belt or the Hajj.	• If previously vaccinated and risk of meningococcal disease persists, revaccinate with MCV4 in 3 yrs (if previous dose given when younger than age 7 yrs) or in 5 yrs (if previous dose given at age 7 yrs or older). Then, give additional booster doses every 5 yrs if risk continues. • When administering MCV4 to children and teens with HIV infection, give 2 initial doses, separated by 8 wks. • Minimum ages for MCV: 6 wks MenHibrix; 2m Menveo; 9m Menactra. See ACIP schedule footnotes for additional information on catch-up vaccination of high-risk persons and for MenHibrix.	**Contraindication** Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. **Precautions** Moderate or severe acute illness.
Meningococcal serogroup B (MenB) Bexsero and Trumenba *Give IM*	• Teens age 16 through 18 years as a Category B (permissive) recommendation (to allow for individual clinical decision-making). • Give MenB to children age 10 yrs and older with persistent complement component deficiencies, functional or anatomic asplenia, including sickle cell disease, or who are at risk during a community outbreak of serotype B.	• Give 2 doses of Bexsero, 1m apart, or 3 doses of Trumenba, on a 0, 2, and 6m schedule. • MenB vaccine may be given concomitantly with MCV4 vaccine. MenB brands are not interchangeable.	

(Child/Teen Schedule, page 5 of 5)

Summary of Recommendations for Adult Immunization (Age 19 years and older)

Vaccine name and route	People for whom vaccination is recommended	Schedule for vaccination administration (any vaccine can be given with another unless otherwise noted)	Contraindications and precautions (mild illness is not a contraindication)
Influenza Inactivated Influenza vaccine (IIV*) *Give IM or ID (intradermally)* * includes recombinant influenza vaccine (RIV3) Live attenuated influenza vaccine (LAIV) *Give NAS (intranasally)*	For people through age 18 years, consult "Summary of Recommendations for Child/Teen Immunization" at www.immunize.org/catg.d/p2010.pdf. • Vaccination is recommended for all adults. • LAIV (Flumist) is approved only for healthy nonpregnant people age 2–49 yrs. • Adults age 18 through 64 yrs may be given any intramuscular IIV product (Fluzone, Fluvirin, Afluria, Flucelvax), or the intradermal IIV product (Fluzone Intradermal), or RIV3 (FluBlok). • Adults age 18 through 64 yrs may be given intramuscular IIV (Afluria) with a needle and syringe or using a jet injector (Stratis). • Adults age 65 yrs and older may be given standard-dose IIV, or high-dose IIV (Fluzone High-Dose), or RIV3. **NOTE:** Health care personnel who care for severely immunocompromised persons (i.e., those who require care in a protective environment) should receive IIV rather than LAIV. For information on other contraindications and precautions to LAIV, see far right column.	• Give 1 dose every year in the fall or winter. • Begin vaccination services as soon as vaccine is available and continue until the supply is depleted. • Continue to give vaccine to unvaccinated adults throughout the influenza season (including when influenza activity is present in the community) and at other times when the risk of influenza exists. • If 2 or more of the following live virus vaccines are to be given – LAIV, MMR, Var, HZV, and/or yellow fever – they should be given on the same day. If they are not given on the same day, space them by at least 28d.	**Contraindications** • Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine, to any of its components, including egg protein. Adults with egg allergy of any severity may receive RIV or, adults who experience only hives with exposure to eggs may receive other IIV with additional safety precautions (i.e., observe patient for 30 minutes after receipt of vaccine for signs of a reaction). • For LAIV only: pregnancy; immunosuppression; receipt of specific antivirals (i.e., amantadine, rimantadine, zanamivir, or oseltamivir) within the previous 48hrs. Avoid use of these anti-viral drugs for 14d after vaccination. **Precautions** • Moderate or severe acute illness. • History of Guillain-Barré syndrome (GBS) within 6 wks following previous influenza vaccination. • For LAIV only: Chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, neurologic, hematologic, or metabolic (including diabetes) disorders; immunosuppression (including that caused by medications or HIV).
Td, Tdap (Tetanus, diphtheria, pertussis) *Give IM*	For people through age 18 years, consult "Summary of Recommendations for Child/Teen Immunization" at www.immunize.org/catg.d/ p2010.pdf. • All people who lack written documentation of a primary series consisting of at least 3 doses of tetanus- and diphtheria-toxoid-containing vaccine. • A booster dose of Td or Tdap may be needed for wound management, so consult ACIP recommendations.[1] **For Tdap only** • Adults who have not already received Tdap or whose Tdap history is not known. • Health care personnel of all ages. • Give Tdap to pregnant women during each pregnancy (preferred during 27–36 weeks' gestation), regardless of the interval since prior Td or Tdap.	• For people who are unvaccinated or behind, complete the primary Td series (3 doses with an interval of 1–2m between dose #1 and #2, and an interval of 6–12m between dose #2 and #3); substitute a one-time dose of Tdap for one of the doses in the series, preferably the first. • Give Td booster every 10 yrs after the primary series has been completed. • Tdap should be given regardless of interval since previous Td.	**Contraindications** • Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. • For Tdap only, history of encephalopathy not attributable to an identifiable cause, within 7d following DTP/DTaP, or Tdap. **Precautions** • Moderate or severe acute illness. • History of Guillain-Barré syndrome within 6wks following previous dose of tetanus-toxoid-containing vaccine. • History of arthus reaction following a prior dose of tetanus- or diphtheria-toxoid-containing vaccine (including MCV4); defer vaccination until at least 10 yrs have elapsed since the last tetanus toxoid-containing vaccine. • For pertussis-containing vaccines only, progressive or unstable neurologic disorder, uncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized.

1 CDC. Preventing Tetanus, Diphtheria, and Pertussis Among Adults: Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine. Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2006;55(RR-17):25.

This document was adapted from the recommendations of the Advisory Committee on Immunization Practices (ACIP). To obtain copies of these recommendations, visit CDC's website at www.cdc.gov/vaccines/hcp/ACIP-recs/index.html or visit the Immunization Action Coalition (IAC) website at www.immunize.org/acip.

This table is revised periodically. Visit IAC's website at www.immunize.org/adultrules to make sure you have the most current version.

For the purposes of calculating intervals between doses, 4 weeks = 28 days. Intervals of 4 months or greater are determined by calendar months.

A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses.

Summary of Recommendations for Adult Immunization (Age 19 years and older)

Vaccine name and route	People for whom vaccination is recommended	Schedule for vaccination administration (any vaccine can be given with another unless otherwise noted)	Contraindications and precautions (mild illness is not a contraindication)
MMR (Measles, mumps, rubella) *Give Subcut*	For people through age 18 years, consult "Summary of Recommendations for Child/Teen Immunization" at www.immunize.org/catg.d/p2010.pdf. • People born in 1957 or later (especially those born outside the U.S.) should receive at least 1 dose of MMR if they have no laboratory evidence of immunity to each of the 3 diseases or documentation of a dose given on or after the first birthday. • People in high-risk groups, such as health care personnel (paid, unpaid, or volunteer), students entering college and other post–high school educational institutions, and international travelers, should receive a total of 2 doses. • People born before 1957 are usually considered immune, but evidence of immunity (serology or documented history of 2 doses of MMR) should be considered for health care personnel. • Women of childbearing age who do not have acceptable evidence of rubella immunity or vaccination.	• Give 1 or 2 doses (see criteria in 1st and 2nd bullets in box to left). • If dose #2 is recommended, give it no sooner than 4 wks after dose #1. • If woman of childbearing-age is found to be rubella susceptible and is not pregnant, give 1 dose of MMR; if she is pregnant, the dose should be given postpartum. This includes women who have already received 1 or 2 doses of rubella-containing vaccine. • If 2 or more of the following live virus vaccines are to be given – LAIV, MMR, Var, HZV, and/or yellow fever – they should be given on the same day. If they are not given on the same day, space them by at least 28d. May use as post-exposure prophylaxis if given within 3d of exposure.	**Contraindications** • Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. • Pregnancy or possibility of pregnancy within 4 wks. • Severe immunodeficiency (e.g., hematologic and solid tumors; receiving chemotherapy; congenital immunodeficiency; long-term immunosuppressive therapy; or severely symptomatic HIV). **NOTE:** HIV infection is NOT a contraindication to MMR for those who are not severely immunocompromised (i.e., CD4+ T-lymphocyte counts are greater than or equal to 200 cells/μL) for 6 months.[1] **Precautions** • Moderate or severe acute illness. • If blood, plasma, and/or immune globulin were given in past 11m, see ACIP's *General Recommendations on Immunization*[2] regarding time to wait before vaccinating. • History of thrombocytopenia or thrombocytopenic purpura. **NOTE:** If TST (tuberculosis skin test) and MMR are both needed but not given on same day, delay TST for at least 4 wks after MMR.
Varicella (chickenpox) (Var) *Give Subcut*	For people through age 18 years, consult "Summary of Recommendations for Child/Teen Immunization" at www.immunize.org/catg.d/p2010.pdf. • All adults without evidence of immunity. **NOTE:** Evidence of immunity is defined as written documentation of 2 doses of varicella vaccine; a history of varicella disease or herpes zoster (shingles) based on health care-provider diagnosis; laboratory evidence of immunity or confirmation of disease; and/or birth in the U.S. before 1980, with the exceptions that follow. – Health care personnel (HCP) born in the U.S. before 1980 who do not meet any of the criteria above should be tested or given the 2-dose vaccine series. If testing indicates they are not immune, give the 1st dose of varicella vaccine immediately. Give the 2nd dose 4–8 wks later. – Pregnant women born in the U.S. before 1980 who do not meet any of the criteria above should either 1) be tested for susceptibility during pregnancy and if found susceptible, given the 1st dose of varicella vaccine postpartum before hospital discharge, or 2) not be tested for susceptibility and given the 1st dose of varicella vaccine postpartum before hospital discharge. Give the 2nd dose 4–8 wks later.	• Give 2 doses. • Dose #2 is given 4–8 wks after dose #1. • If dose #2 is delayed, do not start over. Just give dose #2. • If 2 or more of the following live virus vaccines are to be given – LAIV, MMR, Var, HZV, and/or yellow fever – they should be given on the same day. If they are not given on the same day, space them by at least 28d. • May use as postexposure prophylaxis if given within 5d of exposure.	**Contraindications** • Previous severe allergic reaction (e.g., anaphylaxis) anaphylactic reaction to this vaccine or to any of its components. • Pregnancy or possibility of pregnancy within 4 wks. • People on long-term immunosuppressive therapy or who are immunocompromised because of malignancy and primary or acquired immunodeficiency, including HIV/AIDS (although vaccination may be considered if CD4+ T-lymphocyte counts are greater than or equal to 200 cells/µL.[3]). • People with isolated B-lymphocyte deficiency may receive varicella vaccine. **Precautions** • Moderate or severe acute illness. • If blood, plasma, and/or immune globulin (IG or VZIG) were given in past 11m, see ACIP's *General Recommendations on Immunization*[2] regarding time to wait before vaccinating. • Receipt of specific antivirals (i.e., acyclovir, famciclovir, or valacyclovir) 24 hrs before vaccination, if possible; delay resumption of these antiviral drugs for 14d after vaccination.

1 CDC. Prevention of Measles, Rubella, Congenital Rubella Syndrome, and Mumps, 2013. Summary Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2013;62(No. RR-4):23.

2 CDC. General Recommendations on Immunization–Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2011;60(No. RR-2):39.

3 CDC. Prevention of Varicella. Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2007;56(No. RR-4):24–25.

Summary of Recommendations for Adult Immunization (Age 19 years and older)

Vaccine name and route	People for whom vaccination is recommended	Schedule for vaccination administration (any vaccine can be given with another unless otherwise noted)	Contraindications and precautions (mild illness is not a contraindication)
Hepatitis A (HepA) *Give IM* Brands may be used interchangeably.	For people through age 18 years, consult "Summary of Recommendations for Child/Teen Immunization" at www.immunize.org/catg.d/ p2010.pdf. • All adults who want to be protected from hepatitis A virus (HAV) infection. • People who travel or work anywhere EXCEPT the U.S., Western Europe, New Zealand, Australia, Canada, and Japan. • People with chronic liver disease; injecting and non-injecting drug users; men who have sex with men; people who receive clotting-factor concentrates; people who work with HAV in lab settings; food handlers when health authorities or private employers determine vaccination to be appropriate. • People who anticipate close personal contact with an international adoptee from a country of high or intermediate endemicity during the first 60 days following the adoptee's arrival in the U.S. • Postexposure: adults age 40 yrs or younger with recent (within 2 wks) exposure to HAV, give HepA. For people older than age 40 yrs with recent (within 2 wks) exposure to HAV, immune globulin is preferred over HepA vaccine.	• Give 2 doses, spaced 6–18m apart (depending on brand). • If dose #2 is delayed, do not repeat dose #1. Just give dose #2. For Twinrix (hepatitis A and B combination vaccine [GSK]) for patients age 18yrs and older only: give 3 doses on a 0, 1, 6m schedule. There must be at least 4wks between doses #1 and #2, and at least 5m between doses #2 and #3. An alternative schedule can also be used at 0, 7d, 21–30d, and a booster at 12m.	**Contraindication** Previous severe allergic reaction (e.g. anaphylaxis) to this vaccine or to any of its components. **Precautions** Moderate or severe acute illness.
Hepatitis B (HepB) *Give IM* Brands may be used interchangeably.	For people through age 18 years, consult "Summary of Recommendations for Child/Teen Immunization" at www.immunize.org/catg.d/p2010.pdf. • All adults who want to be protected from hepatitis B virus infection. • Household contacts and sex partners of HBsAg-positive people; injecting drug users; sexually active people not in a long-term, mutually monogamous relationship; men who have sex with men; people with HIV; people seeking STD evaluation or treatment; hemodialysis patients and those with renal disease that may result in dialysis; diabetics younger than age 60 yrs (diabetics age 60 yrs and older may be vaccinated at the clinician's discretion[1]; health care personnel and public safety workers who are exposed to blood; clients and staff of institutions for the developmentally disabled; inmates of long-term correctional facilities; certain international travelers; and people with chronic liver disease. **NOTE:** Provide serologic screening for immigrants from endemic areas. If patient is chronically infected, assure appropriate disease management. For sex partners and household contacts of HBsAg-positive people, provide serologic screening and administer initial dose of HepB vaccine at same visit.	Give 3 doses on a 0, 1, 6m schedule. • Alternative timing options for vaccination include 0, 2, 4m; 0, 1, 4m; and 0, 1, 2, 12m (Engerix brand only). • There must be at least 4 wks between doses #1 and #2, and at least 8 wks between doses #2 and #3. Overall, there must be at least 16 wks between doses #1 and #3. • Give adults on hemodialysis or with other immunocompromising conditions 1 dose of 40 µg/mL (Recombivax HB) at 0, 1, 6m or 2 doses of 20 µg/mL (Engerix-B) given simultaneously at 0, 1, 2, 6m. • **Schedule for those who have fallen behind:** If the series is delayed between doses, DO NOT start the series over. Continue from where the schedule was interrupted.	**Contraindication** Previous severe allergic reaction (e.g. anaphylaxis) to this vaccine or to any of its components. **Precaution** Moderate or severe acute illness.

1 CDC. Use of Hepatitis B Vaccination for Adults with Diabetes Mellitus: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2011;60(50):1709.

Summary of Recommendations for Adult Immunization (Age 19 years and older)

Vaccine name and route	People for whom vaccination is recommended	Schedule for vaccination administration (any vaccine can be given with another unless otherwise noted)	Contraindications and precautions (mild illness is not a contraindication)
Zoster (shingles) (HZV) *Give Subcut*	• People age 60yrs and older. **NOTE:** Do not test people age 60 yrs or older for varicella immunity prior to zoster vaccination. Persons born in the U.S. prior to 1980 can be presumed to be immune to varicella for the purpose of zoster vaccination, regardless of their recollection of having had chickenpox.	• Give 1-time dose if unvaccinated, regardless of previous history of herpes zoster (shingles) or chickenpox. • If 2 or more of the following live virus vaccines are to be given – MMR, Var, HZV, and/or yellow fever – they should be given on the same day. If they are not, space them by at least 28d.	**Contraindications** • Previous severe allergic reaction (e.g., anaphylaxis) to any component of zoster vaccine. • Primary cellular or acquired immunodeficiency. • Pregnancy. **Precautions** • Moderate or severe acute illness. • Receipt of specific antivirals (i.e., acyclovir, famciclovir, or valacyclovir) 24hrs before vaccination, if possible; delay resumption of these antiviral drugs for 14d after vaccination.
Hib (*Haemophilus influenzae* type b) *Give IM*	For people through age 18 years, consult "Summary of Recommendations for Child/Teen Immunization" at www.immunize.org/catg.d/p2010.pdf. • Not routinely recommended for healthy adults. • Those adults at highest risk of serious Hib disease include people who 1) have anatomic or functional asplenia, 2) are undergoing an elective splenectomy, or 3) are recipients of hematopoietic stem cell transplant (HSCT).	• Give 1 dose of any Hib conjugate vaccine to adults in categories 1 or 2 (see 2nd bullet in column to left) if no history of previous Hib vaccine. • For HSCT patients, regardless of Hib vaccination history, give 3 doses, at least 4 wks apart, beginning 6–12m after transplant.	**Contraindication** Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. **Precautions** Moderate or severe acute illness.
Human papillomavirus (HPV) (HPV2, Cervarix) (HPV4, Gardasil; HPV9, Gardasil9) *Give IM*	For people through age 18 years, consult "Summary of Recommendations for Child/Teen Immunization" at www.immunize.org/catg.d/p2010.pdf. • For unvaccinated females through age 26 yrs: Complete a 3-dose series of HPV2, HPV4, or HPV9. • For unvaccinated males through age 21 yrs: Complete a 3-dose series of HPV4 or HPV9. • For unvaccinated males age 22 through 26 yrs: Complete a 3-dose series of HPV4 or HPV9 for those who 1) have sex with men or 2) are immunocompromised as a result of infection (including HIV), disease, or medications, or 3) want to be protected from HPV	• Give 3 doses on a 0, 1–2, 6m schedule. Use either HPV2, HPV4, or HPV9 for women, and only HPV4 or HPV9 for men. • There must be at least 4wks between doses #1 and #2 and at least 12wks between doses #2 and #3. Overall, there must be at least 24wks between doses #1 and #3. • If the type of HPV vaccine previously given is not known or not available, any available HPV vaccine may be used to complete the series.	**Contraindication** Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. **Precautions** • Moderate or severe acute illness. • Pregnancy.
Inactivated Polio (IPV) *Give IM or Subcut*	For people through age 18 years, consult "Summary of Recommendations for Child/Teen Immunization" at www.immunize.org/catg.d/p2010.pdf. • Not routinely recommended for U.S. residents age 18 yrs and older. **NOTE:** Adults living in the U.S. who never received or completed a primary series of polio vaccine need not be vaccinated unless they intend to travel to areas where exposure to wild-type virus is likely. Adults with documented prior vaccination can receive 1 booster dose if traveling to polio endemic areas or to areas where the risk of exposure is high.	For unique situations, schedules, and dosing information, see ACIP inactivated polio vaccine recommendations on pages 829–830 at www.cdc.gov/mmwr/PDF/wk/mm5830.pdf.	**Contraindication** Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. **Precautions** • Moderate or severe acute illness. • Pregnancy.

Summary of Recommendations for Adult Immunization (Age 19 years and older)

Vaccine name and route	People for whom vaccination is recommended	Schedule for vaccination administration (any vaccine can be given with another unless otherwise noted)	Contraindications and precautions (mild illness is not a contraindication)
Pneumococcal conjugate (PCV13) *Give IM* ——— **Pneumococcal polysaccharide** (PPSV23) *Give IM or Subcut*	For people through age 18 years, consult "Summary of Recommendations for Child/Teen Immunization" www.immunize.org/catg.d/p2010.pdf. **All people age 65 yrs or older should receive** • 1-time dose of PCV13 (if previously unvaccinated) and 1 dose of PPSV23, separated by 1 yr; if possible, give PCV13 first. **People younger than age 65 years should receive** • 1-time dose of PCV13 and 1st dose of PPSV23 if they have functional or anatomic asplenia, immunocompromising condition (see below), CSF leaks, or are a candidate for or recipient of a cochlear implant, • 2nd dose of PPSV23 if at highest risk of serious pneumococcal infection, including those who – Have anatomic or functional asplenia, including sickle cell disease. – Have an immunocompromising condition, including HIV infection, leukemia, lymphoma, Hodgkin's disease, multiple myeloma, generalized malignancy, chronic renal failure, or nephrotic syndrome. – Are receiving immunosuppressive chemotherapy (including high-dose corticosteroids). – Have received an organ or bone marrow transplant. • PPSV23 only (not PCV13) if younger than 65 yrs and they have chronic cardiac or pulmonary disease (including asthma), chronic liver disease, alcoholism, diabetes, smoke cigarettes, or live in special environments or social settings (including American Indian/Alaska Natives age 50 through 64 yrs if recommended by local public health authorities).	• When recommended (see column at left), give PCV13 and/or PPSV23 if unvaccinated or if previous vaccination history is unknown. • For healthy people age 65 yrs and older, give PCV13 first followed by PPSV23 in 1 yr. • When both PCV13 and PPSV23 are indicated, give PCV13 first followed by PPSV23 in 1yr. If previously vaccinated with PPSV, give PCV13 at least 12m after PPSV23. For people at highest risk of serious pneumococcal infection, if not previously vaccinated with PPSV23, give PCV13 first, followed by PPSV23 in 8 wks. • Give another dose of PPSV23 to people – Age 65 yrs and older if 1st dose was given prior to age 65 yrs and 5 yrs have elapsed since previous dose of PPSV. – Age 19–64 yrs who are at highest risk of pneumococcal infection or rapid antibody loss (see the 3rd bullet in the box to left for listing of people at highest risk) and 5 yrs have elapsed since dose #1.	**Contraindication** Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine, including (for PCV13) to any diphtheria toxoid-containing vaccine, or to any of its components. **Precaution** Moderate or severe acute illness.
Meningococcal conjugate (MCV4; Menactra, Menveo) *Give IM* ——— **Meningococcal polysaccharide** (MPSV4; Menomune) *Give Subcut*	For people through age 18 years, consult "Summary of Recommendations for Child/Teen Immunization" at www.immunize.org/catg.d/ p2010.pdf. • People with anatomic or functional asplenia or persistent complement component deficiency. • People who travel to or reside in countries in which meningococcal disease is hyperendemic or epidemic (e.g., the "meningitis belt" of Sub-Saharan Africa). • Microbiologists routinely exposed to isolates of *N. meningitidis*. • First-year college students through age 21 yrs who live in residence halls and who have not been previously vaccinated or who received their first dose prior to age 16 yrs.; see the 5th bullet in the box to the right for details.	• Give 2 initial doses of MCV4 separated by 2m to adults 55 yrs and younger with risk factors listed in 1st bullet in column to left or if vaccinating adults with HIV infection in this age group. • Give 1 initial dose of MCV4 to all other adults with risk factors (see 2nd–4th bullets in column to left). • Give booster doses of MCV4 every 5 yrs to adults with continuing risk (see the 1st–3rd bullets in column to left). • MCV4 is preferred over MPSV4 for people age 55 yrs and younger. For people age 56 yrs and older who anticipate multiple doses (see the 1st–3rd bullets in column to left) or who have received MCV4 previously, use MCV4. For all others, give 1 dose of MPSV4. • For first-year college students age 19–21 yrs living in residence halls, give 1 initial dose of MCV4 if unvaccinated. Give dose #2 if most recent dose was given when younger than 16 yrs.	
Meningococcal serogroup B (MenB; Bexsero, Trumenba) *Give IM*	• Young adults through age 23 yrs as a Category B (permissive) recommendation (to allow for individual clinical decision-making). • People with anatomic or functional asplenia or persistent complement component deficiency. • Microbiologists routinely exposed to isolates of *N. meningitidis*. • People identified as at increased risk because of a serogroup B meningococcal disease outbreak.	• Give either 2 doses of Bexsero, 1m apart, or 3 doses of Trumenba on a 0-, 2-, and 6-month schedule. MenB products are not interchangeable. • MenB vaccine may be given concomitantly with MCV4 vaccine.	

Adult Schedule, page 5 of 5)

Make Sure Your Patients Are Protected from Meningococcal Disease Caused by Serogroups A, C, W, or Y

Meningococcal Vaccine Recommendations by Age and Risk Factor for Serogroups A, C, W, or Y Protection

A separate vaccine is needed for protection against meningococcal serogroup B disease.

MenACWY = Menactra (sanofi) and Menveo (Novartis)
MenACWY-D = Menactra **Hib-MenCY** = MenHibrix (GlaxoSmithKline)
MenACWY-CRM = Menveo **MPSV** = Menomune (sanofi)

Routine Recommendations for Quadrivalent Meningococcal Conjugate Vaccine (MenACWY)	
For preteens age 11 through 12 years	Give dose #1 of 2-dose MenACWY series.[1] (Dose #2 will be due at age 16 years.)
For teens age 13 through 15 years	Give catch-up dose #1 of 2-dose MenACWY series. (Dose #2 will be due at age 16 years.)
For teens age 16 through 18 years	Give dose #2 of MenACWY. Separate from dose #1 by at least 8 weeks.
Catch-up for teens age 16 through 18 years	If no history of prior vaccination with MenACWY, give 1 dose of MenACWY.
For first year college students, age 19 through 21 years, living in residence halls	If no history of prior vaccination with MenACWY, give 1 dose of MenACWY.[1] If history of 1 dose of MenACWY given when younger than age 16 years, give dose #2 of MenACWY.[2]

Risk-based Recommendations for Persons with Underlying Medical Conditions or Other Risk Factors		
TARGETED GROUP BY AGE AND/OR RISK FACTOR	**PRIMARY DOSE(S)**	**BOOSTER DOSE(S)**
Travelers to or residents of countries where meningococcal disease is hyperendemic or epidemic,[3] people present during outbreaks caused by a vaccine serogroup,[4] and other people with prolonged increased risk for exposure (e.g., microbiologists routinely working with *Neisseria meningitidis*)		
For children age 2 through 18 months	Give MenACWY-CRM at ages 2, 4, 6 and 12–15 months.[5]	
For children age 7 through 23 months who have not initiated a series of MenACWY-CRM or Hib-MenCY	Give 2 doses, separated by 3 months,[6] of MenACWY-CRM (if age 7–23 months)[7] or MenACWY-D (if age 9–23 months).	
For age 2 through 55 years	Give 1 dose of MenACWY.[1]	
For age 56 years and older	If no previous MenACWY dose and either short-term travel or outbreak-related, give 1 dose of MPSV; all others, give 1 dose of MenACWY.	
People with persistent complement component deficiencies[10]		
For age 2 through 18 months	Give MenACWY-CRM or Hib-MenCY at ages 2, 4, 6 and 12–15 months	
For children age 7 through 23 months who have not initiated a series of MenACWY-CRM or Hib-MenCY	Give 2 doses, separated by 3 months, of MenACWY-CRM (if age 7–23 months)[7] or MenACWY-D (if age 9–23 months).	
For ages 2 through 55 years	Give 2 doses of MenACWY, 2 months apart.	
For age 56 years and older	Give 2 doses of MenACWY, 2 months apart.	
People with functional or anatomic asplenia, including sickle cell disease		
For children age 2 through 18 months	Give MenACWY-CRM or Hib-MenCY at ages 2, 4, 6 and 12–15 months.	
For children age 19 through 23 months who have not initiated a series of MenACWY-CRM or Hib-MenCY	Give 2 doses of MenACWY-CRM, 3 months apart.	
For children age 2 through 55 years	Give 2 doses of MenACWY, 2 months apart.[12]	
For age 56 years and older	Give 2 doses of MenACWY, 2 months apart.	

FOOTNOTES

1. If the person is HIV-positive, give 2 doses, 2 months apart.
2. The minimum interval between doses of MenACWY is 8 weeks.
3. Prior receipt of Hib-MenCY is not sufficient for children traveling to the Hajj or African meningitis belt as it doesn't provide protection against serogroups A or W.
4. Seek advice of local public health authorities to determine if vaccination is recommended.
5. Children ages 2 through 18 months who are present during outbreaks caused by serogroups C or Y may be given an age-appropriate series of Hib-MenCY.
6. If a child age 7 through 23 months will enter an endemic area in less than 3 months, give doses as close as 2 months apart.
7. If using MenACWY-CRM, dose 2 should be given no younger than age 12 months.
8. If primary dose(s) given when younge 3 years, followed by boosters every 5
9. Booster doses are recommended if th
10. Persistent complement component d factor H, and factor D.
11. If the person received a 1-dose primary then boost every 5 years.
12. Children with functional or anatomic series of PCV13 vaccine before vaccina given at least 4 weeks following last d may be given at any time before or aft

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This one-page chart describes which MenACWY vaccine is needed by age group or risk factor.

www.immunize.org/catg.d/p2018.pdf

Standing orders for other vaccines are available at www.immunize.org/standing-orders. NOTE: This standing orders template may be adapted per a practice's discretion without obtaining permission from IAC. As a courtesy, please acknowledge IAC as its source.

STANDING ORDERS FOR
Administering Meningococcal ACWY Vaccine to Children and Teens

Purpose

To reduce morbidity and mortality from meningococcal disease caused by serotypes A, C, W, or Y by vaccinating all children and teens who meet the criteria established by the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices.

Policy

Where allowed by state law, standing orders enable eligible nurses and other healthcare professionals (e.g., pharmacists) to assess the need for and vaccinate children and teens who meet any of the criteria below.

Procedure

1 Assess children and teens for need of vaccination against meningococcal disease according to the following criteria:

Routine meningococcal ACWY vaccination

- Age 11–12 years and not previously vaccinated
- As catch-up for ages 13–15 years and not previously vaccinated
- Age 16 through 18 years and in need of dose #2
- As catch-up for unvaccinated teens ages 16 through 18 years
- First-year college students age 19 through 21 years living in a residence hall who were never vaccinated or who were last vaccinated when younger than age 16 years

Risk-based meningococcal ACWY vaccination

- Age 2 months and older with diagnosis of persistent complement component deficiency (an immune system disorder) or diagnosis of anatomic or functional asplenia (including sickle-cell disease); children who are part of an outbreak attributable to a vaccine serogroup; or anticipated travel to a country where meningococcal disease is hyperendemic or epidemic (e.g., the "meningitis belt" of sub-Saharan Africa), particularly if contact with the local population will be prolonged

2 Screen for contraindications and precautions

Contraindications: a history of a serious allergic reaction (e.g., anaphylaxis) after a previous dose of meningococcal vaccine or to a meningococcal vaccine component. For information on vaccine components, refer to the manufacturer's package insert (www.immunize.org/packageinserts) or go to www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf.

Precaution: moderate or severe acute illness with or without fever

3 Provide Vaccine Information Statements

Provide all patients (or, in the case of a minor, their parent or legal representative) with a copy of the most current federal Vaccine Information Statement (VIS) available at www.immunize.org/vis. You must document in the patient's medical record or office log, the publication date of the VIS and the date it was given to the patient (parent/legal representative). Provide non-English speaking patients with a copy of the VIS in their native language, if one is available and desired; these can be found at www.immunize.org/vis.

4 Prepare to Administer Vaccine

Choose the needle gauge, needle length, and injection site according to the following chart:

AGE OF PATIENT	NEEDLE GAUGE	NEEDLE LENGTH	INJECTION SITE
Adolescents (age 11–21 years)	22–25	5/8"–1"	Deltoid muscle of arm
Children (age 3–10 years)	22–25	5/8"–1"	Deltoid muscle of arm
Toddlers (age 1–2 years)	22–25	1–1¼"	Anterolateral thigh muscle
Infants (age 2–12 months)	22–25	1"	Anterolateral thigh muscle

* A 5/8" needle may be used in patients weighing less than 130 lbs (<60 kg) for IM injection in the deltoid muscle only if the skin is stretched tight, the subcutaneous tissue is not bunched, and the injection is made at a 90-degree angle to the skin.

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www.immunize.org/catg.d/p3081a.pdf • Item #P3081a (7/15)

Use this MenACWY standing orders template for children and teens to streamline vaccination in your practice setting.

www.immunize.org/catg.d/p3081a.pdf

Updated Meningococcal Questions and Answers and Human Papillomavirus (HPV) Questions and Answers

Information about the diseases and vaccines

Human Papillomavirus (HPV):
Questions and Answers

Q&A

INFORMATION ABOUT THE DISEASE AND VACCINES

How common is HPV in the United States?

HPV is the most common sexually transmitted infection in the United States. About 79 million Americans are currently infected with HPV. About 14 million people become newly infected each year. HPV is so common that most sexually active men and women will get at least one type of HPV at some point in their lives.

An estimated 29,600 HPV-associated cancers occur annually in the U.S., including an estimated 9,300 HPV-associated cancers in males. Of these HPV-associated cancers approximately 64% are caused by HPV types 16 and 18, which are included in all three HPV vaccines available in the United States and about 10% are caused by the 5 HPV types also included in Gardasil 9.

How does HPV spread?

HPV is spread through contact with infected skin, usually through sexual contact. Most infected people have no symptoms and are unaware they are infected and can transmit the virus to a sex partner. Rarely, a pregnant woman passes HPV to her baby during vaginal delivery.

What are the symptoms of HPV?

Most people who become infected with HPV have no symptoms. Some people develop visible genital warts, or have pre-cancerous changes in the cervix, vulva, anus, or penis.

Genital warts usually appear as soft, moist, pink, or flesh-colored swellings, usually in the genital area. They can be raised or flat, single or multiple, small or large, and sometimes cauliflower shaped. They can appear on the vulva, in or around the vagina or anus, on the cervix, and on the penis, scrotum, groin, or thigh. After sexual contact with an infected person, warts may appear within weeks or months, or not at all.

How serious is HPV?

Most HPV infections don't cause any symptoms and eventually go away, as the body's own defense system clears the virus. Women with short-term HPV infections may develop mild Pap test abnormalities that go away with time.

A small percentage of people infected with HPV develop persistent (chronic) HPV infection. Women with persistent high-risk HPV infections are at greatest risk for developing cervical cancer precursor lesions (abnormal cells on the lining of the cervix) and cervical cancer. (See next question.)

What are possible complications from HPV?

Cancer is the most se
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Occasionally, low-risk
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How is HPV infectio

Genital warts in men
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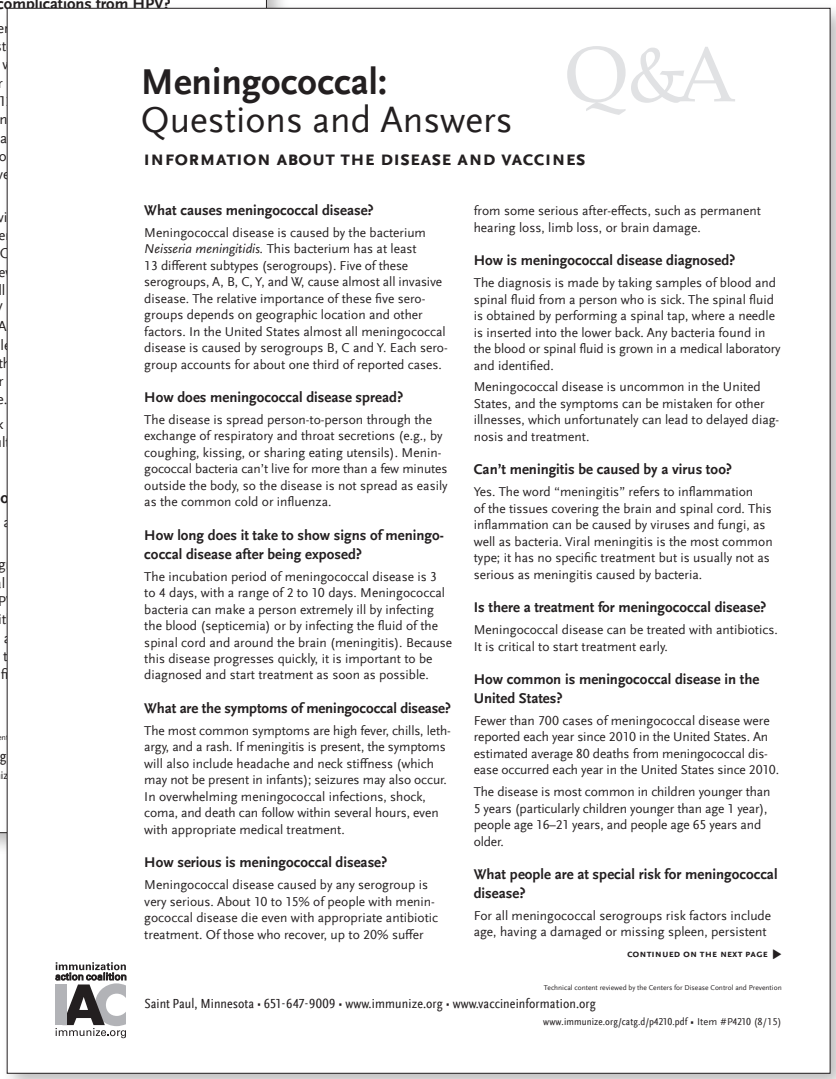

Meningococcal:
Questions and Answers

Q&A

INFORMATION ABOUT THE DISEASE AND VACCINES

What causes meningococcal disease?

Meningococcal disease is caused by the bacterium *Neisseria meningitidis.* This bacterium has at least 13 different subtypes (serogroups). Five of these serogroups, A, B, C, Y, and W, cause almost all invasive disease. The relative importance of these five serogroups depends on geographic location and other factors. In the United States almost all meningococcal disease is caused by serogroups B, C and Y. Each serogroup accounts for about one third of reported cases.

How does meningococcal disease spread?

The disease is spread person-to-person through the exchange of respiratory and throat secretions (e.g., by coughing, kissing, or sharing eating utensils). Meningococcal bacteria can't live for more than a few minutes outside the body, so the disease is not spread as easily as the common cold or influenza.

How long does it take to show signs of meningococcal disease after being exposed?

The incubation period of meningococcal disease is 3 to 4 days, with a range of 2 to 10 days. Meningococcal bacteria can make a person extremely ill by infecting the blood (septicemia) or by infecting the fluid of the spinal cord and around the brain (meningitis). Because this disease progresses quickly, it is important to be diagnosed and start treatment as soon as possible.

What are the symptoms of meningococcal disease?

The most common symptoms are high fever, chills, lethargy, and a rash. If meningitis is present, the symptoms will also include headache and neck stiffness (which may not be present in infants); seizures may also occur. In overwhelming meningococcal infections, shock, coma, and death can follow within several hours, even with appropriate medical treatment.

How serious is meningococcal disease?

Meningococcal disease caused by any serogroup is very serious. About 10 to 15% of people with meningococcal disease die even with appropriate antibiotic treatment. Of those who recover, up to 20% suffer from some serious after-effects, such as permanent hearing loss, limb loss, or brain damage.

How is meningococcal disease diagnosed?

The diagnosis is made by taking samples of blood and spinal fluid from a person who is sick. The spinal fluid is obtained by performing a spinal tap, where a needle is inserted into the lower back. Any bacteria found in the blood or spinal fluid is grown in a medical laboratory and identified.

Meningococcal disease is uncommon in the United States, and the symptoms can be mistaken for other illnesses, which unfortunately can lead to delayed diagnosis and treatment.

Can't meningitis be caused by a virus too?

Yes. The word "meningitis" refers to inflammation of the tissues covering the brain and spinal cord. This inflammation can be caused by viruses and fungi, as well as bacteria. Viral meningitis is the most common type; it has no specific treatment but is usually not as serious as meningitis caused by bacteria.

Is there a treatment for meningococcal disease?

Meningococcal disease can be treated with antibiotics. It is critical to start treatment early.

How common is meningococcal disease in the United States?

Fewer than 700 cases of meningococcal disease were reported each year since 2010 in the United States. An estimated average 80 deaths from meningococcal disease occurred each year in the United States since 2010.

The disease is most common in children younger than 5 years (particularly children younger than age 1 year), people age 16–21 years, and people age 65 years and older.

What people are at special risk for meningococcal disease?

For all meningococcal serogroups risk factors include age, having a damaged or missing spleen, persistent

CONTINUED ON THE NEXT PAGE ▶

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www.immunize.org/catg.d/p4210.pdf • Item #P4210 (8/15)

▶ Access the entire series of "Questions and Answers" about vaccine-preventable diseases and the vaccines that prevent them.

www.immunize.org/handouts/vaccine-questions.asp

Human Papillomavirus (HPV) Q&A
www.immunize.org/catg.d/p4207.pdf

Meningococcal Q&A
www.immunize.org/catg.d/p4210.pdf

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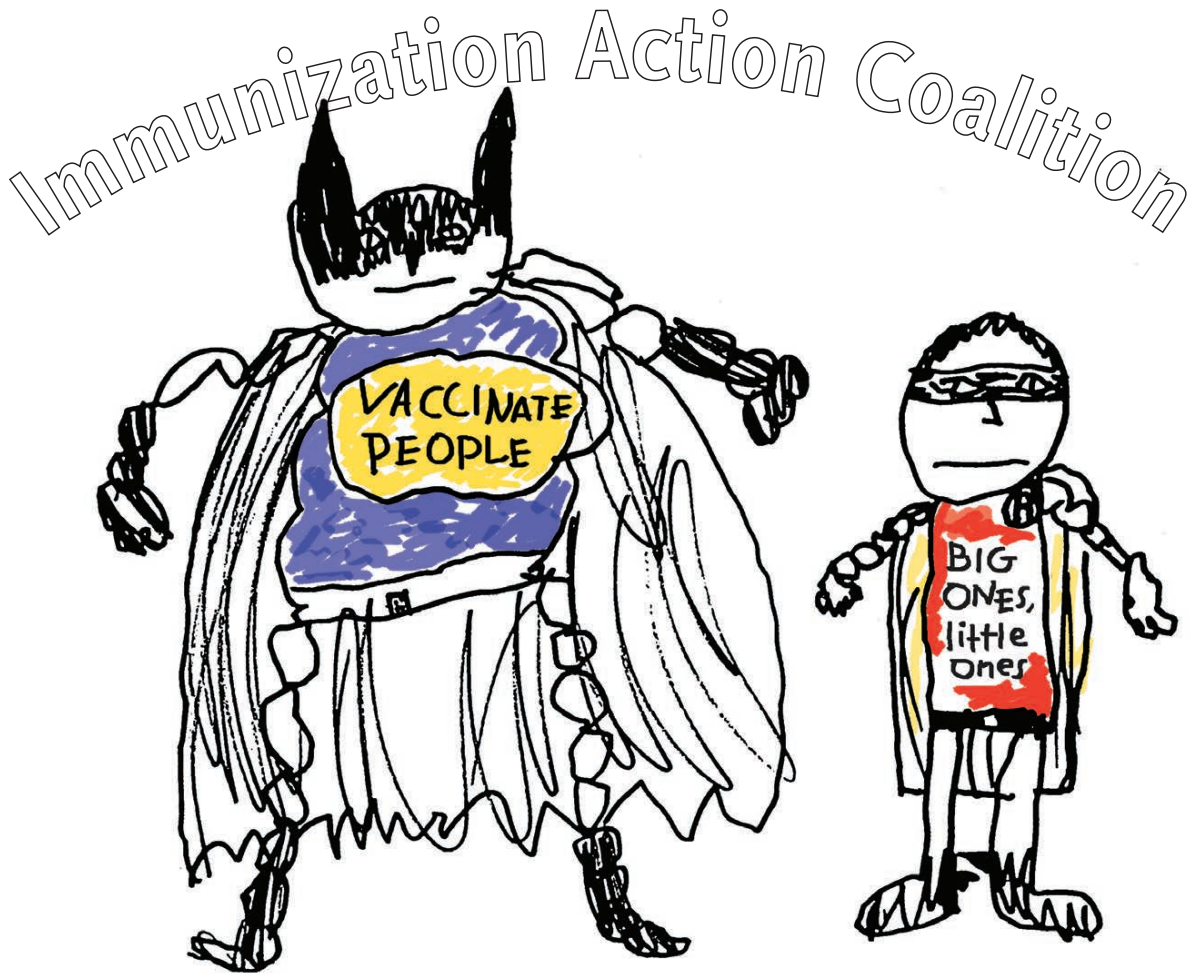

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www.immunize.org/catg.d/u6023.pdf

Meningococcal Vaccine Licensure Information

Trade Name	Type of Vaccine	Serogroups Included	Year Licensed	FDA-approved Ages
Menomune	Polysaccharide	A, C, W, Y	1981	2 years and older
Menactra	Conjugate	A, C, W, Y	2005	9 months–55 years*
Menveo	Conjugate	A, C, W, Y	2010	2 months–55 years*
MenHibrix	Conjugate	C, Y, and Hib	2012	6 weeks–18 months
Trumenba	Protein	B	2014	10–25 years+
Bexsero	Protein	B	2015	10–25 years+

* May be given to people age 56 years or older (consult ACIP recommendations at www.cdc.gov/mmwr/pdf/rr/rr6202.pdf).

+ May be given to people age 26 years or older (consult ACIP recommendations at www.cdc.gov/mmwr/pdf/wk/mm6422.pdf).

serogroup A, C, W, or Y disease. For protection against all 5 serogroups of meningococcus, it is necessary to receive MCV4 or MPSV4 and MenB.

Where can I find the most current meningococcal vaccine recommendations?

The most current recommendations for meningococcal polysaccharide and conjugate vaccines, which include serogroups A, C, W, and Y, were published in March 2013. This document is available on the *MMWR* website at www.cdc.gov/mmwr/pdf/rr/rr6202.pdf. Recommendations for use of MenB vaccine among persons at increased risk were published in June 2015 and are available at www.cdc.gov/mmwr/pdf/wk/mm6422.pdf, pages 608–12. MenB vaccine recommendations for adolescents and young adults were published in October 2015 and are available at www.cdc.gov/mmwr/pdf/wk/mm6441.pdf, pages 1171–6.

Who is recommended to be vaccinated against meningococcal disease?

Certain groups should receive both meningococcal conjugate vaccines (MCV4: Menactra, Sanofi Pasteur; Menveo, GSK) and MenB vaccines (Trumenba, Pfizer; Bexsero, GSK). Others are recommended to receive MCV4 only. MPSV4 (Menomune, Sanofi Pasteur) is recommended only for certain people older than 55 years.

▶ **MCV4** is recommended for these groups:
- All children and teens, ages 11 through 18 years
- People younger than 22 years of age if they are or will be a first-year college student living in a residential hall
- People age 2 months and older with functional or anatomic asplenia (MenHibrix may be used for children age 6 weeks through 18 months in this group.)
- People age 2 months and older who have persistent complement component deficiency (an immune system disorder) (MenHibrix may be used for children age 6 weeks through 18 months in this group.)
- People age 2 months and older who are at risk during an outbreak caused by a vaccine serogroup (MenHibrix may be used for children age 6 weeks through 18 months in this group.)
- People age 2 months and older who reside in or travel to certain countries in sub-Saharan Africa as well as to other countries for which meningococcal vaccine is recommended (e.g., travel to Mecca, Saudi Arabia, for the annual Hajj)
- Microbiologists who work with meningococcus bacteria in a laboratory

▶ **MenB** is routinely recommended for these groups:
- People age 10 years and older who have functional or anatomic asplenia
- People age 10 years and older who have persistent complement component deficiency
- People age 10 years and older who are at risk during an outbreak caused by a vaccine serogroup, such as on college campuses
- Microbiologists who work with meningococcus bacteria in a laboratory

For adolescents and young adults, ACIP recommends that a MenB vaccine series may be administered to people 16 through 23 years of age with a preferred age of vaccination of 16 through 18 years. This Category B recommendation allows the clinician to make a MenB vaccine recommendation based on the risk and benefit for the individual patient.

ACIP now designates a vaccine recommendation as either Category "A" or "B." My interpretation is that an A recommendation means the vaccine is routinely recommended for all people in an age or risk group, and a B recommendation is for use at the clinician's discretion. Does the Affordable Care Act (ACA) require health plans (non-grandfathered) to provide benefit coverage on Category B recommended vaccines?

Your understanding of A and B recommendations is correct. ACA requires coverage of vaccines with both A and B recommendations. The Vaccines For Children program also covers vaccines with a Category B recommendation.

IAC's "Ask the Experts" team from the Centers for Disease Control and Prevention

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Should college students be vaccinated against meningococcal disease?

MCV4 vaccine is recommended for previously unvaccinated first-year college students who are age 21 years and younger, who are or will be living in a residence hall. Some colleges and universities require incoming freshmen and others to be vaccinated with MCV4; some may also require that a dose of MCV4 have been given since the age of 16 years.

Although several small MenB outbreaks have occurred on college campuses since 2013, college students in general are not at higher risk of MenB then persons of the same age who are not college students. Consequently, ACIP does not routinely recommend MenB vaccination for college students. However, college students may choose to receive MenB vaccine to reduce their risk of serogroup B meningococcal disease.

What is the schedule for MCV4 vaccine?

All adolescents should receive a dose of MCV4 at 11 or 12 years of age. A second (booster) dose is recommended at 16 years of age. Adolescents who receive their first dose at age 13 through 15 years should receive a booster dose at age 16 through 18 years. The minimum interval between MCV4 doses is 8 weeks. Adolescents who receive a first dose after their 16th birthday do not need a booster dose unless they become at increased risk for meningococcal disease. Colleges may not consider a second dose given even a few days before age 16 years as valid, so keep that mind when scheduling patients.

Ask the Experts . . . *continued on page 23* ▶

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Ask the Experts… *continued from page 22*

What is the schedule for MenB vaccine?
Trumenba (Pfizer) is a 3-dose series with the second and third doses administered 2 and 6 months after the first dose. Bexsero (GSK) is a 2-dose series with doses given at least 1 month apart.

Which previously vaccinated college students need a booster dose of MCV4?
A booster dose should be given to first-year college students age 21 years and younger who are or will be living in a residence hall if the previous dose was given before the age of 16 years.

Can you provide a comprehensive overview of the MCV4 recommendations, including those for vaccinating younger children and older adults who have risk factors?
IAC has prepared a table that provides a summary of the ACIP recommendations for use of meningococcal vaccine for people of all ages, including recommendations published by ACIP in *MMWR* in March 2013. The table is available at www.immunize.org/catg.d/p2018.pdf.

I have a patient with paroxysmal nocturnal hemoglobinuria who is being treated with Soliris (eculizumab). Should he receive meningococcal vaccine?
Eculizumab binds to C5 and inhibits the terminal complement pathway. Persons with persistent complement component deficiency are at increased risk for meningococcal disease. This person should receive a series of both quadrivalent meningococcal conjugate (MCV4; 2 doses separated by at least 8 weeks) and a 2- or 3-dose series (depending on brand) of meningococcal serogroup B vaccine.

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Are people who are HIV positive in a risk group for meningococcal disease?
HIV infection does not put a person into a risk group that necessitates vaccination with either MCV4 or MenB vaccine. However, the updated ACIP recommendations for use of MCV4 vaccines state that people with HIV who are vaccinated should receive a 2-dose primary series administered 2 months apart. Accordingly, the following HIV-positive people should receive 2 initial doses of MCV4 (instead of 1), spaced 2 months apart:

- HIV-positive adolescents age 11 through 18 years who, like other adolescents, are recommended for routine MCV4 vaccination
- HIV-positive people age 2 through 55 years who are at prolonged increased risk for exposure to meningococcal disease (for example, travelers to, or residents of, countries where meningococcal disease is hyperendemic or epidemic and microbiologists who routinely work with *Neisseria meningitidis*)
- any HIV-positive adult who chooses to be vaccinated

Should all adolescents receive a routine booster dose of MCV4?
ACIP recommends people age 11 or 12 years be routinely vaccinated with quadrivalent MCV4 and receive a booster dose at age 16 years. Adolescents who receive the first dose at age 13 through 15 years should receive a one-time booster dose at age 16 through 18 years, which are the years before the peak in incidence of meningococcal disease among adolescents occurs. Teens who receive their first dose of meningococcal conjugate vaccine at or after age 16 years do not need a booster dose, as long as they have no risk factors.

Why does ACIP recommend a routine booster dose of MCV4 for adolescents age 16 years and older?
In 2005, ACIP recommended routine MCV4 vaccination for all adolescents at age 11 or 12 years to protect them from meningococcal disease as older teens. The peak age for meningococcal disease is 16 through 21 years. In 2005, ACIP reasoned that higher MCV4 vaccination rates could be achieved if, when administering the dose, it was coupled with giving the Td booster dose at the 11- or 12-year-old visit (the Td dose for 11- or 12-year-olds was replaced by Tdap in 2006). Subsequent studies indicated that the protection provided by MCV4 wanes within 5 years following vaccination. For this reason, in 2010, ACIP recommended an MCV4 vaccine booster dose to provide continuing protection during the peak years of vulnerability (see www.cdc.gov/mmwr/pdf/wk/mm6003.pdf, pages 72-76).

If someone received MPSV4 or MCV4 at age 9 years, will two additional doses of MCV4 be needed?
Yes. Doses of quadrivalent meningococcal vaccine (either MPSV4 or MCV4) given before 10 years of age do not count as part of the series. If a child received a dose of either MPSV4 or MCV4 before age 10 years, they should receive a dose of MCV4 at 11 or 12 years and a booster dose at age 16 years.

Which groups should receive a booster dose of MenB vaccine?
ACIP does not currently recommend booster doses of MenB vaccine for any group.

By what route should meningococcal vaccines be administered?
MCV4 should be administered by the intramuscular route. MPSV4 should be given by the subcutaneous route. MenB is given by the intramuscular route.

Can MCV4 and MenB vaccines be given at the same visit?
Yes. MCV4 and MenB vaccines can be given at the same visit or at any time before or after the other.

I understand that a prior history of Guillain-Barrè syndrome (GBS) is no longer a precaution for giving meningococcal conjugate vaccine. Please tell me more about this.
A history of GBS had previously been a precaution for Menactra (Sanofi Pasteur), a brand of MCV4 vaccine. Findings from two studies that examined more than 2 million doses of Menactra given since 2005 showed no evidence of an increased risk of GBS. Consequently, ACIP recommended in 2010 to remove the precaution for use of Menactra in people with a history of GBS. This precaution did not apply to other meningococcal vaccines.

HPV vaccines

If a vaccination series was started with HPV2 or HPV4, can it be completed with HPV9? If the answer is yes, what are the spacing intervals that should be used for the remaining doses in the 3-dose series?
ACIP recommendations state that HPV9 may be used to continue or complete a series started with a different HPV vaccine product. The intervals between doses remain the same regardless of what vaccine is used to complete the series. The second dose is given 1 to 2 months after the first dose and the third dose 4 months after the second AND at least 6 months after the first dose.

Are additional HPV9 doses recommended for a person who started a series with HPV2 or HPV4 and completed the series with one or two doses of HPV9?
There is no ACIP recommendation for additional doses of HPV9 for persons who started the series with HPV2 or HPV4 and completed the series with HPV9.

For CDC's supplemental information and guidance on the use of HPV9 vaccine, go to www.cdc.gov/hpv/downloads/9vhpv-guidance.pdf.

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