ACIP Votes to Update Recommendations for HPV, Tdap, MenB, and HepB Vaccines

On October 19–20, CDC’s Advisory Committee on Immunization Practices (ACIP) met in Atlanta and voted to update several of its existing vaccine recommendations. Some of the changes are described below.

**Human Papillomavirus (HPV) Vaccine**

ACIP voted to change the HPV vaccination schedule from a 3-dose to a 2-dose series for adolescents who begin the HPV series at 9 through 14 years of age, regardless of age at series completion. Those who start the series later, at 15 through 26 years of age, or who are immunocompromised, will continue to need 3 doses.

The 9vHPV vaccine (HPV9, Gardasil 9, Merck) will soon be the only HPV vaccine available in the U.S. As of October 2016, Merck is distributing only HPV9, and supplies of 2vHPV (Cervarix, GSK) in the U.S. are now depleted. HPV9 may be used to complete a series begun with 4vHPV (HPV4, Gardasil, Merck) or 2vHPV.

**Meningococcal Serogroup B Vaccine**

Bexsero (MenB-4C, GSK) has previously been recommended by ACIP for use as a 2-dose series for high-risk individuals and in outbreak settings, and may also be administered to healthy individuals age 16 through 23 years. In April, FDA approved a label change giving MenB-FHbp (Trumenba, Pfizer) as either a 2-dose (0, 6 months) or 3-dose (0, 1–2, 6 months) series. ACIP voted to recommend that healthcare providers who use Trumenba continue to use the 3-dose series when vaccinating people at increased risk of meningococcal serogroup B disease (e.g., people with persistent complement component deficiencies or anatomic or functional asplenia) or during serogroup B outbreaks. The 2-dose series of Trumenba can be used for routine vaccination for healthy people age 16 through 23 years.

**Tdap Vaccine**

Previous ACIP recommendations called for prenatal care providers to vaccinate all pregnant women with Tdap vaccine during each pregnancy with optimal timing for this dose designated between 27 and 36 weeks gestation. In October, ACIP voted to recommend administering Tdap vaccination early in the 27- through 36-week “window” to maximize passive antibody transfer to the infant. The new recommendations also clarify that children age 7 through 10 years who receive Tdap as part of a catch-up series may be given an additional Tdap for the routinely recommended adolescent dose at 11–12 years of age.

**Hepatitis B Vaccine**

ACIP voted to approve a new guidance document that consolidates all previously published recommendations into a comprehensive statement. The committee reemphasized the importance of the HepB birth dose as a safety net against chronic HBV infection, now recommending that all newborns of HBsAg-negative (hepatitis B surface antigen-negative) mothers should be vaccinated with HepB vaccine within 24 hours of birth.

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**HPV Vaccine**

What is the new HPV vaccine schedule recommendation?

In October 2016, the Advisory Committee on Immunization Practices (ACIP) voted to recommend a routine 2-dose HPV vaccine schedule for adolescents who start the vaccination series before the 15th birthday. The two doses should be separated by 6–12 months (the minimum interval between doses is 5 months). A 3-dose schedule continues to be recommended for people who start the series on or after the 15th birthday and for people with certain immunocompromising conditions (such as cancer, HIV infection, or taking immunosuppressive drugs). A revised ACIP statement is being prepared and is expected to be published in December 2016.

Has ACIP expressed a preference for the 2-dose over the 3-dose schedule for adolescents 9 through 14 years of age?

Yes. ACIP recommends the 2-dose schedule for people starting the HPV vaccination series before the 15th birthday, as long as they are immunocompetent.

Does the 2-dose HPV vaccine schedule need to be completed with the same vaccine, or can it include different vaccines (such as bivalent or quadrivalent vaccine)?

The 2-dose schedule can be completed with any combination of HPV vaccine brands as long as dose #1 was given before age 15 years. Dose #2 should be administered 6–12 months after dose #1.

If dose #1 of HPV vaccine was given before the 15th birthday and it has been more than a year since that dose was given, would the series be complete with just one additional dose?

Yes. Adolescents and adults who started the HPV vaccine series prior to the 15th birthday and who are not immunocompromised are considered to have a "window" to maximize passive antibody transfer to the infant. The new recommendations also clarify that children age 7 through 10 years who receive Tdap as part of a catch-up series may be given an additional Tdap for the routinely recommended adolescent dose at 11–12 years of age.

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**Immunization questions?**

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- Call your state health department (phone numbers at www.immunize.org/coordinators)
Ask the Experts…continued from page 1

 adecately vaccinated with just one additional dose of HPV vaccine.

We have adolescents in our practice who have received the first 2 doses of the HPV series 1 or 2 months apart according to the 3-dose schedule. Can we consider their HPV vaccine series to be complete or do we need to give these patients a third dose?

People who have received 2 doses of HPV vaccine separated by less than 5 months should receive a third dose 6–12 months after dose #1 and at least 12 weeks after dose #2.

Will the 2-dose recommendation be retroactive for children and teens vaccinated prior to 2016?

Yes. Any person who ever received 2 doses of any combination of HPV vaccines can be considered fully vaccinated if dose #1 was given before the 15th birthday and the 2 doses were separated by at least 5 months.

MenACWY vaccine

Please review the new recommendations for use of MenACWY vaccine in people with human immunodeficiency virus (HIV) infection.

A growing body of evidence supports an increased risk for meningococcal disease in HIV-infected people. The Advisory Committee on Immunization Practices (ACIP) recommends that all HIV-infected people 2 months of age and older should routinely receive an age-appropriate MenACWY vaccine (Menactra, Sanofi Pasteur; Meningococcal Serogroups A, C, W, and Y Conjugate Vaccine [MPSV4, Sanofi Pasteur]), children younger than age 2 should be vaccinated using a multidose schedule (see the IAC educational piece “Meningococcal Vaccine Recommendations by Age and Risk Factor for Serogroups A, C, W, or Y Protection” available at www.immunize.org/catg.d/p2018.pdf for details).

People age 2 years and older with HIV infection who have not been previously vaccinated should receive a 2-dose primary series of MenACWY vaccine (doses separated by 8–12 weeks). People with HIV infection who have previously received one dose of MenACWY should receive a second dose at the earliest opportunity (at least 8 weeks after the previous dose) and then receive booster doses at the appropriate intervals. If the most recent dose was received before age 7 years, a booster dose should be administered 3 years later. If the most recent dose was received at age 7 years or older, a booster should be administered 5 years later and every 5 years thereafter throughout life.

I have an HIV-positive 64-year-old patient who received MenACWY vaccine last week. Was this the correct vaccine for this patient or should he have gotten meningococcal polysaccharide vaccine (MPSV4, Sanofi Pasteur) due to his age? Also, should this patient get another dose in 2 months?

MenACWY was the correct vaccine in this situation. The 2013 ACIP recommendations on MenACWY vaccination recommend the use of meningococcal conjugate vaccine in adults age 56 years and older who were vaccinated previously with MenACWY and now need revaccination, or are recommended to receive multiple doses. A person of this age with HIV infection should receive 2 doses of MenACWY separated by 8–12 weeks. Both MenACWY vaccines are licensed for use in people through age 55 years, which means that the use of these vaccines in people age 56 and older is off-label but recommended by ACIP.

I have a 24-month-old patient with HIV infection and I want to use Menactra (Sanofi Pasteur) because this is the only vaccine we have available in our clinic. However, this child received DTaP vaccine yesterday at another clinic. Can I administer Menactra today?

ACIP recommends that you wait 4 weeks from the dose of DTaP to administer the dose of Menactra. This is because data suggest a reduced response to the Menactra if given within a month after DTaP. If Menactra is to be administered to a child at increased risk for meningococcal disease, including children who have HIV infection, Menactra should be given either before or at the same visit as DTaP. Menveo brand MenACWY vaccine (GSK) can be given at any time before or after DTaP.

I have a 24-month-old patient with a complement component deficiency who received a dose of DTaP at 23 months of age and then received a dose of Menactra two weeks later. Do I need to repeat the dose of Menactra?

No. Even though ACIP recommends that Menactra should be given no less than 4 weeks after a dose of DTaP, there is no evidence to support repeating the dose of Menactra. A child with a complement component deficiency should still receive a second dose of MenACWY vaccine 8 weeks after the first dose.

Ask the Experts…continued on page 3

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The ACIP MenACWY vaccine recommendations state that a routine second dose needs to be given at 16 years of age. Children with asplenia or other high-risk conditions should receive a booster dose every 5 years. If a child with a high-risk condition receives a dose of MenACWY at age 9 years (and a second primary dose 8 weeks later), should they receive a booster dose at age 14 years (5 years after the primary series), or should they receive a dose at age 16 years as recommended in the routine schedule? The MenACWY booster dose should be given at 14 years (5 years after the primary series) and every 5 years thereafter. The every 5-year booster dose schedule for persons with high-risk conditions takes precedence over the routine second dose schedule.

MenB vaccine

Which individuals in risk groups are recommended to be vaccinated against meningococcal serogroup B disease? CDC’s Advisory Committee on Immunization Practices (ACIP) recommends routine MenB vaccination of the following individuals in certain risk 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, including people taking eculizumab (Soliris)
- People age 10 years and older who are at risk during an outbreak caused by a vaccine serogroup, such as on a college campus
- Microbiologists who work with meningococcus bacteria in a laboratory

Both MenB vaccines are licensed for use in people through age 25 years, which means that the use of these vaccines in people age 26 and older is off-label but recommended by ACIP.

What is the new schedule for Trumenba MenB vaccine? The Food and Drug Administration approved a 2-dose schedule for Trumenba in April 2016. At its October 2016 meeting, ACIP voted to recommend a 2-dose schedule of Trumenba for people not at increased risk of MenB (for example, healthy adolescents). The two doses should be administered at least 6 months apart. ACIP recommends that people at increased risk of MenB disease (complement component deficiency, functional or anatomic asplenia, at risk during an outbreak of meningococcal B disease, and certain microbiologists) receive a 3-dose Trumenba series with dose #2 and dose #3 administered 2 and 6 months after dose #1.

The schedule for Bexsero has not changed. Bexsero is a 2-dose series with dose #2 given at least 1 month after dose #1.

Should college students be vaccinated against meningococcal B disease? Although several small meningococcal serogroup B disease outbreaks have occurred on college campuses since 2013, college students in general are not at higher risk of meningococcal B disease than people of the same age who are not college students. Consequently, it is not recommended that college students receive MenB vaccination.

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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.

ACIP recommendations for MenB vaccine say the vaccine will provide “short term protection.” What does “short term protection” mean?

MenB vaccines were approved based on the serologic response to the vaccine. No data are available on vaccine effectiveness against clinical disease or duration of protection against clinical disease. Short term protection refers to the known duration of the antibody response. Available data indicate that a protective antibody level should persist in most recipients for 24–48 months after vaccination. This issue will continue to be monitored. For more information, see the ACIP recommendations at www.cdc.gov/mmwr/pdf/wk/mm6441.pdf, pages 1171–5.

Can the MenB series be completed with a different MenB brand from the one the series was begun with?

No. You may not switch MenB vaccines in order to complete a series. The series must be started and completed with the same MenB brand.

Can meningococcal conjugate (MenACWY) and MenB vaccines be given at the same visit?

Yes. Both Fluzone Pediatric (0.25 mL dose) and FluLaval (0.5 mL dose) are approved by the Food and Drug Administration for use in children 6 through 35 months of age.

A 2-year-old was inadvertently given a 0.25 mL dose of FluLaval rather than the recommended 0.5 mL dose. What should we do?

If the error is discovered while the child is still in the office you can administer the other “half” of the FluLaval dose. If the error is discovered later, then the child should be recalled to the office and given a full age-appropriate repeat dose, either a 0.5 mL dose of FluLaval or a 0.25 mL dose of Fluzone.

Can a clinic vaccinate children younger than age 3 years with influenza vaccine taken from a multidose vial of Fluzone or FluLaval?

The multi-dose vials contain thimerosal as a preservative. Yes. Multidose vials of Fluzone and FluLaval contain a small amount of thimerosal to prevent bacterial and fungal growth in the vial. Thimerosal-containing vaccines are safe to use in children. No scientific evidence indicates that thimerosal in vaccines causes adverse events unless the patient has a severe allergy to thimerosal. However, a few states have enacted legislation that restricts the use of thimerosal-containing vaccines in children. To find out if your state has such restrictions, check with your state immunization program (see www.immunize.org/coordinators for phone numbers). ♦

Influenza vaccine

Please provide details about the use of FluLaval influenza vaccine (GlaxoSmithKline) in children younger than 3 years.

On November 18, 2016, the Food and Drug Administration approved an extension of the age range of quadrivalent FluLaval (inactivated influenza vaccine, GSK) to include children 6 through 35 months of age. FluLaval was previously approved for people 3 years of age and older. The approval of the extended age range for FluLaval was based on a study showing an equivalent (“non-inferior”) response compared to children who received Fluzone (Sanofi Pasteur) pediatric formulation. The vaccine will be supplied for this indication in manufacturer-filled syringes and multi-dose vials. The dosage approved for children 6 through 35 months of age is 0.5 mL – the same dosage as for people 3 years of age and older.

ACIP has not yet issued a recommendation regarding the use of FluLaval in children 6 through 35 months of age. However, clinicians are free to use this and other vaccines in a manner consistent with their labeling.

Can a child 6 through 35 months of age who needs 2 doses of influenza vaccine this season receive one each of Fluzone Pediatric and FluLaval vaccine?

Yes. Both Fluzone Pediatric (0.25 mL dose) and FluLaval (0.5 mL dose) are approved by the Food and Drug Administration for use in children 6 through 35 months of age.

Needle Tips correction policy

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Vaccine Highlights

Recommendations, schedules, and more

Editor’s note: The information in Vaccine Highlights is current as of December 9, 2016.

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 viewable online via live webcast. The next meetings will be held on Feb. 22–23 and June 21–22, 2017. 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/index.html.

HPV vaccine news

On October 7, the Food and Drug Administration approved a 2-dose schedule for Gardasil 9 HPV vaccine (Merck) for people 9 through 14 years of age. The approval was based on a clinical trial that demonstrated a non-inferior response to 2 doses of Gardasil 9 among girls and boys 9 through 14 years of age compared to a 3-dose schedule among women 16 through 26 years of age. The revised package insert and Summary Basis for Regulatory Action is available on the FDA website at www.fda.gov/BiologicsBloodVaccines/Vaccines/ApprovedProducts/ucm426445.htm.

On December 2, CDC released an updated human papillomavirus (HPV) vaccine VIS. It is similar to the previous 9-valent HPV vaccine VIS, except that it contains information about the recently approved 2-dose schedule. Providers are encouraged to begin using the new VIS now but may use up stocks of the previous version, especially for patients still using the 3-dose schedule.

The new VIS no longer has “Gardasil-9” in the title because the other two HPV vaccines (Cervarix and quadrivalent Gardasil) are no longer distributed in the U.S. The last doses of Cervarix have already expired, and the last doses of Gardasil will expire in May 2017. At that point Gardasil-9 will be the only HPV vaccine available in the U.S. and this will be the only VIS. The new VIS is available on the on the IAC VIS website at www.immunize.org/vis/vis_hpv_gardasil.asp. Translations of the HPV9 VIS are acceptable to use until new translations become available.

Influenza vaccine news

On November 18, the Food and Drug Administration approved an extension of the age range of quadrivalent FluLaval (inactivated influenza vaccine, GSK) to include children 6 through 35 months of age. FluLaval was previously approved for people 3 years of age and older. The dosage approved for children 6 through 35 months of age is 0.5 mL – the same dosage as for people 3 years of age and older. ACIP has not yet issued a recommendation regarding the use of FluLaval in children age 6 through 35 months. However, clinicians are free to use this and other vaccines in a manner consistent with their labeling. The revised package insert and Summary Basis for Regulatory Action is available on the FDA website at www.fda.gov/BiologicsBloodVaccines/Vaccines/ApprovedProducts/ucm112845.htm.

MenACWY vaccine news

On November 4, CDC published “Recommendations for Use of Meningococcal Conjugate Vaccines in HIV-Infected Persons – ACIP, 2016” in MMWR. The document is available at www.cdc.gov/mmwr/volumes/65/wr/pdfs/mm6543.pdf, pages 1189–94. Routine meningococcal conjugate (MenACWY) vaccination is now recommended for all HIV-infected people age 2 months and older. Children 2 months and older should receive an age-appropriate series. People 2 years and older should receive 2 doses of MenACWY separated by 8 weeks. All HIV-infected people should receive booster doses of MenACWY throughout their life. ACIP previously recommended that children at increased risk of meningococcal disease not receive the Menactra brand of MenACWY until age 2 years. The new guidance clarifies that Menactra MenACWY may be given to children younger than age 2 years as long as it is given at least 4 weeks after completion of the PCV13 vaccine series. ACIP also clarified that Menactra MenACWY may be given before or at the same visit as DTaP but should not be given until at least 4 weeks after a dose of DTaP because of evidence of interference with the response to Menactra. The Menveo brand of MenACWY may be given any time before or after a dose of DTaP or PCV13.

Hepatitis B vaccine news

On October 19, ACIP voted to approve a single guidance document that consolidated previously published hepatitis B vaccination recommendations into a comprehensive statement. ACIP re-emphasized the importance of the hepatitis B birth dose as a safety net against chronic HBV infection by recommending that all infants of HBsAg-negative (hepatitis B surface antigen-negative) mothers should receive hepatitis B vaccine within 24 hours of birth. This removes previous policy language that allowed for a delay in administering the birth dose in certain rare circumstances and on a case-by-case basis. The new comprehensive hepatitis B ACIP statement is being prepared for publication.

Current VIS dates

Check the dates on your supply of Vaccine Information Statements (VISs). If they are out of date, obtain the most up-to-date versions as well as VIS translations in more than 30 languages at www.immunize.org/vis.

- Adenovirus .......... 6/11/14
- Anthrax ............. 3/10/10
- Chickenpox .......... 3/13/08
- DTaP ................ 5/17/07
- Hib .................. 4/2/15
- Hepatitis A .......... 7/20/16
- Hepatitis B .......... 7/20/16
- HPV ................. 12/2/16
- Influenza .......... 8/7/15
- Japanese enceph... 1/24/14
- MCV4/MPSV4 ....... 3/31/16
- MenB ................ 8/9/16
- MMR ............... 4/20/12
- MMRV ............. 5/21/10
- Multi-vaccine ... 11/5/15
- PCV13 .............. 11/5/15
- PPSV .............. 4/24/15
- Polio .............. 7/20/16
- Rabies ........... 10/6/09
- Rotavirus ........ 4/15/15
- Shingles .......... 10/6/09
- Typhoid .......... 5/29/12
- Yellow fever .... 3/30/11

For a ready-to-print version of this table for posting in your practice, go to www.immunize.org/catg.d/p2029.pdf.
Meningococcal B Vaccine: CDC Answers Your Questions

Experts from the National Center for Immunization and Respiratory Diseases at the Centers for Disease Control and Prevention answer your questions about meningococcal serogroup B (MenB) vaccine.

Which meningococcal vaccines are available in the United States?

Since 2005, two 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 (MenACWY, Menactra, Sanofi Pasteur; Menevo, GSK) in which the polysaccharide is chemically bonded (“conjugated”) to a protein to produce better protection.

More recently, two vaccines have become available that offer protection from meningococcal serogroup B disease (MenB, Bexsero, GSK; Trumenba, Pfizer). These vaccines are composed of proteins also found on the surface of the meningococcal bacteria. Both MenB vaccines are approved by the Food and Drug Administration for use in persons 10 through 25 years of age.

MPSV4 and MenACWY provide no protection against serogroup B disease and meningococcal serogroup B vaccines (MenB) provide no protection against serogroup A, C, W, or Y disease. For protection against all 5 serogroups of meningococcus, it is necessary to receive MenACWY or MPSV4 and MenB.

Which individuals in risk groups are recommended to be vaccinated against meningococcal serogroup B disease?

CDC’s Advisory Committee on Immunization Practices (ACIP) recommends routine MenB vaccination of the following individuals in certain risk 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, including people taking eculizumab (Soliris)
- People age 10 years and older who are at risk during an outbreak caused by a vaccine serogroup, such as on a college campus
- Microbiologists who work with meningococcus bacteria in a laboratory

Administration of MenB vaccine in persons older than 25 years of age is an off-label use. Clinicians may choose to use vaccines off-label if they believe it would be of benefit to their patients.

Which individuals are recommended to be vaccinated against meningococcal serogroup B disease who are not in risk groups?

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 gives clinicians an opportunity to discuss the value of MenB vaccination with their patients to make a decision together about the individual’s need or desire for the vaccine based on risks, benefits, and wish for protection from the disease. Because it is a Category B recommendation, MenB vaccination is covered by the Vaccines for Children Program for anyone who is eligible. Under the Affordable Care Act, private insurance must also cover the costs of both Category A and B recommended vaccines.

What is the difference between a Category A and Category B recommendation?

A Category A recommendation is made for all persons in an age- or risk-factor-based group. The meningococcal conjugate vaccine recommendation for all preteens at 11–12 years of age is an example of a Category A recommendation. A Category B recommendation does not apply to everyone, but in the context of a clinician-patient interaction, vaccination may be found to be appropriate for a person as noted above for MenB vaccination of healthy adolescents.

Does the Affordable Care Act (ACA) require health plans (non-grandfathered) to provide benefit coverage on Category B recommended vaccines?

Yes. ACA requires coverage of vaccines with both Category A and B recommendations. The Vaccines for Children Program also includes vaccines with a Category A and B recommendations.

Should college students be vaccinated against meningococcal B disease?

Although several small meningococcal serogroup B disease outbreaks have occurred on college campuses since 2013, college students in general are not at higher risk of meningococcal B disease than 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.

Should international travelers receive both meningococcal conjugate vaccine and meningococcal serogroup B vaccine?

Travelers are not considered to be a group at increased risk for serogroup B meningococcal disease and are not recommended to receive serogroup B vaccine. Meningococcal conjugate vaccine (MenACWY) continues to be recommended for certain international travelers (residents of and travelers to sub-Saharan Africa and the Hajj in Saudi Arabia).

What is the schedule for administering MenB vaccine?

Bexsero is a 2-dose series with dose #2 given at least 1 month after dose #1. Trumenba is either a 2-dose series with doses administered continued on the next page.
tered at least 6 months apart or a 3-dose series with dose #2 and dose #3 administered 2 and 6 months after dose #1. The ACIP recommends that persons at increased risk of meningococcal serogroup B disease (complement component deficiency, functional or anatomic asplenia, at risk during an outbreak of meningococcal B disease and microbiologists) receive either the 2-dose Bexsero series or the 3-dose Trumenba series. Persons not at increased risk (such as healthy adolescents and young adults) can receive either the 2-dose Bexsero series or the 2-dose Trumenba series.

What is the least amount of time allowable between doses (minimum intervals) when administering either of the MenB vaccines?

Neither ACIP nor the CDC meningococcal subject matter experts have addressed this issue. So we must assume that the routinely recommended intervals are also the minimum intervals (see previous question). It is important to use these intervals when scheduling doses. However, if these intervals are violated, CDC recommends that the dose can be counted and does not need to be repeated.

Can the MenB series be completed with a different MenB brand from the one the series was begun with?

No. You may not switch MenB vaccines in order to complete a series. The series must be started and completed with the same MenB brand.

I have a patient who was given Trumenba in August. Two months later she was given a dose of Bexsero. How should I proceed with her MenB vaccination series? We stock both vaccines.

Since the ACIP meningococcal serogroup B vaccine recommendations state that the same vaccine must be used for all doses in the MenB series, the clinician needs to complete a series with one or the other vaccine. If a non-high risk person has already received 1 dose of Bexsero and 1 of Trumenba, then pick a brand and finish a recommended schedule with that brand. Ignore the extra dose of the other product that was already administered. If you choose to use Bexsero, it should be separated from the previous dose of Bexsero by one month. If you choose to use Trumenba, it should be separated from the previous dose of Trumenba by 6 months.

We have a 1-year-old with congenital asplenia. He already received a series of meningococcal conjugate vaccine. Should we also give him MenB vaccine?

Use of either meningococcal serogroup B vaccine in persons younger than age 10 years is off-label in the U.S. There is currently no ACIP recommendation for use of this vaccine for this age group. However, Bexsero brand meningococcal B vaccine has been studied in children and is approved for children as young as 2 months of age by the European Medicines Agency (the European version of the U.S. Food and Drug Administration). It is routinely recommended for infants in the United Kingdom (see www.nhs.uk/conditions/vaccinations/pages/meningitis-b-vaccine.aspx for details). A clinician may choose to use a vaccine off-label if, in their opinion, the benefit of the vaccine exceeds the risk from the vaccine. Product information for Bexsero can be found on the European Medicines Agency website at www.ema.europa.eu/ema. These doses may not be covered by insurance.

Can meningococcal conjugate (MenACWY) and MenB vaccines be given at the same visit?

Yes. Meningococcal conjugate and MenB vaccines can be given at the same visit or at any time before or after the other.

Which groups of patients should receive a booster dose of MenB vaccine after completion of the series?

ACIP does not currently recommend booster doses of MenB vaccine for any group.

By what route should meningococcal B vaccines be administered?

MenB vaccines are given by the intramuscular route.

What are the contraindications and precautions to MenB vaccine?

As with all vaccines, a severe allergic reaction to a vaccine component or a reaction following a prior dose is a contraindication to subsequent doses. The tip caps of the Bexsero pre-filled syringes contain natural rubber latex which may cause allergic reactions in latex-sensitive individuals. The only precaution for administering MenB vaccine is the presence of a moderate or severe acute illness. Vaccination should be deferred until the illness improves.

What adverse reactions have been reported after MenB vaccine?

For both MenB vaccines the most common adverse reactions observed in clinical trials were local reactions, including pain at the injection site (83%-85%), erythema and swelling.

How should MenB vaccines be stored?

MenB vaccines should be stored refrigerated at 36°F to 46°F (2°C to 8°C). Do not freeze the vaccines. Discard any vaccine that has been exposed to freezing temperature. Protect the vaccine from light.

REFERENCES

CDC. Use of Serogroup B Meningococcal Vaccines in Persons Aged ≥10 Years at Increased Risk for Serogroup B Meningococcal Disease: Recommendations of the Advisory Committee on Immunization Practices, 2015. MMWR 2016;64(No.22):608-12.

CDC. Use of Serogroup B Meningococcal Vaccines in Adolescents and Young Adults: Recommendations of the Advisory Committee on Immunization Practices, 2015. MMWR 2015;64(No.41):1171-6.
Meningococcal Vaccine Recommendations by Age and Risk Factor for Serogroup B Protection

Meningococcal serogroup type B vaccines:
- **Bexsero** (MenB-4C, GlaxoSmithKline)
- **Trumenba** (MenB-FHbp, Pfizer)

### Routine Recommendations for Meningococcal Serogroup B Vaccination

| For teens and young adults ages 16 through 23 years who wish to be vaccinated. The preferred age is 16 through 18 years. | Give either 2 doses of Bexsero 4 weeks apart, or 2 doses of Trumenba on a 0- and 6-month schedule. |

### Risk-based Recommendations for Persons with Underlying Medical Conditions or Other Risk Factors

| For people ages 10 years or older with • persistent complement component deficiencies¹ • anatomic or functional asplenia, including sickle cell disease, For people ages 10 years or older who • are present during outbreaks caused by serogroup B,² or • have prolonged increased risk for exposure (e.g., microbiologists routinely working with Neisseria meningitidis) | Give either 2 doses of Bexsero 4 weeks apart, or 3 doses of Trumenba on a 0-, 2-, and 6-month schedule. |

Note: The two brands of meningococcal B vaccine are not interchangeable. The series must be started and completed with the same brand of vaccine.

**Footnotes**

1. Persistent complement component deficiencies (e.g., inherited or chronic deficiencies in C3, C5–C9, properdin, factor D, and factor H).
2. Seek advice of local public health authorities to determine if vaccination is recommended.
5 Administer MenB vaccine, 0.5 mL, via the intramuscular (IM) route, according to the following table:

<table>
<thead>
<tr>
<th>Type of vaccine</th>
<th>Age group</th>
<th>Dose</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bexsero®</td>
<td>10 years and older</td>
<td>0.5 mL</td>
<td>Two doses at 0 and 6 months</td>
</tr>
<tr>
<td>Trumenba®</td>
<td>10 years and older</td>
<td>0.5 mL</td>
<td>Three doses at 0, 1–2, and 6 months</td>
</tr>
</tbody>
</table>

Notes:
1. The two brands of MenB vaccine are not interchangeable.
2. The 2-dose schedule of either Bexsero or Trumenba is for use with young adults at increased risk for meningococcal serogroup B disease (e.g., those with persistent complement deficiencies, anatomical or functional asplenia, or during serogroup B outbreaks).

6 Document Vaccination

Document patient’s vaccine administration in the patient’s medical record or on a vaccine record card. Be prepared for management of a medical emergency related to the administration of vaccine by having a written procedure.

7 Be Prepared to Manage Medical Emergencies

Be prepared for management of a medical emergency using the applicable emergency medical protocols, as well as the information in “Vaccine Reactions in Children and Teens,” go to www.immunize.org/vaccineinfo/risks/pediatric/sec11/p19a.html.

8 Report Adverse Events to VAERS

Report all adverse events following the administration of meningococcal vaccine to the federal Vaccine Adverse Event Reporting System (VAERS) at www.vaers.hhs.gov. Forms are available on the website or by calling (800) 822-7967.

Standing Orders Authorization

This policy and procedure shall remain in effect for all patients of the name of practice or clinic until rescinded or until date .

Medical Director’s signature

Immunization Action Coalition • Saint Paul, Minnesota • 651-647-9009

Visit www.immunize.org/catg.d/p3095.pdf
Meningococcal Vaccine Recommendations by Age and Risk Factor for Serogroups A, C, W, or Y Protection

Routine Recommendations for Quadrivalent Meningococcal Conjugate Vaccine (MenACWY)

<table>
<thead>
<tr>
<th>Targeted Group by Age/Or Risk Factor</th>
<th>Primary Dose(s)</th>
<th>Booster Dose(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travelers to or residents of countries where meningococcal disease is hyperendemic or epidemic,2 people present during outbreaks caused by a vaccine serogroup,3 and other people with prolonged increased risk for exposure (e.g., microbiologists routinely working with Neisseria meningitidis)</td>
<td>Give 2 doses of MenACWY-CRM or Hib-MenCY,6 8 weeks apart, and a 4th dose at 12–15 months. If possible, vaccination should begin at age 2 months.</td>
<td>If risk continues, give initial booster after 3 years followed by boosters every 5 years.</td>
</tr>
<tr>
<td>For age 2 through 6 months</td>
<td>Give 3 doses of MenACWY-CRM or Hib-MenCY,4 8 weeks apart, and a 4th dose at 12–15 months. If possible, vaccination should begin at age 2 months.</td>
<td></td>
</tr>
<tr>
<td>For age 7 through 23 months who have not initiated a series of MenACWY-CRM</td>
<td>Give 2 doses of MenACWY-CRM or Hib-MenCY,6 or, if 9–23 months, MenACWY-D.7 Separate the 2 doses by at least 12 weeks.8</td>
<td></td>
</tr>
<tr>
<td>For age 2 through 55 years</td>
<td>Give 1 dose of MenACWY.</td>
<td>Boost every 5 years with MenACWY.9,10</td>
</tr>
<tr>
<td>For age 56 years and older</td>
<td>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.</td>
<td>Boost every 5 years with MenACWY.10</td>
</tr>
</tbody>
</table>

People with persistent complement component deficiencies11

<table>
<thead>
<tr>
<th>Targeted Group by Age/Or Risk Factor</th>
<th>Primary Dose(s)</th>
<th>Booster Dose(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>For age 2 through 6 months</td>
<td>Give 3 doses of MenACWY-CRM or Hib-MenCY,4 8 weeks apart, and a 4th dose at 12–15 months. If possible, vaccination should begin at age 2 months.</td>
<td>Give MenACWY booster after 3 years followed by boosters every 5 years thereafter.</td>
</tr>
<tr>
<td>For age 7 through 23 months who have not initiated a series of MenACWY-CRM</td>
<td>Give 2 doses of MenACWY-CRM or Hib-MenCY,6 or, if 9–23 months, MenACWY-D.7 Separate the 2 doses by at least 12 weeks.8</td>
<td></td>
</tr>
<tr>
<td>For ages 2 through 55 years</td>
<td>Give 2 doses of MenACWY, 8 weeks apart.</td>
<td>Boost every 5 years with MenACWY.9,12</td>
</tr>
<tr>
<td>For age 56 years and older</td>
<td>Give 2 doses of MenACWY, 8 weeks apart.</td>
<td>Boost every 5 years with MenACWY.12</td>
</tr>
</tbody>
</table>

People with HIV infection or functional or anatomic asplenia (including sickle cell disease)

<table>
<thead>
<tr>
<th>Targeted Group by Age/Or Risk Factor</th>
<th>Primary Dose(s)</th>
<th>Booster Dose(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>For age 2 through 6 months</td>
<td>Give 3 doses of MenACWY-CRM or Hib-MenCY,4 8 weeks apart, and a 4th dose at 12–15 months. If possible, vaccination should begin at age 2 months.</td>
<td>Give MenACWY booster after 3 years followed by boosters every 5 years thereafter.</td>
</tr>
<tr>
<td>For age 7 through 23 months who have not initiated a series of MenACWY-CRM</td>
<td>Give 2 doses of MenACWY-CRM or Hib-MenCY,6 Separate the 2 doses by at least 12 weeks. Or, if using MenACY-D, give dose #1 at least 4 weeks following completion of pneumococcal conjugate vaccine series, and dose #2 at least 12 weeks after dose #1.7</td>
<td></td>
</tr>
<tr>
<td>For ages 2 through 55 years</td>
<td>Give 2 doses of MenACWY, 8 weeks apart.</td>
<td>Boost every 5 years with MenACWY.9,12</td>
</tr>
<tr>
<td>For age 56 years and older</td>
<td>Give 2 doses of MenACWY, 8 weeks apart.</td>
<td>Boost every 5 years with MenACWY.12</td>
</tr>
</tbody>
</table>

Footnotes

1. The minimum interval between doses of MenACWY is 8 weeks.
2. Prior receipt of Hib-MenCY is not sufficient for children traveling to the Hajj or African meningitis belt as it does not provide protection against serogroups A or W.
3. Seek advice of local public health authorities to determine if vaccination is recommended.
4. 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.
5. If initiating vaccination with MenACWY-CRM in a child age 7 through 23 months, dose 2 should be given no younger than age 12 months.
6. Hib-MenCY is not licensed for use in children age 18 months or older.
7. If MenACY-D is to be administered to a child with increased risk for meningococcal disease, it should be given either before or concomitantly with DTaP.
8. If child age 7 through 23 months will enter an endemic area during outbreaks caused by serogroups C or Y, two doses of MenACY-D or MenACWY at least 12 weeks apart.
9. If most recent dose given when younger than age 7 years, give booster after 3 years; if given at or after age 7 years, give booster after 5 years; then boost every 5 years thereafter.
10. Booster doses are recommended if the person remains at increased risk.
11. Persistent complement component deficiencies include C3, C5–C9, properdin, factor D, factor H, or taking Soliris (eculizumab).
12. If the person has a history of only 1 dose, give 2 doses at least 8 weeks after dose 1, then boost every 5 years.
Standing Orders Templates Updated for Administering MenACWY Vaccines to Children, Teens, and Adults

STANDING ORDERS FOR Administering Meningococcal ACWY Vaccine to Adults

Purpose
To reduce morbidity and mortality from meningococcal disease caused by serotypes A, C, W, or Y by vaccinating all adults 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 adults who meet any of the criteria below.

Procedure
1. Assess adults for need of vaccination against meningococcal disease according to the following criteria:
   - Routine meningococcal ACWY vaccination
     - 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
     - Diagnosis of persistent complement component deficiency may also be caused by the drug Soliris [eculizumab]
     - Diagnosis of anatomic or functional asplenia (including sickle cell disease)
     - Diagnosis of human immunodeficiency virus (HIV) infection
     - Part of an outbreak attributable to a vaccine serogroup
     - Anticipated travel to a country where meningococcal disease is hyperendemic or epidemic (e.g., the “meningitis belt” of sub-Saharan Africa)

Provide Vaccine Information Statements

Provide all patients 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 record the date the VIS was given to the patient. Provide a copy of the VIS in the patient’s native language, if one is available and does not exceed the state law or regulation requirements.

Review the vaccination schedule and criteria for MenACWY and MPSV:

For schedule of vaccination of adults with risk factors as identified by Advisory Committee on Immunization Practices Recommendations by Age and Risk Factor Findation™ found at www.immunize.org/catg.d/p2018.pdf.

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
     - Ages 11–12 years who have not received MenACWY at age 10 years or older
     - As catch-up for ages 13–15 years who have not received MenACWY at age 10 years or older
     - Ages 16 through 18 years and in need of dose #2

2. Screen for contraindications and precautions

Provide Vaccine Information Statements

Provide all patients 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.

Prepare to Administer Vaccine

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

<table>
<thead>
<tr>
<th>Age of Patient</th>
<th>Needle Gauge</th>
<th>Needle Length</th>
<th>Injection Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infants (age 2–12 months)</td>
<td>22–25</td>
<td>½”–1”</td>
<td>Anterolateral thigh muscle</td>
</tr>
<tr>
<td>Toddlers (age 1–2 years)</td>
<td>22–25</td>
<td>1¼”</td>
<td>Anterolateral thigh muscle</td>
</tr>
<tr>
<td>Children (age 3–10 years)</td>
<td>22–25</td>
<td>1½”–2”</td>
<td>Deltoit muscle of arm</td>
</tr>
<tr>
<td>Adolescents (age 11–21 years)</td>
<td>22–25</td>
<td>1½”–2”</td>
<td>Deltoit muscle of arm</td>
</tr>
</tbody>
</table>

Note: A VIS may be used in patients weighing less than 100 lbs (<40 kg) for IV injection if the deltoid muscle is not possible. 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.
Great Resources on www.Give2MCV4.org to Help Protect Preteens and Teens from Meningococcal A, C, W, Y Disease

- Meningococcal conjugate vaccine (MCV4) provides safe and effective protection against meningococcal disease caused by serogroups A, C, W, and Y.
- MCV4 is recommended at ages 11–12 followed by a second (booster) vaccination at age 16.
- According to CDC’s 2015 National Immunization Survey–Teen, only 33% of teens had received their recommended booster dose by 17 years of age.

Valuable Resource! Downloadable slide deck and speaker notes for healthcare professionals

www.Give2MCV4.org

More Resources

Visit www.Give2MCV4.org to view the full collection of resources designed to help healthcare professionals improve rates for MCV4 and all recommended adolescent vaccines, including:

- Recommending MCV4: What to Say and How to Say It
- Top 10 Ways to Improve Adolescent Immunization Rates
- Screening Checklist for Contraindications to HPV, MCV4, MenB, and Tdap
  www.immunize.org/catg.d/p4062.pdf

“Dear Colleague” Letter: Call-to-Action from IAC, CDC, and professional societies emphasizing the importance of the second dose of MCV4
www.immunize.org/mcv4letter
Meningococcal: Questions and Answers

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 which—A, C, Y, and W—cause almost all invasive disease. The other serogroups account for only about 1% of meningococcal disease. Each serogroup causes about one third of reported cases.

How does meningococcal disease spread? The disease is spread person-to-person through the exchange of droplets or through intimate contact (e.g., coughing, kissing, or sharing eating utensils). Meningococcal disease is more common in individuals than in the same 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 1 to 4 days, with a range of 2 to 10 days. Meningococcal disease requires a high bacterial load in the bloodstream (septicemia) or in the lining of the spinal fluid (meningitis). Because this disease progresses quickly, it is important to be diagnosed and treated as soon as possible.

What are the symptoms of meningococcal disease? The most common symptoms are high fever, chills, lethargy, and a sore throat. Other symptoms include skin lesions, bleeding or bruising, vomiting, diarrhea, and seizures.

How serious is meningococcal disease? Meningococcal disease is very serious. About 10 to 15% of people with meningococcal disease die even with appropriate antibiotic treatment. About 20% of those who recover have serious complications, such as hearing loss, limb loss, or brain damage.

What people are at special risk for meningococcal disease? The disease is most common in children younger than 5 years, especially those 1 to 3 years of age. The disease occurs each year in the United States since 2010. The disease is common in children younger than 5 years, especially children younger than age 1 year, people age 16 to 21 years, and people age 45 years and older.

How is meningococcal disease diagnosed? The disease can be diagnosed by a laboratory test of a fluid sample from the ears, skin lesion, spinal fluid, or blood. An electrocardiogram may also be used to diagnose the disease.

How is meningococcal disease treated? The disease can be treated with antibiotics such as penicillin or ceftriaxone, depending on the patient's age, severity of illness, and other factors. Early treatment is important and can help prevent death.

Can you get meningitis more than once? It is possible to get meningitis more than once. Meningococcal meningitis is a systemic infection caused by Neisseria meningitidis. Meningococcal meningitis can occur again in the same person as long as the patient has not been treated with antibiotics or other medications that can affect the immune system.

Meningococcal polysaccharide or conjugate vaccines provide no protection against meningococcal disease and meningococcal vaccines (MenACWY) are those in the United States. Vaccines for meningococcal serogroups B, C, and Y are available in the United States. What meningococcal vaccines are available in the United States? There are two meningococcal vaccines in the United States. Vaccine for meningoococal disease is recommended for all 16 through 23 years of age. Vaccine for meningococcal disease is recommended for all 13 through 23 years of age. Vaccine for meningococcal disease is recommended for all 13 through 23 years of age. Vaccine for meningococcal disease is recommended for all 13 through 23 years of age. Vaccine for meningococcal disease is recommended for all 13 through 23 years of age. Vaccine for meningococcal disease is recommended for all 13 through 23 years of age.

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Meningococcal disease is serious...

Make sure your child is protected!

**What is meningococcal disease?**
Meningococcal disease can be a life-threatening illness. It is caused by bacteria that can infect the blood, brain, and spinal cord. People often call it meningitis.

**How do you catch it?**
Meningococcus bacteria are spread through upper respiratory droplets, like saliva (kissing, living in close quarters). You can catch meningitis from a person who looks healthy.

**Is it serious?**
Yes! Meningococcal disease may respond to antibiotics, but quick medical attention is extremely important. Even with proper treatment, 10–15% of people with meningococcal disease die. Of the people who survive, many as 20% suffer from some serious complication, such as loss of an arm or leg, brain damage, or permanent hearing loss.

Meningitis can cause shock, coma, and death within hours of the first symptom.

**Am I at risk?**
The disease most often strikes older teens and young adults. If you travel internationally or have certain medical conditions, you may also be at risk.

**How can I protect myself from meningitis?**
Vaccination is the best way to prevent meningitis. There are different types of meningococcal vaccines: MenACWY conjugate and MenB (serogroup B). MenACWY is given to preteens and teens starting at age 11–12 years. A MenB series can also be given to teens and young adults starting at age 16.

People with certain medical conditions should also get vaccinated. Some should also get booster doses.

**Is meningococcal disease serious?**
Yes! Meningococcal disease may respond to antibiotics, but quick medical attention is extremely important. Even with proper treatment, 10–15% of people with meningococcal disease die. Of the people who survive, many as 20% suffer from some serious complication, such as loss of an arm or leg, brain damage, or permanent hearing loss.

Meningitis can cause shock, coma, and death within hours of the first symptom.

**Is my child at risk?**
The disease most often strikes older teens and young adults. If your child travels internationally to certain countries or has certain medical conditions, he or she may also be at increased risk.

**How can I protect my child from meningococcal disease?**
Vaccination is the best way to prevent meningitis. There are 2 meningococcal vaccines for children and teens: MenACWY and MenB. Preteens and teens need protection from meningitis. MenACWY is given to all preteens at age 11–12. A second dose is needed at 16. A MenB series can also be given to teens and young adults starting at age 16.

Children with certain medical conditions should also get vaccinated. Talk to your child’s healthcare provider about these vaccines.

For more information, visit www.vaccineinformation.org

Download from IAC’s website:
**FOR CHILDREN**
www.immunize.org/catg.d/p4316.pdf
**FOR ADULTS**
www.immunize.org/catg.d/p4410.pdf

For IAC’s easy-to-read fact sheets about all vaccine-preventable diseases (including Spanish translations), visit www.immunize.org/handouts/vaccine-summaries.asp.
What If You Don’t Vaccinate Your Child?

Your child is at risk for developing a vaccine-preventable disease

Vaccines were developed to protect people from dangerous and often fatal diseases. These diseases remain a threat. Vaccines are safe and effective protection.

Influenza or “flu” is a serious respiratory disease that can be deadly. Healthy babies and toddlers are especially vulnerable to complications from influenza. Every year children in the United States die from influenza.

Pertussis or “whooping cough” is an extremely dangerous disease for babies. It is not easily treated and can result in permanent brain damage or death. Since the 1980s, the number of cases of whooping cough has increased, especially among babies younger than 6 months of age and adolescents. Since 2010, several states have reported an increase in cases and outbreaks of whooping cough, including statewide epidemics in California and Washington. Whooping cough has killed many babies since 2010; most deaths were in those younger than 3 months of age.

Measles is a highly contagious disease that can lead to serious complications, including death. It remains common in many countries and has been brought into the United States by returning vacationers and foreign visitors. Vaccination caused measles to decline rapidly during the 1990s. Recently, vaccine hesitancy among parents in the United States and abroad has led to a growing number of children and teens who are not vaccinated and are unprotected from measles. This has led to outbreaks of measles in the United States, Canada, and other countries.

Chickenpox is very contagious. Before the development of a vaccine, chickenpox killed approximately 100 people every year in the United States. Most were previously healthy. Children infected with chickenpox must be kept out of day care or school for a week or more so they don’t spread the disease to others.

Your child can infect others in the community

Children who are not vaccinated can transmit vaccine-preventable diseases at schools and in the community.

- Unvaccinated children can infect babies who are too young to be fully immunized.
- Unvaccinated children can infect people of any age who can’t be immunized for medical reasons. This includes children and adults with leukemia and other cancers, immune system problems, and people of all ages receiving treatments or medications that suppress their immune systems.

Your child may have to be excluded from school or child care

During disease outbreaks, unvaccinated children may be excluded from school or child care to protect them and others. This can cause hardship for the child and parent.

Next steps…

We strongly encourage you to vaccinate your child. Please discuss any concerns you have with a trusted healthcare provider or call the immunization coordinator at your local or state health department. Your vaccination decision affects not only the health of your child, but also your family, your child’s friends, their families, and your community.

_for more information about vaccines, visit these websites:_

- **American Academy of Pediatrics**  
  www.healthychildren.org
- **Centers for Disease Control and Prevention**  
  www.cdc.gov/vaccines/parents
- **Every Child by Two**  
  www.vaccinateyourfamily.org  
  and www.ecbt.org
- **Immunization Action Coalition**  
  www.immunize.org and  
  www.vaccineinformation.org
- **Vaccine Education Center at the Children’s Hospital of Philadelphia**  
  www.vaccine.chop.edu

Technical content reviewed by the Centers for Disease Control and Prevention
Which Vaccines Do I Need Today?

Vaccines are an important part of helping you stay healthy. Which of these recommended vaccines do you need? Check the boxes that apply to you, and then talk this over with your healthcare provider.

Influenza ("flu") vaccine
- I have not had my flu vaccine this season (early fall through late spring).
- Your provider may give you a flu vaccine along with other recommended vaccines.

Pneumococcal ("pneumonia") vaccines [Prevnar 13 (PCV13) and Pneumovax 23 (PPSV23)]
- I am age 65 or older and:
  - I have never received any pneumonia vaccine (or I don’t remember if I have).
  - I have received only 1 pneumonia vaccine since I turned 65.
  - I have received 1 or 2 doses of pneumonia vaccine before I turned 65, and it’s now been more than 10 years since I received my last dose.
- I am younger than age 65 and:
  - I have never received any pneumonia vaccine AND at least one of the following applies to me:
    - I smoke cigarettes and I am age 19 years or older.
    - I have a chronic disease of the heart, lung (including asthma), if I am age 19 years or older, or I have sickle cell disease.
    - I have a weakened immune system due to cancer, Hodgkin’s disease, leukemia, myeloma, kidney failure, HIV/AIDS or receiving radiation therapy or taking certain medications.
    - I live in a nursing home or other long-term care facility.
    - I have had an organ or bone marrow transplant.
    - I have had my spleen removed or have had a cochlear (inner ear) implant or have had an implantable medical device that provides you with leaking spinal fluid.
  - I have received at least 3 tetanus- and diphtheria-containing shots.
  - I have received at least 3 tetanus- and diphtheria-containing shots in my lifetime more than 10 years after I received the last one.
- I am pregnant (and I am in my late second or third trimester of my pregnancy) and have not had a tetanus-containing shot in the past 10 years.
- I live in a nursing home or other long-term care facility.
- I have had an organ or bone marrow transplant.
- I have had my spleen removed or have had a cochlear (inner ear) implant or have had an implantable medical device that provides you with leaking spinal fluid.

Tetanus, diphtheria, and pertussis ("whooping cough")-containing vaccine (e.g., DTaP, DTap, DTP, Tetanus toxoid (T), DTPa)
- I have never received Tdap vaccine (or I don’t remember if I have).
- I have not received at least 3 tetanus- and diphtheria-containing shots.
- I have received at least 3 tetanus- and diphtheria-containing shots in my lifetime more than 10 years after I received the last one.
- I am a healthcare worker.
- I have received 1 MMR (or I don’t remember if I have).

Measles, mumps, rubella (MMR) vaccine
- I have never received MMR vaccine (or I don’t remember if I have).
- I have received only 1 MMR vaccine since I turned 65.
- I have received 1 or 2 doses of measles, mumps, and rubella (MMR) vaccine before I turned 65, and it’s now been more than 10 years since I received my last dose.
- I am age 60 or older and have never received a shingles vaccine (or I don’t know if I have).
- I have a weakened immune system due to infection (including HIV), disease, or medications.

Haemophilus influenzae type b (Hib) vaccine
- I have had an organ or bone marrow transplant.
- I have had an organ or bone marrow transplant.

Varicella ("chickenpox") vaccine
- I have had chickenpox disease, and I am a healthcare worker or frontline health care worker (e.g., nurse).
- I have had chickenpox disease, and I am a healthcare worker or frontline health care worker (e.g., nurse).
- I have had chickenpox disease, and I have never had chickenpox disease or received the vaccine (or I don’t remember if I have).
- I have received the varicella vaccine (varicella-zoster vaccine).

Meningococcal ("meningitis") vaccine
- I have had meningococcal disease, and I have received the meningococcal vaccine.
- I was born in 1957 or later.
- I have had meningococcal disease, and I have received the meningococcal vaccine.
- I have received the meningococcal vaccine.
- I have received the meningococcal vaccine.

Hepatitis A vaccine
- I have received the hepatitis A vaccine.
- I have received the hepatitis A vaccine.

Hepatitis B vaccine
- I have received the hepatitis B vaccine.
- I have received the hepatitis B vaccine.

Hepatitis C vaccine
- I have received the hepatitis C vaccine.
- I have received the hepatitis C vaccine.

Human papillomavirus (HPV) vaccine
- I have received the human papillomavirus (HPV) vaccine.
- I have received the human papillomavirus (HPV) vaccine.

Human immunodeficiency virus (HIV) vaccine
- I have received the human immunodeficiency virus (HIV) vaccine.
- I have received the human immunodeficiency virus (HIV) vaccine.

Immunization Action Coalition

Visit www.immunize.org/catg.d/p4036.pdf

Download and copy this screening questionnaire for your patients to fill out.

NEWLY UPDATED!
Which Vaccines Do I Need Today?

This checklist helps you determine which vaccines your adult patients need.

Needle Tips

1. Call your local health department or contact the Immunization Action Coalition for guidance.
2. Consider treatment with Zostavax for patients who are more than 65 years of age or have certain medical conditions, such as diabetes, heart disease, or kidney disease.
3. If you’re not sure whether you need the hepatitis B vaccine, call your healthcare provider.
5. For more information on vaccines and immunizations, visit the Immunization Action Coalition website at www.immunize.org.

Immunization Action Coalition

16 NEEDLE TIPS • December 2016 • Immunization Action Coalition • (651) 647-9009 • www.immunize.org • www.vaccineinformation.org
IAC’s Temperature Logs Updated for Your Use

Refrigerator Temperature Logs
Celsius www.immunize.org/catg.d/p3037c.pdf
Fahrenheit www.immunize.org/catg.d/p3037f.pdf

Freezer Temperature Logs
Celsius www.immunize.org/catg.d/p3038c.pdf
Fahrenheit www.immunize.org/catg.d/p3038f.pdf

IAC has updated its Celsius and Fahrenheit temperature logs for refrigerators and freezers. They’re ready for you to download, copy, and use. All are CDC reviewed.

Temperature Log for Refrigerator – Celsius

Day
Time
1
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3
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11
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31

Min/Max Temp

1. Write the initials below in “Staff Initials,” and note the time in “Exact Time.”
2. Record the out-of-range temps and the room temp in the “Action” area on the bottom of the log.
3. Take action if temp is out of range—too warm (above 5ºC) or too cold (below 2ºC).
4. Document the action taken on the “Vaccine Storage Troubleshooting Record” on page 3.

Temperature Log for Refrigerator – Fahrenheit

Day
Time
1
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Min/Max Temp

1. Write the initials below in “Staff Initials,” and note the time in “Exact Time.”
2. Record the out-of-range temps and the room temp in the “Action” area on the bottom of the log.
3. Take action if temp is out of range—too warm (above 46ºF) or too cold (below 36ºF).
4. Document the action taken on the “Vaccine Storage Troubleshooting Record” on page 3.

Temperature Log for Freezer – Celsius

Day
Time
1
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Min/Max Temp

1. Write the initials below in “Staff Initials,” and note the time in “Exact Time.”
2. Record the out-of-range temps and the room temp in the “Action” area on the bottom of the log.
3. Take action if temp is out of range—too warm (above 5ºC) or too cold (below -17ºC).
4. Document the action taken on the “Vaccine Storage Troubleshooting Record” on page 3.

Temperature Log for Freezer – Fahrenheit

Day
Time
1
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Min/Max Temp

1. Write the initials below in “Staff Initials,” and note the time in “Exact Time.”
2. Record the out-of-range temps and the room temp in the “Action” area on the bottom of the log.
3. Take action if temp is out of range—too warm (above 46ºF) or too cold (below -4ºF).
4. Document the action taken on the “Vaccine Storage Troubleshooting Record” on page 3.

Vaccine Storage Troubleshooting Record

Use this form to record information about vaccine storage and any issues that arise. This can help you and your staff take action if needed to ensure vaccines are stored properly.

Take action if temp is out of range—too warm (above 8ºC) or too cold (below 2ºC). Do not discard vaccines unless directed by your state/local health department and/or the manufacturer(s).

Some of the event that was not similar to this event, have there been other changes in the inventory of vaccines: see other bottles in refrigerator and may have a

Additional Tool
Vaccine Storage Troubleshooting Record: www.immunize.org/catg.d/p3041.pdf
Use This Checklist to Maximize Protection of Your Valuable Vaccine Supply

Checklist for Safe Vaccine Storage and Handling

Are you doing everything you should to safeguard your vaccine supply? Review this list to see where you might make improvements in your vaccine management practices. Check each listed item with either or .

Establish Storage and Handling Policies

1. We have designated a primary vaccine coordinator and at least one alternate coordinator to be in charge of vaccine storage and handling at our facility.

2. Both the primary and alternate vaccine coordinator(s) have completed reviewed either CD Storage & Handling Toolkit (www.cdc.gov/vaccines/prof/admin/delivery/storage/handling toolkit/storage.html) or equivalent training materials offered by our state or local health department’s immunization program.

3. We have detailed, up-to-date, written standard operating procedures for general vaccine re-stocking and procedures for routine activities and an emergency vaccine retrieval and storage outage and other problems. Our procedures are based on CDC’s Vaccine Storage & Handling and/or on instruction from our state or local health department’s immunization program.

4. We review these policies with all staff annually and with new staff, including temporary staff, as they are hired.

Log In New Vaccine Shipment

5. We maintain a vaccine inventory log that we use to document the following:
   a. Name and number of doses received
   b. Date we received the vaccine
   c. Condition of vaccine when we received it
   d. Vaccine manufacturer and lot number
   e. Vaccine expiration dates
   f. We do not use exposed vaccines until our state/local health department or appropriate vaccine manufacturers.

6. We use only calibrated thermometers* and are calibrated every 3 months.

7. We store vaccines in units with enough room to maintain the year’s largest inventory without crowding.

8. We store vaccines in units with easy access to the freezer compartment inside the refrigerator.

9. If we must use a combination refrigerator-freezer unit, we store vaccines only in the refrigerator section of the freezer (often near the top shelf). In general, we try to avoid storing vaccines on the top shelf, and we place water bottles in this location.

10. We keep the temperature logs on file for at least 3 years.

11. If out-of-range temperatures occur in the unit, we complete the checklist to see where you might make improvements.

Use Proper Storage Equipment

12. We perform regular maintenance on our vaccine storage units to assure optimal functioning. For example, we:
   a. Use a thermometer that:
      i. Uses an active display to provide continuous monitoring information.
      ii. Is digital and has a detachable probe that has been buffered against sudden temperature changes.
      iii. Has a digital data logger that indicates current, minimum, and maximum temperatures.
      iv. Can measure temperatures within ±0.5ºC (±1ºF).
      v. Has a low-battery indicator.
      vi. Maintains the refrigerator temperature at 2–8ºC (36–46ºF), and we aim for 5ºC (40ºF).
      vii. Maintain the freezer temperature at ≤-20ºC (≤-4ºF).
   b. Inspect the unit that we use to store vaccines.
   c. Check the temperature settings. After changing the setting, we give the unit at least a day to stabilize its temperature.
   d. Have a “Do Not Use” warning label (e.g., www.immunize.org/cgi/dj03066.pdf) by the circuit breaker for the electrical outlets. Briefly review the electrical outlets. Both signs include emergency contact information.
   e. Review the electrical outlets. Both signs include emergency contact information.

Ensure Proper Operation of Storage Units

13. We perform regular maintenance on our vaccine storage units to assure optimal functioning. For example, we:
   a. Use a “Do Not Use” sign (e.g., www.immunize.org/cgi/dj03066.pdf) next to the electrical outlets for the refrigerator and freezer and a “Do Not Use” warning label (e.g., www.immunize.org/cgi/dj03066.pdf) by the circuit breaker for the electrical outlets. Both signs include emergency contact information.
   b. Perform regular maintenance on our vaccine storage units to assure optimal functioning. For example, we:
   c. Have a general knowledge of electrical safety and the appropriate procedures for disconnecting power in an emergency.
   d. Have a general knowledge of electrical safety and the appropriate procedures for disconnecting power in an emergency.

Maintain Correct Temperatures

14. We use a thermometer that:
   a. Uses an active display to provide continuous monitoring information.
   b. Is digital and has a detachable probe that has been buffered against sudden temperature changes.
   c. Has a digital data logger that indicates current, minimum, and maximum temperatures.
   d. Can measure temperatures within ±0.5ºC (±1ºF).
   e. Has a low-battery indicator.
   f. Maintains the refrigerator temperature at 2–8ºC (36–46ºF), and we aim for 5ºC (40ºF).
   g. Maintains the freezer temperature at ≤-20ºC (≤-4ºF).
   h. Maintains the freezer temperature at ≤-20ºC (≤-4ºF).
   i. Maintains the freezer temperature at ≤-20ºC (≤-4ºF).

Take Emergency Action As Necessary

15. In the event that vaccines are exposed to indoor conditions and are not usable, we:
   a. Return them to the manufacturer.
   b. Remove them from the storage unit.
   c. Call our local health department or vaccine manufacturer for consultation.
   d. Address any issues such as the location of vaccine exposure.
   e. Address any issues such as the location of vaccine exposure.
   f. Address any issues such as the location of vaccine exposure.

16. If we must use a combination refrigerator-freezer unit, we store vaccines only in the refrigerator section of the freezer (often near the top shelf). In general, we try to avoid storing vaccines on the top shelf, and we place water bottles in this location.

17. We keep the temperature logs on file for at least 3 years.

18. If out-of-range temperatures occur in the unit, we complete the checklist to see where you might make improvements.

19. We keep extra containers of water in the refrigerator (e.g., in the door and/or on the floor of the unit where the vegetable bins were located) to help maintain cool temperatures. We keep ice packs, saw-filled containers, or frozen water bottles in the freezer to help maintain cold temperatures and to have frozen water bottles available for conditioning in the event of an emergency.

20. We keep extra containers of water in the refrigerator (e.g., in the door and/or on the floor of the unit where the vegetable bins were located) to help maintain cool temperatures. We keep ice packs, saw-filled containers, or frozen water bottles in the freezer to help maintain cold temperatures and to have frozen water bottles available for conditioning in the event of an emergency.

21. If the temperature log prompts us to insert an “X” by the temperature that’s preprinted on the form, we:
   a. Call our local health department or vaccine manufacturer for consultation.
   b. Call our local health department or vaccine manufacturer for consultation.
   c. Call our local health department or vaccine manufacturer for consultation.

22. If we must use a combination refrigerator-freezer unit, we store vaccines only in the refrigerator section of the freezer (often near the top shelf). In general, we try to avoid storing vaccines on the top shelf, and we place water bottles in this location.

23. We keep extra containers of water in the refrigerator (e.g., in the door and/or on the floor of the unit where the vegetable bins were located) to help maintain cool temperatures. We keep ice packs, saw-filled containers, or frozen water bottles in the freezer to help maintain cold temperatures and to have frozen water bottles available for conditioning in the event of an emergency.

24. If out-of-range temperatures occur in the unit, we complete the Vaccine Storage Troubleshooting Record (www.immunize.org/cgi/dj03041.pdf) to document actions taken when the problem was discovered and what was done to prevent a recurrence of the problem.

Checklist for Safe Vaccine Storage and Handling (continued)

4.  We review these policies with all staff annually and with new staff, including temporary staff, when they are hired.

3.  We have detailed, up-to-date, written standard operating procedures for general vaccine management, including procedures for routine activities and an emergency vaccine retrieval and storage outage and other problems. Our procedures are based on CDC’s Vaccine Storage & Handling Toolkit and/or on instruction from our state or local health department’s immunization program.

4.  We review these policies with all staff annually and with new staff, including temporary staff, when they are hired.

Checklist for Safe Vaccine Storage and Handling (continued)  page 2 of 3

Ensure Proper Operation of Storage Units

11. We have a “Do Not Use” sign (e.g., www.immunize.org/cgi/dj03066.pdf) next to the electrical outlets for the refrigerator and freezer and a “Do Not Use” warning label (e.g., www.immunize.org/cgi/dj03066.pdf) by the circuit breaker for the electrical outlets. Briefly review the electrical outlets. Both signs include emergency contact information.

12. We perform regular maintenance on our vaccine storage units to assure optimal functioning. For example, we:

Maintain Correct Temperatures

13. We maintain the refrigerator temperature at 2–8ºC (36–46ºF), and we aim for 5ºC (40ºF).

14. We maintain the freezer temperature at ≤-20ºC (≤-4ºF). We maintain the freezer temperature at ≤-20ºC (≤-4ºF).

15. We maintain the refrigerator temperature at 2–8ºC (36–46ºF), and we aim for 5ºC (40ºF).

16. We maintain the freezer temperature between -50ºC and -15ºC (15ºF and -19ºC).

17. We perform general maintenance on our vaccine storage units to assure optimal functioning. For example, we:

18. We perform general maintenance on our vaccine storage units to assure optimal functioning. For example, we:

19. We perform general maintenance on our vaccine storage units to assure optimal functioning. For example, we:

20. We perform general maintenance on our vaccine storage units to assure optimal functioning. For example, we:

21. We perform general maintenance on our vaccine storage units to assure optimal functioning. For example, we:

22. We perform general maintenance on our vaccine storage units to assure optimal functioning. For example, we:

Visit www.immunize.org/catg.d/p3035.pdf
Vaccine Handling Tips

REMEMBER: Improperly stored or outdated vaccines won’t protect your patients!

Manage vaccine inventories.
Inventory your vaccine supplies at least monthly and before placing an order. Expired vaccine must never be used and it becomes “cash in the trash!”

Always use the vaccine with the soonest expiration date first.
Move vaccine with the soonest expiration date to the front of the storage unit and mark it to be used first. These actions help ensure it will be picked up first by someone selecting vaccine from the unit.

Store vaccine appropriately.
Place vaccines in refrigerator or freezer immediately upon receiving shipment. Keep vaccine vials in their original packaging. Place vaccine in clearly labeled wire baskets or other open containers with a 2–3" separation between baskets and 4" from wall of unit. Separate or clearly mark vaccines to distinguish those that were supplied from your state’s Vaccines for Children program (or other state-funded source) from those that were privately purchased. Do not store vaccines in the door or on the floor of the unit.

Stabilize temperatures.
Store ice packs in the freezer and large jugs of water in the refrigerator along with the vaccines. This will help maintain a stable, cold temperature in case of a power failure or if the refrigerator or freezer doors are opened frequently or are accidentally left open. Because frequent opening of either the refrigerator or freezer door can lead to temperature variations that could affect vaccine efficacy, you should not store food or beverages in the refrigerator or freezer.

Safeguard the electrical supply to the refrigerator.
Make sure the refrigerator and freezer are plugged into outlets in a protected area where they cannot be disconnected accidentally. Label the refrigerator, freezer, electrical outlets, fuses, and circuit breakers on the power circuit with information that clearly identifies the perishable nature of vaccines and the immediate steps to be taken in case of interruption of power.

† If your building has auxiliary power, use the outlet supplied by that system.

‡ For easy help with labeling units and power supplies, see IAC signs “Do Not Unplug Refrigerator or Freezer” (www.immunize.org/catg.d/p2090.pdf) and “Do Not Stop Power to Circuit Breaker” (www.immunize.org/catg.d/p2091.pdf). For guidance on steps to take during a power interruption, see IAC’s “Emergency Response Worksheet” (www.immunize.org/catg.d/p3051.pdf).

DTaP, Tdap, Td, DT
Hepatitis A
Hepatitis B
H. influenzae type b (Hib)
Human papillomavirus
Influenza
Polio (IPV)
MMR
Meningococcal
Pneumococcal
Rotavirus

MMR may be stored in either the freezer or the refrigerator.

† Refer to package insert for specific instructions on the storage of each vaccine. If you have questions about the condition of the vaccine upon arrival, immediately place the vaccine in recommended storage, mark it “do not use,” and then call your state health department or the vaccine manufacturer(s) to determine whether the potency of the vaccine(s) has been affected. For other questions, call the immunization program at your state or local health department.

‡ For easy help with labeling units and power supplies, see IAC signs “Do Not Unplug Refrigerator or Freezer” (www.immunize.org/catg.d/p2090.pdf) and “Do Not Stop Power to Circuit Breaker” (www.immunize.org/catg.d/p2091.pdf). For guidance on steps to take during a power interruption, see IAC’s “Emergency Response Worksheet” (www.immunize.org/catg.d/p3051.pdf).
These products are available for purchase from the Immunization Action Coalition

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

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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.

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

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 22. Quantity discounts are available.

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

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

During my more than 25 years in the field of immunization education, I have not seen another book that is so brimming with state-of-the-science information. – Deborah L. Wexler, MD, Executive Director, IAC

Purchase The Vaccine Handbook (560 pages) from IAC at www.immunize.org/vaccine-handbook. $29.95 + shipping - Discount pricing available.
Help Us Increase Immunization Rates!

The Immunization Action Coalition (IAC) is the nation’s premier source of immunization information for healthcare professionals. Your contribution directly funds our websites, publications, email news service, and handouts that improve the delivery of vaccines and motivate patients to get immunized!

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Here is my contribution

I am a □ new □ renewing contributor

☐ $100  ☐ $50  ☐ $75  ☐ $250
☐ $500  ☐ $750  ☐ $1,000  ☐ other $________

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My contribution is □ in honor of  □ in memory of:

NAME OF HONOREE___________________________

OCCASION (birthday, anniversary, memorial, etc.)________________________

Please send a letter of acknowledgement to:

NAME (if different)___________________________

INSTITUTION (if applicable)___________________________

ADDRESS___________________________

CITY / STATE / ZIP___________________________

A gift to IAC is a thoughtful way to honor or remember someone. When you make an honorary or memorial gift, we will send your honoree an acknowledgement that expresses our sincere thanks for the support your gift provides.

☐ IAC may identify me to the honoree as the source of this contribution.

☐ IAC may acknowledge the amount of the gift to the honoree.

A separate letter will be sent to you (the donor) for your tax records.

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Please help us prevent disease and save lives!
Order Essential Immunization Resources from IAC

Immunization record cards for all: for children and teens, for adults, for a lifetime!

Immunization record cards give healthcare professionals a way to help patients maintain a permanent record of their vaccinations. Having one’s own vaccination record is handy for patients when they enter daycare, kindergarten, or college; change healthcare providers; or travel abroad. The Immunization Action Coalition offers three record cards: child and teen, adult, and lifetime. Each is designed for a specific age group and lists all vaccines recommended for people in that age group. Sized to fit in a wallet, each is brightly colored to stand out and is printed on durable rip-, smudge-, and water-proof paper. To order record cards or any of our other essential immunization resources, print out and mail or fax the form below, or place your order online at www.immunize.org/shop.

It’s convenient to shop IAC online at www.immunize.org/shop

### Order Essential Immunization Resources

- **The Vaccine Handbook: A Practical Guide for Clinicians** (*The Purple Book*) by Gary Marshall, MD
  - Fifth edition • 2015 • 560 pages • $29.95 + shipping
  - Order online at www.immunize.org/vaccine-handbook

- **Hepatitis B: What Hospitals Need to Do to Protect Newborns**
  - Soft-cover edition • 2013 • 84 pages • $20 + shipping
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### How to Place an Order

**By Credit Card:** Order easily online at our secure shopping cart at www.immunize.org/shop.

**By Check, Purchase Order, or Credit Card:** Print out this page, fill out the necessary information, and either fax this page to: (651) 647-9131 or mail this page to: Immunization Action Coalition 2550 University Avenue West, Suite 415 North Saint Paul, MN 55114

Our federal ID# is 41-1768237.

**For Questions or International Orders:** Contact us by phone at (651) 647-9009 or email admininfo@immunize.org

Thank you for your support of the Immunization Action Coalition. We depend on you!

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*The CV Code is the Credit Verification Code, the additional 3- or 4-digit number on your credit card.

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Organization

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City/State/Zip

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TOTAL FOR PURCHASES $ __________

TOTAL FOR PURCHASES AND CONTRIBUTION $ __________

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