



VACCINES 101: INFORMATION FOR WIC STAFF

2020



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Introduction

Vaccinate Your Family created the *Vaccines 101: Information for WIC Staff* booklet to provide WIC staff with an overview of key vaccine messages and a list of vaccine-preventable diseases, their symptoms, and the vaccines that protect against them. The booklet also provides an overview of how WIC staff can screen young children to determine if they are up-to-date on their vaccinations and how to refer those individuals in need of lifesaving vaccines to an appropriate provider. A list of immunization resources can be found at the end of this booklet.

Key Messages about Vaccines

Why are vaccines important?

- **Vaccines save lives.** Vaccines offer the best-known protection against a number of devastating illnesses, but they must be given according to the Centers for Disease Control and Prevention's (CDC) recommended immunization schedules ([cdc.gov/vaccines](https://www.cdc.gov/vaccines)) in order to best protect children, adolescents and adults.
- Measles is a very contagious disease that can cause serious health complications, hospitalizations and even death. The U.S. continues to experience measles outbreaks throughout the country. **According to CDC, there were 1,282 cases of measles in 31 states in 2019**, the most reported since 1992. Travelers with measles continue to bring the disease with them into the U.S. and then spread it to others. The majority of people who got measles during the recent outbreaks in the U.S. were unvaccinated.
- Large outbreaks of pertussis (also known as whooping cough) continue to occur in the U.S. **Infants under 1 year old are at the greatest risk for serious illness and death from pertussis.** There were 15,609 cases of pertussis reported to CDC in 2018 and 15,662 cases in 2019. Pertussis outbreaks continue in 2020. **To reduce the risk of pertussis in newborns, pregnant women should receive a Tdap vaccine during the 3rd trimester of every pregnancy.**
- **Young children and pregnant women are at high risk of severe flu and its complications.** During the 2019-2020 influenza season, 188 pediatric deaths due to flu were reported to the CDC. **Flu vaccine can be lifesaving in children.** A 2017 study showed that flu vaccination can significantly reduce a child's risk of dying from flu. **Flu vaccine has also been shown to help protect women and their babies during and after pregnancy.**
- **If we stop vaccinating, the limited number of vaccine-preventable disease cases we have in the United States could very quickly become tens or hundreds of thousands of cases.**
- To read and watch personal stories about families impacted by vaccine-preventable diseases, visit Vaccinate Your Family (vaccinateyourfamily.org/why-vaccinate/personal-stories), Families Fighting Flu (familiesfightingflu.org) and Shot By Shot (shotbyshot.org).

What happens when we delay vaccinations or don't vaccinate our children?

- **Parents who obtain vaccination exemptions for their children are putting their children at risk for serious diseases.** For example, studies have shown that children with exemptions are 22 times more likely to get measles than non-exempt peers.
- Parents who choose to delay vaccines or not vaccinate their children are putting their children and others in their community at risk. Diseases can travel quickly through a community and make a lot of people sick. **However, when enough people are vaccinated against a certain disease, the germs can't travel as easily from person to person, and the entire community is less likely to get the disease. This is known as "community immunity" or "herd immunity." In order to protect everyone in the community, including those who cannot be immunized, from vaccine-preventable diseases, immunization rates must remain high.**

How can we protect ourselves, our families and our communities?

- Immunizing yourself can protect others around you from getting dangerous vaccine-preventable diseases, especially young babies who have not yet received all of their vaccines and those who cannot be vaccinated due to medical reasons. We must each do our parts to limit everyone's exposure to diseases. **Just as you count on others not to knowingly expose you to dangerous illnesses, they rely on you.**
- **When a woman gets vaccinated against flu and pertussis (also known as whooping cough) during pregnancy, they are not only protecting themselves, but they are also giving some early disease protection to their babies.** When a pregnant woman gets vaccinated, antibodies are transferred to her developing baby, protecting the newborn for the first few months of life. However, this immunity decreases over time. That's why infants need to be vaccinated according to the CDC's recommended immunization schedule (vaccinateyourfamily.org/babies-children) to stay protected against 14 serious and potentially life-threatening diseases.
- **The CDC, the American College of Obstetricians and Gynecologists (ACOG), the American College of Nurse-Midwives (ACNM), the American Academy of Family Physicians (AAFP) & the Association of Women's Health, Obstetric and Neonatal Nurse (AWHONN) all strongly recommend flu and pertussis (Tdap) vaccinations for pregnant women.**
- Parents should also request that anyone who will be around their newborn, including healthcare providers, childcare providers, friends and family members, be up-to-date on their pertussis (DTaP or Tdap) and flu vaccinations **at least two weeks before meeting the new baby.**
- **People should get information about vaccines and their family's health from their doctor and credible organizations** such as the CDC (cdc.gov/vaccines/parents), the American Academy of Pediatrics (healthychildren.org), ACOG (immunizationforwomen.org), and Vaccinate Your Family (vaccinateyourfamily.org).

Why is it important to follow the recommended vaccine schedules?

- Doctors, scientists and public health experts work to develop the childhood and adult vaccination schedules in the U.S., giving people of all ages the most effective and safest protection from diseases possible. **By following the CDC's recommended immunization**



schedule, parents can help give their children immunity *before* they are exposed to potentially life-threatening diseases.

- **“Non-standard” vaccine schedules, which are not tested or approved by experts, put children at risk.** It is not advisable to skip or delay vaccines, as this will leave a child susceptible to diseases for a longer period of time, a practice that can prove deadly for vulnerable infants. If a baby is not too young to get the disease, he or she is not too young to get the vaccine.

Are vaccines safe?

- **Since vaccines are administered to otherwise healthy people, they are among the most rigorously tested and safest medical products on the market.** Once they are approved by the U.S. Food and Drug Administration (FDA) and recommended for use by the CDC’s Advisory Committee on Immunization Practices (ACIP), continuous monitoring by four safety systems in the U.S. – working together – helps to ensure that each dose of the vaccine is safe.
- Concerns about the safety of vaccines and the possible link between vaccines and autism (and vaccines and other health conditions) are not supported by scientific evidence.
- **No credible, scientific study has ever found a link between vaccines and autism. In fact, Andrew Wakefield, the researcher who made this initial claim, has since had his medical license revoked. Wakefield’s study, which was proven to be falsified, has been retracted from the journal that originally published it.**
- Vaccines may cause mild side effects (such as fever or soreness at the injection site). Vaccines may also have severe, but extremely rare side effects (such as an allergic reaction). **The potential harm from the actual diseases far outweighs the risk for vaccine side effects.**
- **For answers to questions about vaccines, please visit the Vaccinate Your Family website.**

Can you tell me more about how vaccines are tested for safety?

- **Since vaccines are given to healthy people, they go through a more rigorous approval process than drugs that are given to cure sick people.** It typically takes 15-20 years and an average of \$1 billion to thoroughly test a new vaccine. **Before a vaccine can be considered for approval by the FDA, a vaccine manufacturer must show it is safe and effective through three phases of clinical trials. After a vaccine is licensed by FDA and recommended by the ACIP, there are four systems in place in the U.S. that work together to help monitor the safety of vaccines and identify any rare side effects that may not have been found in clinical trials.**
 - **[Vaccine Adverse Events Reporting System \(VAERS\)](#)** - VAERS is a passive reporting system co-managed by the FDA and the CDC. That means it relies on individuals to report vaccine reactions. Anyone can report a reaction or injury, including healthcare providers, patients and patients’ representatives, such as caregivers or attorneys. **However, it is important to note that VAERS data alone can’t be used to answer the question, “Does a certain vaccine cause a certain side effect?” This is because adverse events reported to VAERS *may or may not* be caused by vaccines.** There are reports in VAERS of common conditions that occur just by chance after vaccination.
 - **[Vaccine Safety Datalink \(VSD\)](#)** - VSD is a collaboration between the CDC’s Immunization Safety Office and eight health care organizations across the country. It conducts studies based on questions or concerns raised from the medical literature and reports to VAERS.

In addition, when new vaccines are recommended or if changes are made in how a vaccine is recommended, VSD will monitor the safety of these vaccines.

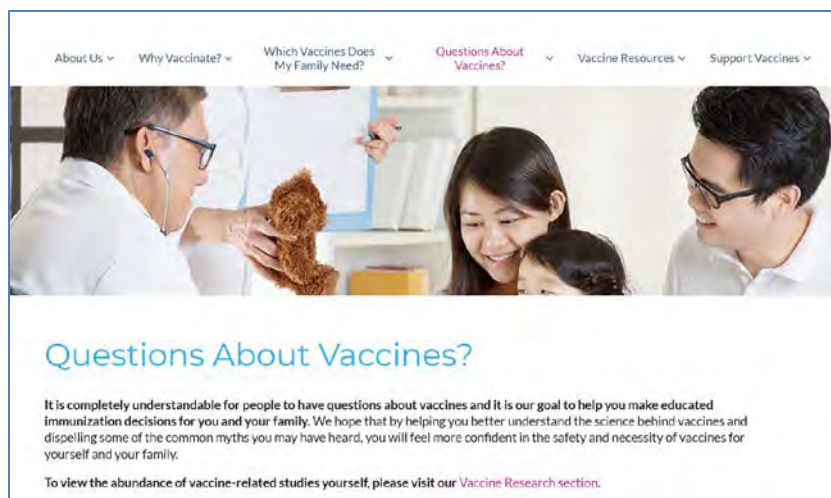
- **Clinical Immunization Safety Assessment Project (CISA)** – CISA is a national network of vaccine safety experts from the CDC's Immunization Safety Office, seven medical research centers and other partners. CISA addresses vaccine safety issues, conducts high quality clinical research and assesses complex clinical adverse events following vaccination. CISA also helps to connect clinicians with experts who can help consult on vaccine safety questions related to individual patients.
- **The Post-Licensure Rapid Immunization Safety Monitoring System (PRISM)** – PRISM is a partnership between the FDA and leading health insurance companies. PRISM has access to information for over 190 million people allowing it to identify and analyze rare health outcomes that would otherwise be difficult to assess.
- **If a relationship between a side effect and a vaccine is found, the scientific community is alerted while the vaccine's safety is reviewed. The vaccine may be temporarily or permanently suspended from use.**

What are the ingredients in vaccines?

- **The main ingredients in vaccines are antigens, which are small amounts of the bacteria or virus against which the person is being vaccinated.** Antigens are the parts of the vaccine that encourage your immune system to create antibodies to fight against future infections. To make sure that the vaccines cannot cause the disease you are trying to protect against, the antigens are altered or weakened. **Like many of the foods we eat and beverages we drink, vaccines also contain a small amount of additional ingredients, and each has a *specific, necessary function*.** These ingredients may be added to the vaccine to make it more effective, sterile and/or safe. **These additional ingredients have been studied and are safe for humans in the amount used in vaccines.**

Questions about Vaccines? Find Answers on the Vaccinate Your Family Website.

www.vaccinateyourfamily.org/questions-about-vaccines



Information about Vaccines and Vaccine-Preventable Diseases



Diphtheria

Diphtheria is a serious bacterial disease that causes heart and nerve problems. The disease can be spread from an infected person (or someone who carries the bacteria but has no symptoms) by coughing and sneezing. **Diphtheria can also be spread by contaminated objects, like toys. A person can spread the disease for up to two weeks after infection.**

The diphtheria toxin can spread through the bloodstream to other organs and cause significant damage such as injury to the heart, kidneys and other organs. Nerve damage and paralysis can also result.

Approximately 1 out of 10 people who get diphtheria dies from the disease. In children younger than 5 years of age, as many as 1 out of 5 who get diphtheria die. In the 1920s, there were 100,000-200,000 reported cases of diphtheria each year and 13,000-15,000 people died from the disease. Since the introduction of the vaccine for diphtheria, the disease has dramatically declined. In the past decade, only 5 cases have been reported in the U.S.

Signs and symptoms of diphtheria usually begin two to five days after a person is infected, and may include:

- A sore throat and hoarseness
- Painful swallowing
- Swollen glands (enlarged lymph nodes) in the neck
- A thick coating on the back of the nose or throat. It may be white or grayish. The coating makes it hard to breathe or swallow.
- Mild fever (101 degrees or less) and chills

The DTaP vaccine protects young children from diphtheria, tetanus and pertussis (whooping cough). The Tdap vaccine protects older children (7 years and older) and adults against these three diseases.



Haemophilus influenzae type b (Hib)

***Haemophilus influenzae* type b (Hib) is a bacteria that causes serious illness and most often affects children under 5 years old. The most common types of serious Hib disease are meningitis (infection of the covering of the brain and spinal cord), pneumonia (lung infection), joint infection, skin infection, bone infection, bacteremia (blood stream infection) and epiglottitis (infection and swelling of the throat). Hib disease can cause lifelong disability and can be deadly.**

Even with treatment, as many as 1 out of 20 children with Hib meningitis die. As many as 1 out of 5 children who survive Hib meningitis will have brain damage or become deaf. Most children with invasive Hib disease need care in the hospital.

Hib spreads when an infected person coughs or sneezes. Usually, the Hib bacteria stay in a person's nose and throat and do not cause illness. But if the bacteria spread into the lungs or blood, the person will become very sick.

Hib causes different symptoms depending on which part of the body is affected.

- Fever, headache, confusion, stiff neck, and pain when looking into bright lights (meningitis)
- Poor eating and drinking, and vomiting (meningitis in babies)
- Fever and chills, headache, cough, shortness of breath, and chest pain (pneumonia)
- Fever and chills, excessive tiredness, and confusion (bacteremia)
- Trouble breathing (epiglottitis)

The Hib vaccine is the best prevention against this dangerous disease. Before the Hib vaccine was available, Hib caused serious infections in 20,000 children under the age of 5 and killed about 1,000 children each year. Since the vaccine's introduction in 1987, the incidence of severe Hib disease has declined by 99 percent in the U.S.



Hepatitis A

Hepatitis A is a disease of the liver caused by the hepatitis A virus. It can range in severity from a mild illness lasting a few weeks to a severe illness lasting several months.

Hepatitis A is usually spread by contact with people who are infected or from contact with objects, food, water or drinks contaminated by the feces of an infected person, which can easily happen if someone doesn't properly wash his or her hands after using the toilet.

Not all people with hepatitis A have symptoms. Adults are more likely to have symptoms than children.

If symptoms develop, they usually appear 2 to 6 weeks after being infected and may include:

- Fatigue
- Nausea and vomiting
- Loss of appetite
- Fever
- Dark urine
- Gray-colored stools
- Joint pain

- Yellowing of the skin and eyes
- Severe stomach pains and diarrhea (mainly in children)

The hepatitis A vaccine is recommended for children, and can prevent infection with the virus. Some adults with high risk of getting hepatitis A and its serious complications need a hepatitis A vaccine too. Learn more about vaccines for adults on the Vaccinate Your Family website at <http://www.vaccinateyourfamily.org/adults>.

Since the introduction of the hepatitis A vaccine in 1995, rates of the disease have been on the decline. **However, since 2016, there have been large outbreaks of hepatitis A in 33 states with approximately 34,000 cases, 20,825 hospitalizations and 333 deaths.**



Hepatitis B

Hepatitis B is a contagious liver disease caused by the hepatitis B virus. For some, hepatitis B infection becomes chronic, leading to liver failure, liver cancer or cirrhosis — a condition that causes permanent scarring of the liver.

A person who is unaware that they have hepatitis B can pass the disease on to a baby when giving birth (spread from infected mother to baby); through contact with their blood from cuts or sores, by biting another person; through sharing personal items such as toothbrushes; or from sharing food that was chewed (for a baby).

Not all people with hepatitis B have symptoms. Infants and children usually show no symptoms. However, if they occur, they usually appear about three or four months after infection and can range from mild to severe, including:

- Dark urine
- Fever
- Joint, muscle, and stomach pain
- Loss of appetite
- Nausea, diarrhea, and vomiting
- Fatigue
- Yellowing of the skin and the whites of the eyes (jaundice)

According to the CDC, up to 1.4 million people in the U.S. may have chronic hepatitis B infection. Each year about 2,000 people in the U.S. die from hepatitis B-related liver disease.

The best way to prevent hepatitis B is by getting the hepatitis B (HepB) vaccine. The first dose of the HepB vaccine should be given at birth (before leaving the hospital). This shot acts as a safety net, reducing the baby's risk of getting the disease from mom or family members who may not know they are infected with hepatitis B. **Newborns that become infected with the hepatitis B virus have a 90%**

chance of developing lifelong (chronic) infection. Unfortunately, many parents mistakenly believe that hepatitis B is strictly a sexually-transmitted disease and are therefore reluctant to have their child vaccinated at the recommended ages.



Human Papillomavirus (HPV)

Most people—about 8 in 10—will get an HPV infection at some point in their lives. HPV is a common virus that can cause cervical, vaginal and vulvar cancers in women, and penile cancer in men. HPV can also cause anal cancer, throat cancer and genital warts in both men and women.

Nearly 80 million people in the U.S. have already been infected with HPV and about 14 million people, including teens, become infected with HPV each year. **In addition, every year in the United States, HPV causes over 35,000 cancers in men and women. HPV vaccination can**

prevent most (90%) of these cancers from ever developing.

HPV can be passed even when an infected person has no signs or symptoms. In most cases, HPV goes away on its own and people infected with the virus never knew they had it. However, **when HPV does not go away, it can cause health problems such as genital warts and cancer.** Genital warts usually appear as a small bump or groups of bumps in the genital area. A healthcare provider can usually diagnose warts by looking at the genital area.

Cervical cancer usually does not have symptoms until it is quite advanced, very serious and hard to treat. For this reason, it is important for women to get regular screenings for cervical cancer (in addition to getting vaccinated against HPV).

Other HPV-related cancers might not have signs or symptoms until they are advanced and hard to treat. There is no routine screening for other HPV-related cancers for women or men.

The HPV vaccine protects against HPV infections that cause most of the HPV-related cancers. HPV vaccination can also help prevent genital warts.

All children who are 11 or 12 years old should get two doses of HPV vaccine. Teens and young adults though 26 years old, if not vaccinated already, should also get the HPV vaccine.

The vaccine offers the greatest health benefits those who receive both of the recommended doses *before* having any type of sexual activity. Some parents may be surprised to learn that sexual intercourse is not necessary for infection. Oral-genital and hand-genital transmission of some genital HPV types is possible. A person can become infected during their first sexual encounter.

The HPV vaccine has been studied very carefully and, as with all vaccines that are licensed in the U.S., continues to be monitored by CDC and FDA. With over 120 million doses distributed in the United States, HPV vaccine has a good safety record that's backed by over 10 years of monitoring and research.



Influenza (Flu)

Seasonal influenza (flu) is caused by viruses that infect the respiratory tract (the nose, throat and lungs). It is not the same as the common cold which is another respiratory illness caused by a different virus.

The flu season is unpredictable, but it often occurs from October to May and usually peaks between December and February.

Serious complications of flu can result in hospitalization or death, even in healthy children. Children are at particularly high risk if they are younger than 5 years of age or have certain chronic health conditions. While the majority of deaths resulting from flu occur in the elderly during a typical flu season, rates of infection are highest among children and hospitalization rates among children younger than 6 months old are similar to those of the elderly. Each year in the U.S., more than 20,000 children younger than 5 years are hospitalized and approximately 100 die as a result of the flu. During the 2019-20 flu season, 188 children died due to flu and its complications.

Common signs and symptoms of the flu may include:

- Fever over 100°F (not everyone with the flu has a fever)
- Muscle or body aches
- Chills
- Headache
- Cough
- Fatigue (tiredness)
- Runny or stuffy nose
- Sore throat

The best way to prevent the flu is to get vaccinated. An annual flu vaccine is recommended by the end of October for everyone 6 months of age and older. To best protect children younger than 6 months old, it's important that all of their family members and caregivers be vaccinated.

Adults, particularly pregnant women, also need to be vaccinated against the flu every year. Changes to a pregnant woman's immune system make her more likely to get serious flu complications. Also, the risk of premature labor and delivery increases when pregnant women get the flu, and there is a greater chance of their babies having birth defects. In addition, being vaccinated while pregnant has been shown to provide some protection to a woman's baby for several months after he or she is born. By getting vaccinated during pregnancy, mothers build antibodies that are transferred to the newborn providing protection against influenza before the baby can start getting their own flu vaccine at 6 months of age. Once the baby is born, breastfeeding also will help the infant stay healthy during flu season. Breastfeeding protects babies because breast milk passes a mother's antibodies to her baby, which helps fight off infection.

Even though the flu vaccine varies in how well it works each season, getting the flu vaccine every year is still very important and has a lot of benefits. Getting the flu vaccine can:

- Keep you from getting sick with flu.
- Help you get back on your feet sooner if you do get sick with the flu.
- Reduce the risk of children dying from flu.
- Reduce the risk of serious flu complications like hospitalization for children and adults.
- Help protect people around you, including those who are more vulnerable to serious flu illness and complications due to age and/or certain chronic health conditions.
- Protect women during and after pregnancy.



Measles

Measles is a very contagious respiratory disease. Measles spreads when a person infected with the measles virus breathes, coughs or sneezes. A person can catch measles just by being in a room where someone with the disease has been, up to 2 hours after that person is gone. And people infected with measles can be contagious even before they have the measles rash.

Measles can be very dangerous, especially for babies and young children. 1 in 5 people with measles will be hospitalized. For some children, measles can lead to pneumonia (a serious lung infection), lifelong brain damage, deafness, and death.

Measles is common in other parts of the world, including countries in Europe, Asia, the Pacific Islands and Africa. And over the past several years, measles has once again become a threat in the United States. Outbreaks across the country have put children at risk. In 2019 alone, there were over 1,250 cases of measles in 31 states. Learn more about current outbreaks of measles on the CDC website at [cdc.gov/measles/cases-outbreaks.html](https://www.cdc.gov/measles/cases-outbreaks.html).

If you suspect you or one of your family members has been exposed to measles, do not go to your doctor or healthcare provider. Instead, call them and explain the situation. Measles is highly contagious and could infect others in the waiting room if you have been exposed to the disease. Your healthcare provider will be able to tell you the next steps to take to protect yourself, your family and your community.

Measles signs and symptoms appear 7 to 14 days after exposure to the virus. Measles starts with a fever that can get very high. Some of the other symptoms that may occur include:

- Cough, runny nose and red eyes
- A skin rash of tiny, red spots that start at the head and spread to the rest of the body
- Ear infection
- Diarrhea

To help prevent measles, children should be vaccinated with the measles, mumps, and rubella (MMR) vaccine. For the best protection against measles, children need to receive the two recommended doses of the vaccine. One dose of MMR vaccine is about 93% effective at preventing measles, and two

doses are about 97% effective. The doses should be given between 12 and 15 months and between 4 and 6 years of age. **Almost everyone who has not had the MMR shot will get measles if they are exposed to the measles virus.**

Adults born during or after 1957 who have not had the measles or been vaccinated should receive at least 1 dose of the MMR vaccine. Some adults may need two doses. Learn more about the recommended vaccines for adults on the Vaccinate Your Family website at vaccinateyourfamily.org/adults.

For people traveling internationally, the CDC recommends:

- Infants 6 through 11 months of age should receive 1 dose of MMR vaccine. Infants who get 1 dose of MMR vaccine before their first birthday still need 2 more doses at the regularly recommended ages.
- Children 12 months of age and older should receive 2 doses of MMR vaccine separated by at least 28 days.
- Teenagers and adults who do not have evidence of immunity against measles should get 2 doses of MMR vaccine separated by at least 28 days.



Meningococcal Disease

Meningococcal disease is a serious bacterial illness and a leading cause of meningitis in children ages 2 through 18. Meningitis is an infection of the fluid surrounding the brain and spinal cord. Meningococcal disease can also cause bloodstream infections (septicemia). The bacteria that causes meningococcal disease spreads through close or lengthy contact with an infected person's saliva (e.g., coughing and sneezing, sharing drinks and eating utensils, kissing, and living in close quarters.)

Meningitis can strike without warning, progresses quickly, and can be fatal.

U.S. college campuses have reported outbreaks of serogroup B meningococcal disease during the last several years. About 600 – 1,000 people get meningococcal disease each year in the U.S., and 1 in 10 of these people die, sometimes within 24 hours after their symptoms appear. Of those who survive, about 1 in 5 people will suffer long-term consequences such as brain damage, hearing loss, loss of limbs, and nervous system damage.

Children younger than 1 year old, teens and young adults are at the greatest risk for meningococcal disease.

The most common symptoms include:

- High fever
- Severe headache
- Stiff neck

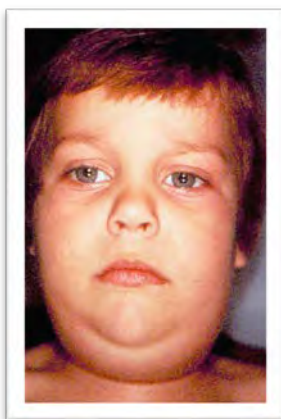
There are also usually additional symptoms too, including:

- Vomiting and/or nausea
- Confusion
- Seizures/convulsions
- Sleepiness or difficulty waking up
- Sensitivity to light
- Cold hands and feet
- Severe aches or pain in the muscles, joints, chest or belly
- Dark purple skin rash (usually on the torso, arms or legs)

Babies may not have or it may be difficult to notice the classic symptoms. Instead, babies may be slow or inactive, irritable, vomiting, feeding poorly, or have a bulging in the soft spot of the skull.

Two types of meningococcal vaccines are available. The meningococcal conjugate vaccine (MenACWY) has been available for several years and protects against 4 of the 5 types (serogroups) of meningococcus - A, C, Y, and W-135. It is routinely recommended for all children 11-12 years of age, with a booster dose at age 16.

The other type of meningococcal vaccine (MenB) is newer and protects against the fifth type (serogroup) of meningococcus - B. MenB vaccine is routinely recommended for people 10 years or older who are at increased risk for serogroup B meningococcal infections, and may also be given to anyone 16 - 23 years old to provide short-term protection. Parents should talk to their child's healthcare provider about the MenB vaccine. Learn more about MenB from The Meningitis B Action Project at meningitisbactionproject.org.



Mumps

Mumps is a contagious disease caused by a virus. It is spread through coughing and sneezing, and through close contact (even regular conversation) with infected people. The primary and best known sign of mumps is swollen salivary glands that cause the cheeks to puff out.

While usually a mild disease, mumps can also cause complications such as meningitis (swelling of the brain and spinal cord) and deafness. In addition, about 1 out of every 4 teenage or adult men who get mumps will develop a painful swelling of the testicles which can, although rarely, lead to sterility.

Even though the vaccine has drastically reduced mumps cases, outbreaks still occur in the U.S.

Outbreaks have most commonly occurred among groups of people who have close contact (e.g., sharing water bottles or cups, kissing, practicing sports together, or living in close quarters) with a person who has mumps. Some vaccinated people may still get mumps if they are exposed to the virus. However, disease symptoms are milder in vaccinated people.

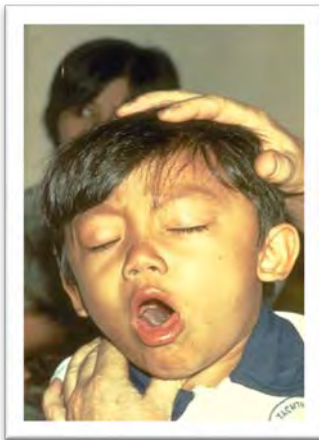
Some children infected with the mumps virus have either no signs or symptoms or very mild ones.

When signs and symptoms do develop, they usually appear about two to three weeks after exposure to the virus and may include:

- Swollen glands under the ear or jaw
- Fever
- Headache
- Fatigue
- Loss of appetite
- Muscle aches

To prevent mumps, children should be vaccinated with the measles, mumps, and rubella (MMR) vaccine. For the best protection against mumps, children need to receive all of the recommended doses.

Adults need to be vaccinated against mumps too. Learn more about which vaccines adults need at vaccinateyourfamily.org/adults.



Pertussis (Whooping Cough)

Pertussis, also known as whooping cough, is a very contagious respiratory disease caused by bacteria that spreads easily from person-to-person through coughing and sneezing. **In many children, it's marked by a severe hacking cough followed by a high-pitched intake of breath that sounds like a "whoop."** However, some babies with whooping cough only have a slight cough or no cough at all. Instead they may have a hard time breathing, or even stop breathing for short periods of time.

Adolescents and adults with pertussis may have prolonged coughing spells that last for weeks or months. However, the "whoop" sound may not be there and the illness is generally less severe than in young children, especially in people who were previously vaccinated against pertussis. **In fact, some adolescents and adults who get pertussis may not even know they have the disease.**

Pertussis is most dangerous for babies, as they are at particularly high risk of severe complications, hospitalization and death. About half of babies younger than 1 year old who get the disease need care in the hospital, and 1 out of 100 babies who get treatment in the hospital die.

Most unvaccinated children living with a family member with pertussis will get the disease.

Pertussis is still common in the U.S., and outbreaks still occur. Recently between 10,000 and 50,000 cases have been reported each year.

Symptoms usually take between 1 and 3 weeks to appear. They're usually mild at first and resemble those of a common cold. After a week or two, signs and symptoms worsen. Thick mucus accumulates inside the airways causing uncontrollable, severe coughing.

Violent coughing fits may cause:

- Vomiting
- A blue face (from not getting enough air)
- Difficulty breathing, eating, drinking, or sleeping
- Broken ribs
- Gasping for air after a coughing fit. This may cause a "whooping" sound.

For the best protection against pertussis, children need to receive *all five recommended doses* of the DTaP vaccine. All adolescents and adults need to be vaccinated with *a one-time dose* of Tdap, the adult version of the diphtheria, tetanus and pertussis vaccine.

To best protect newborns from pertussis, pregnant women should be vaccinated with Tdap during *every* pregnancy in their 3rd trimester (between the 27th and 36th week of pregnancy). Family members and caregivers of an infant should also make sure to be up-to-date on their Tdap vaccination *at least two weeks* before coming into close contact with the baby.



Pneumococcal Disease

Pneumococcal disease is caused by bacteria called pneumococcus. The disease is often mild, but can cause serious illness, lifelong disability, and even death. Pneumococcal disease is spread by coughing and sneezing.

Types of pneumococcal disease include pneumonia (lung infection), meningitis, bloodstream infections (bacteremia and sepsis), middle ear infections and sinus infections. Children younger than 2 years old are most likely to have a serious case of pneumococcal disease.

According to the CDC, each year in the United States, pneumococcal disease causes thousands of cases of pneumonia and ear infections. Additionally, about 2,000 cases of invasive pneumococcal disease occur each year in children under 5 in the U.S. These illnesses can lead to disabilities like deafness, brain damage, or loss of arms or legs. About 1 out of 15 children who get pneumococcal meningitis dies. About 1 out of 5 children with bacteremia will die from it.

Symptoms depend on the type of pneumococcal disease, but generally include fever and/or chills. Additional symptoms may include:

- Cough, rapid breathing or difficulty breathing, and chest pain (pneumonia)
- Stiff neck, headache, confusion and pain when looking at bright lights (meningitis)
- Poor eating and drinking, low alertness, and vomiting (meningitis in babies)
- Low alertness (bacteremia and sepsis)
- Ear pain, red/swollen ear drum and sleepiness (middle ear infection)

Pneumococcal vaccines are the best way to prevent pneumococcal disease. For the most protection against pneumococcal disease, children need to receive all of the recommended doses. Adults need pneumococcal vaccines too. Learn more about vaccines for adults at vaccinateyourfamily.org/adults.



Polio

Polio is a potentially crippling and deadly disease caused by a virus that spreads from person to person. It can invade the brain and spinal cord resulting in paralysis.

Before the polio vaccine was available, an average of 50,000 polio cases was reported in the United States each year. Polio was one of the most dreaded childhood diseases of the 20th century with annual epidemics, primarily during the summer months. This often left thousands of victims — mostly children — permanently in braces, crutches, wheelchairs or in iron lungs.

Because polio can paralyze the diaphragm, in the 1940s and 1950s, entire wards of hospitals housed polio victims who were dependent on large iron lungs to breathe for them.

Polio can cause paralysis. Signs of paralytic polio include:

- Loss of reflexes
- Severe muscle aches or spasms
- Loose and floppy limbs (flaccid paralysis), often worse on one side of the body

Polio does not always cause paralysis, and people with polio don't always show symptoms. If symptoms of nonparalytic polio appear, they may include:

- Fever
- Sore throat
- Headache
- Vomiting
- Fatigue
- Nausea
- Pain or stiffness in the back, neck, arms or legs
- Muscle spasms or tenderness

Since polio has no cure, polio vaccination is the best way to protect individuals and it is the only way to stop the disease from spreading. There are two types of vaccine that can prevent polio - inactivated

polio vaccine (IPV) and oral polio vaccine (OPV). Since 2000, only IPV has been used in the U.S.; however, OPV is still used throughout much of the world.



Rotavirus

Rotavirus is a virus that causes diarrhea and vomiting in infants and young children. It can lead to severe dehydration, which if not treated can be deadly.

Each year, rotavirus causes an estimated 453,000 deaths among infants around the world. **Prior to the rotavirus vaccine, almost every child had been infected with rotavirus by age 5. Before the rotavirus vaccine was recommended in the United States in 2006, rotavirus sent 200,000 children to the emergency room, caused 55,000 to 70,000 hospitalizations, and cause 20 to 60 deaths.**

After a child has been infected with rotavirus, it takes about two days for symptoms to appear. Symptoms may include:

- Dehydration (loss of body fluids)
- Vomiting
- Severe watery diarrhea
- Stomach pain
- Fever
- Loss of appetite

In adults who are otherwise healthy, a rotavirus infection may cause only mild signs and symptoms — or none at all.

Vaccination is the most effective way to prevent rotavirus infection in infants. For the best protection against rotavirus, children need to receive all recommended doses (two to three depending on vaccine brand) of rotavirus vaccine.



Rubella

Rubella, also called German measles, is a contagious viral infection best known by its distinctive red rash. The virus can spread through sneezing or coughing. **While the disease is usually mild in children and adults, rubella can be very dangerous for pregnant women and their babies.** If a pregnant woman is infected with the disease it can cause miscarriage, stillbirth, premature birth, and/or birth defects such as heart problems, hearing and vision loss, intellectual disabilities (also known as mental retardation), and liver or spleen damage. This group of health problems is called congenital rubella syndrome (CRS).

The symptoms of rubella are often so mild they're difficult to notice, especially in children. If symptoms do occur, they generally appear 2 to 3 weeks after exposure to the virus and last 2 to 3 days. Symptoms may include:

- Mild fever of less than 101 degrees
- Headache
- Stuffy or runny nose
- Inflamed, red eyes
- Enlarged, tender lymph nodes
- A fine, pink rash that begins on the face and quickly spreads to the trunk and then the arms and legs, before disappearing in the same sequence
- Aching joints (especially in young women)

To prevent rubella, children should be vaccinated with the measles, mumps, and rubella (MMR) vaccine. In addition, women thinking about becoming pregnant may need to be vaccinated against rubella if they are not already immune.

Before the rubella vaccine was introduced in 1969, widespread outbreaks usually occurred every six to nine years in the United States, mostly affecting children between 5 and 9 years old. Between 1962 and 1965, rubella infections during pregnancy were estimated to have caused 30,000 still births and 20,000 children to be born impaired or disabled.

In 2004, the CDC announced that both the congenital and acquired forms of rubella had been eliminated from the United States. The U.S. continues to vaccinate to prevent the possibility of rubella being imported from countries where it is still common.



Tetanus

Also known as lockjaw, tetanus is a severe disease that causes stiffness and spasms of the muscles.

Unlike other vaccine-preventable diseases, which are transferred from person to person, tetanus bacteria are found in places such as soil/dirt, dust, and manure, and can therefore never be eradicated. Tetanus bacteria enter the body through any break in the skin, such

as a cut or a puncture wound. A person can also be infected after a burn or animal bite.

There's no cure for tetanus. Treatment focuses on managing complications until the effects of the tetanus toxin resolve. Almost all cases of tetanus are in people who have never been vaccinated, or who completed their childhood series, but did not have a booster dose in the last 10 years. Fatality is highest in people who haven't been immunized. Up to 20% of reported tetanus cases end in death.

Common signs and symptoms of tetanus include:

- Seizures (jerking or staring)
- Fever and sweating
- High blood pressure and fast heart rate
- Difficulty swallowing
- Stiffness of muscles all over the body
- Painful muscle spasms strong enough to break a child's spine or bones

Vaccination is the most effective way to prevent tetanus. The tetanus vaccine for children, DTaP, also helps protect against diphtheria and pertussis (whooping cough). The adolescent and adult version of this vaccine is known as Tdap. Another vaccine for adolescents and adults, called Td, combines protection against tetanus and diphtheria, but not pertussis.

For the best protection against tetanus, children need to receive all of the five recommended doses of the DTaP vaccine. Adolescents need a dose of Tdap at 11 or 12 years of age. For older children and adults who haven't received a dose of Tdap yet, the easiest thing to do is to get Tdap vaccine instead of their next regular tetanus booster (Td). They will then need a booster shot of Td every 10 years. The dose of Tdap can be given earlier than the 10-year mark, so it's a good idea to talk to a doctor about getting the vaccine.



Varicella (Chickenpox)

Varicella, also known as chickenpox, is a viral infection that causes an itchy, blister-like rash. Chickenpox is very contagious and can quickly spread to children who haven't had the disease or been vaccinated against it. **It can lead to severe illness with complications such as infected blisters, pneumonia, bleeding disorders, swelling of the brain, and even death.**

Once an individual is infected with the varicella virus it remains in the body for life and may reappear as shingles once they are older.

Before the chickenpox vaccine was approved in the U.S., approximately 4 million people got sick with the disease each year. About 10,600 people were hospitalized, and 100 to 150 died every year as a result of chickenpox. In the 1990s, the highest rate of chickenpox illness occurred in preschool-aged children. Today, due to the vaccine, the number of cases and hospitalizations is down dramatically.

Chickenpox infection usually lasts about five to ten days. Chickenpox most common symptom is the rash that turns into fluid filled blisters. It usually appears first on the face and chest, and then spreads to the rest of the body. As many as 250 to 500 blisters and bumps may appear on the skin.

Other signs and symptoms, which may appear 1 to 2 days before the rash, include:

- Fever
- Loss of appetite
- Headache
- Tiredness and a general feeling of being unwell

The varicella vaccine is the best way to prevent chickenpox. For the best protection against chickenpox, children need to receive the 2 *recommended doses* of the vaccine. Adults who have never had chickenpox or received the varicella vaccine should get 2 doses in order to protect themselves and those around them.



Shingles (Herpes Zoster)

Shingles, also known as herpes zoster, is a painful rash that usually develops on one side of the body, often the face or torso. The rash consists of blisters that typically scab over in 7 to 10 days and clears up within 2 to 4 weeks.

Shingles is caused by the varicella zoster virus, the same virus that causes chickenpox. Only someone who has had chickenpox (or, rarely, received the chickenpox vaccine) can get shingles. After a person recovers from chickenpox, the virus stays in your body. Though it's not fully understood why, in some people the virus reactivates or "wakes up" many years later and causes shingles.



Shingles is not unique to older adults and can be seen at any age in anyone who had chickenpox; however, shingles is much more common in people 50 years of age and older. The risk of the disease increases as a person gets older. Shingles is also more common in people whose immune systems are weakened because of a disease such as cancer, or drugs such as steroids or chemotherapy.

Almost 1 out of every 3 people in the United States will develop shingles, and there are an estimated 1 million cases of shingles each year in the U.S.

Shingles is a disease that occurs in stages. The first indication can be headaches and/or sensitivity to light. Many people complain of flu-like symptoms but don't generally run the characteristic fever that accompanies the flu. The next stage usually includes itching, tingling and pain (sometimes severe) in the skin specific to a certain area, not all over the body. That area of skin will often develop a rash that will show as a band, strip or just an area of the skin, typically on one side of the body. This progresses to clusters of blisters which fill with fluid and then will crust over. **The severity of the rash varies from person to person, and lasts from 2 to 4 weeks.** Very rarely, a shingles infection can lead to pneumonia, hearing problems, blindness, brain inflammation (encephalitis) or death.

The most common complication of shingles is a condition called post-herpetic neuralgia (PHN). People with PHN have severe pain in the areas where they had the shingles rash, even after the rash clears up. About 1 out of 5 people with shingles will get PHN.

Shingles cannot be passed from one person to another. However, if you have not had chickenpox or have not received the chickenpox vaccine, then you can get chickenpox from someone with shingles. Those with shingles should avoid contact with children and pregnant women who have not had chickenpox or the chickenpox vaccine; premature and low birth weight infants; and people with weakened immune systems.

The shingles vaccine called Shingrix was licensed by the FDA in 2017. CDC recommends that healthy adults 50 years and older get 2 doses of Shingrix, which provides strong protection against shingles and PHN.

Shingrix is the preferred vaccine over Zostavax, a shingles vaccine that has been used since 2006. People who have had shingles before and people who were vaccinated with Zostavax should still get the Shingrix vaccine.



Screening WIC participants for Up-to-Date Vaccination Status & Making Necessary Referrals

Counting DTaP Vaccinations

In 2003, the CDC, in cooperation with USDA and the National WIC Association, developed a simplified method for WIC staff to monitor vaccination status of children less than two years of age. The 4th dose of DTaP (diphtheria, tetanus and acellular pertussis vaccine) was chosen to be the marker to identify whether or not children were up-to-date on their vaccinations. Use of this strategy increased the immunization rates of WIC participants by ten percent.

When asked if a child is up-to-date, parents typically overestimate their child's vaccination status. **A documented record of vaccinations is more accurate than a parent's memory.** A documented record is a record (computerized or paper) in which actual vaccination dates are recorded. This includes a parent's hand-held immunization record (from the provider), a client chart (paper copy), or a printout from an Immunization Information Systems (IIS) or electronic medical record (EMR).

Immunization Information Systems, also known as immunization registries, are confidential, electronic systems that contain vaccination histories and provide immediate access to a child's current vaccination status. They are one of the most accurate ways to determine a child's vaccination status.

IIS were created in conjunction with the CDC and are available in every state. Some states, such as California, have more than one IIS. The majority of immunization information systems in the United States allow WIC staff to access children's immunization records in the system. Some IIS allow "read only" access, while others allow WIC staff both "read" and "write" access. To find out if your WIC clinic is able to view vaccination records in your state or local IIS, please contact the IIS manager. A list of state immunization information systems can be found on the CDC website at www.cdc.gov/vaccines/programs/iis/contacts-locate-records.html#state.

Making Referrals

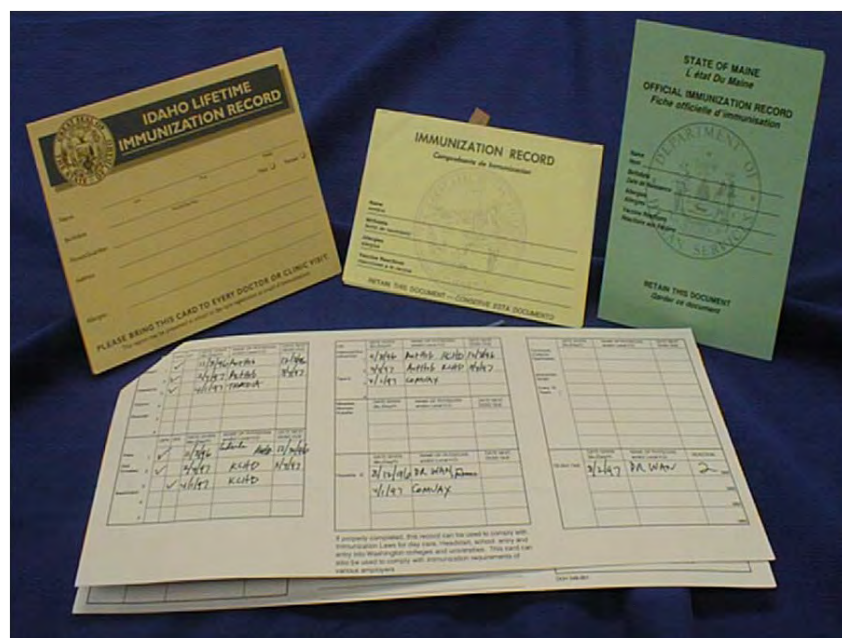
Another important part of the vaccination assessment process is advising the parent about the results of the child's immunization screening and if necessary, referring them to a healthcare provider that gives childhood vaccinations. In addition, WIC staff may also want to provide them with other valuable resources such as a copy of the CDC's immunization schedule and/or one or more of the educational handouts from Vaccinate Your Family's 2020 *Immunization Resources for Parents and Parents-to-Be* (in English and Spanish), which is available at vaccinateyourfamily.org/vaccine-resources.

If possible, work with your state or local immunization program staff to identify providers in your community who offer immunizations. Make a list of providers including private providers (pediatricians/family practice doctors); walk-in clinics; appointment only clinics; mobile vans; and on-site immunization services.

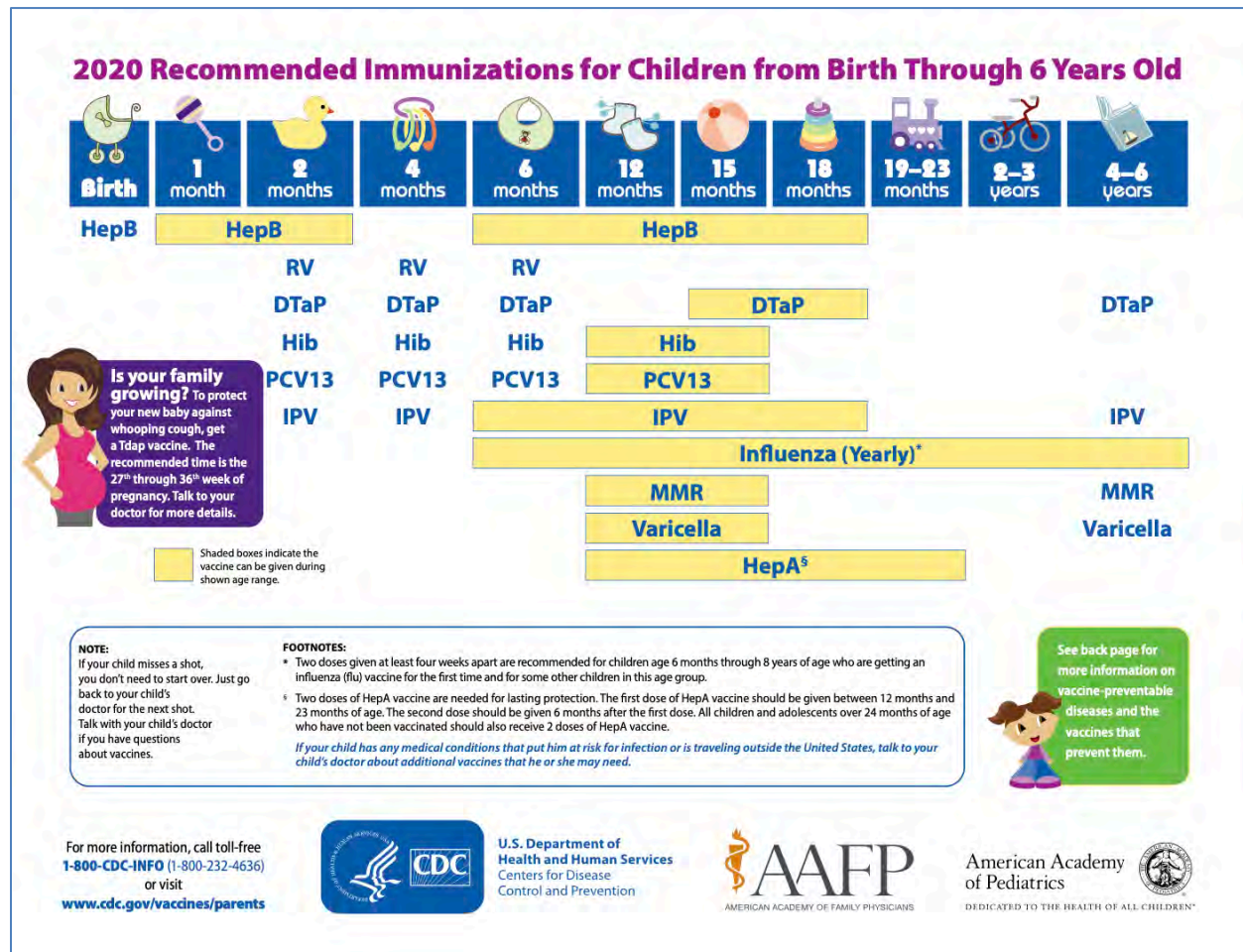
An easy tool has been created to assist WIC staff in assessing children's vaccination status by counting the number of DTaP vaccinations they have received.

DETERMINING IF CHILD IS UP-TO-DATE ON THEIR VACCINES BASED ON THEIR DTaP VACCINATION STATUS	
Child's Age	Minimum Number of DTaP Doses
Birth through 1month	0
3 months	1
5 months	2
7 months	3
19 months	4

Types of immunization records you may see (not including electronic records).

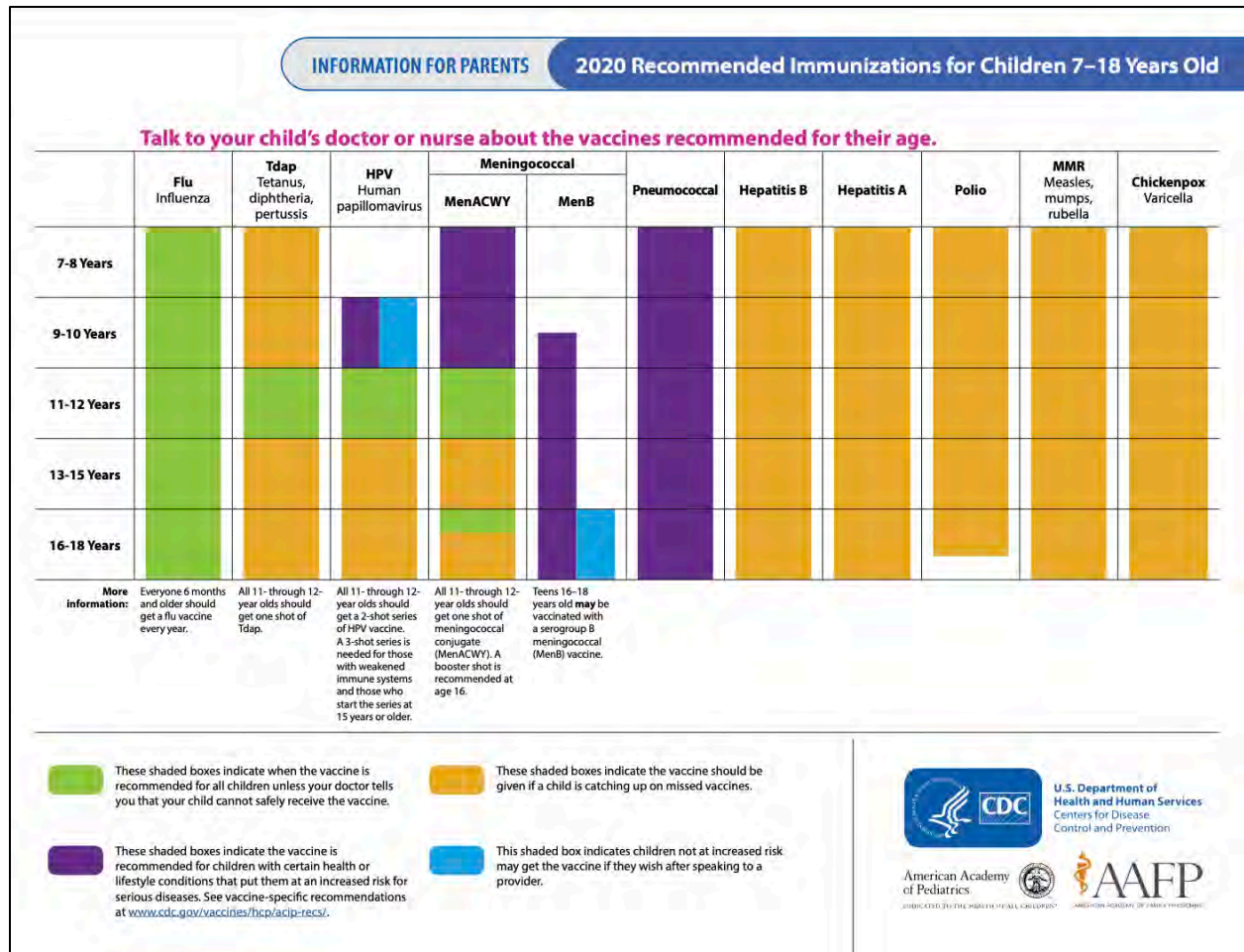


Recommended Immunization Schedule for Children from Birth through 6 Years



This CDC recommended immunization schedule for infants and young children is supported by the American Academy of Family Physicians (AAFP) and the American Academy of Pediatrics (AAP).

Recommended Immunization Schedule for Children 7 through 18 Years



This CDC recommended immunization schedule for adolescents is supported by the American Academy of Family Physicians (AAFP) and the American Academy of Pediatrics (AAP).

The recommended childhood and adolescent immunization schedules shown above are available at cdc.gov/vaccines/parents/schedules.

Vaccinations for Women – Before, During and After Pregnancy

Maternal Vaccination



Resources for healthcare professionals

Vaccines help keep your pregnant patients and their growing families healthy.

Last Updated September, 2016

Vaccine	Before pregnancy	During pregnancy	After pregnancy	Type of vaccine
Influenza	Yes	Yes, during flu season	Yes	Inactivated
Tdap	May be recommended; it is better to vaccinate during pregnancy when possible	Yes, during each pregnancy	Yes, immediately postpartum, if Tdap never received in lifetime; it is better to vaccinate during pregnancy	Toxoid/ Inactivated
Td	May be recommended	May be recommended, but Tdap is preferred	May be recommended	Toxoid
Hepatitis A	May be recommended	May be recommended	May be recommended	Inactivated
Hepatitis B	May be recommended	May be recommended	May be recommended	Inactivated
Meningococcal	May be recommended	Base decision on risk vs. benefit; inadequate data for specific recommendation	May be recommended	Inactivated
Pneumococcal	May be recommended	Base decision on risk vs. benefit; inadequate data for specific recommendation	May be recommended	Inactivated
HPV	May be recommended (through 26 years of age)	No	May be recommended (through 26 years of age)	Inactivated
MMR	May be recommended; once received, avoid conception for 4 weeks	No	May be recommended	Live
Varicella	May be recommended; once received, avoid conception for 4 weeks	No	May be recommended	Live

For more information, visit: www.cdc.gov/vaccines/pregnancy

Get an answer to your specific question by e-mailing cdcinfo@cdc.gov or calling 800-CDC-INFO (232-4636)



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

These recommendations are also supported by the American Academy of Family Physicians, the American College of Obstetricians and Gynecologists, the American College of Nurse-Midwives, and the Association of Women's Health, Obstetric and Neonatal Nurses.



Immunization Resources

Vaccinate Your Family

[\(www.vaccinateyourfamily.org\)](http://www.vaccinateyourfamily.org)

Vaccinate Your Family (VYF)

This website, which is hosted by Vaccinate Your Family, contains information about immunizations for people of all ages, stories about families who have been impacted by vaccine-preventable diseases, and includes answers to the many questions parents have about vaccines, their ingredients and their safety.

Immunization Resources for Parents and Parents-to-Be (2020 Version)

[\(www.vaccinateyourfamily.org/vaccine-resources\)](http://www.vaccinateyourfamily.org/vaccine-resources)

Vaccinate Your Family (VYF)

Immunization Resources for Parents and Parents-to-Be was created to provide resources to assist WIC staff and WIC participants who have questions about vaccines. This booklet, which brings together existing resources from the CDC and VYF, addresses the importance of immunizations for children, adolescents and adults (including pregnant women). Also included are easy-to-read immunization schedules, information on the Vaccines for Children (VFC) program and information about immunization information systems. This booklet may be downloaded and copied in full or individual documents from the booklet can be copied and distributed by WIC staff.

Recursos de vacunación para padres y las mujeres embarazadas (Edición 2020)

[\(www.vaccinateyourfamily.org/vaccine-resources\)](http://www.vaccinateyourfamily.org/vaccine-resources)

Vaccinate Your Family (VYF)

Recursos de vacunación para padres y las mujeres embarazadas is the Spanish version of the *Immunization Resources for Parents and Parents-to-Be* booklet. It was created to help answer questions that WIC staff and Spanish-speaking WIC participants may have about vaccines. This booklet, which brings together existing resources from the CDC and VYF, addresses the importance of immunizations for both children and adults (including pregnant women). Also included are easy-to-read immunization schedules, information on the Vaccines for Children (VFC) program and information about immunization information systems. This booklet may be copied in full or individual documents from the booklet can be copied and distributed by WIC staff.



Vaccines and Pregnancy: Getting Vaccinated While Pregnant Protects Both Mom and Baby
(www.vaccinateyourfamily.org/vaccine-resources)

Vaccinate Your Family (VYF)

Vaccinate Your Family created this one-page handout for pregnant women. It can be downloaded, printed and distributed.

Vaccinate Your Family Poster for Daycares and WIC Clinics
(<https://ymiclassroom.com/lesson-plans/vyf>)

Vaccinate Your Family (VYF)

Vaccinate Your Family created this colorful poster to promote vaccinations and other ways to stop the spread of germs. It may be downloaded, printed and used in many different settings.

Frequently-Asked Questions (FAQs) About Vaccines (Videos)
(www.vaccinateyourfamily.org/questions-about-vaccines/video-faqs)

Vaccinate Your Family (VYF)

To assist parents who have questions about vaccine safety, Vaccinate Your Family staff posed 21 frequently-asked questions (FAQs) about vaccines to several experts in the fields of immunization and autism. Their answers were videotaped and edited into short video clips. Questions fall under the following four categories – *Why Vaccinate*, *Why Follow the Recommended Immunization Schedule*, *Vaccine Testing*, *Ingredients & Safety*, and *Vaccines & Autism*. The transcript from all of the video clips can be downloaded and printed.

Vaccines and Immunizations
(www.cdc.gov/vaccines and www.cdc.gov/spanish/inmunizacion)

Centers for Disease Control and Prevention (CDC)

These sections of the CDC website contain information for the public, healthcare providers and immunization partners on vaccines and immunizations. The CDC also created an immunization section written explicitly for parents. The vaccine pages also available in Spanish.



Talking to Parents About Vaccines

www.cdc.gov/vaccines/hcp/conversations/conv-materials.html

Centers for Disease Control and Prevention (CDC), the American Academy of Family Physicians (AAFP) and the American Academy of Pediatrics (AAP)

This webpage provides resources created by CDC, AAFP and AAP that offer communication strategies for successful vaccine conversations with parents and caregivers. The page includes a handout can be given to parents who choose to refuse or delay their children's vaccines.

AAP's Healthy Children

www.healthychildren.org and www.healthychildren.org/Spanish/Paginas/default.aspx

American Academy of Pediatrics (AAP)

The immunization section of this AAP website for the public contains information and articles on vaccines for children and teens. This website is also available in Spanish.

Q&As about Vaccines and Vaccine Safety

www.chop.edu/centers-programs/vaccine-education-center/resources/vaccine-and-vaccine-safety-related-ga-sheets

Vaccine Education Center at the Children's Hospital of Philadelphia (CHOP)

The Vaccine Education Center created numerous fact sheets in Q&A format (in English and Spanish) to help answer the many questions parents have about vaccines and vaccine safety. These handouts may be copied and distributed to WIC staff and participants.

ACOG's Immunization for Women

www.immunizationforwomen.org

American College of Obstetricians and Gynecologists (ACOG)

This website, developed by the American College of Obstetricians and Gynecologists (ACOG), contains immunization information for both OB-GYNs and their patients.



Vaccinate Your Family

a new lesson from wichealth.org

Vaccine-preventable diseases still exist in the U.S. and around the world. Learn how vaccines safely protect pregnant women, babies, children, teens, and adults from more than 16 dangerous infectious diseases. With information you can trust, you will be able to make the best choices for you, your family, and your community.



help@wichealth.org



wichealth.org