

Vaccines 101:

Information for WIC Staff

(2018 Edition)

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Centers for Disease Control and Prevention.

VACCINATE YOUR FAMILY
The Next Generation of Every Child By Two

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Introduction

Vaccinate Your Family: The Next Generation of Every Child By Two (VYF) 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 life-saving 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 schedule in order to best protect children, adolescents and adults.
- Outbreaks of measles, a serious disease that was previously eliminated in the United States, have occurred in recent years in large part due to low vaccination rates. In 2017, 118 people from 15 states and the District of Columbia were reported to have measles. From January 1 to March 30, 2018, 34 people from 11 states were reported to have measles. The majority of people who got measles during the recent outbreaks in the U.S. were unvaccinated. Travelers with measles continue to bring the disease into the U.S. Measles can spread when it reaches a community in the U.S. where groups of people are unvaccinated.
- Large outbreaks of pertussis (also known as whooping cough) are occurring in the U.S. There were more than 20,000 cases of pertussis in the U.S. in 2015, almost 16,000 cases in 2016, and just under 18,000 cases reported in 2017. Pertussis outbreaks continue in 2018.
- During the 2017-2018 influenza season, as of mid-April, 142 pediatric deaths due to flu were reported to the CDC. Young children and pregnant women are at high risk of complications from influenza. In fact, each year an average of 20,000 children younger than 5 years are hospitalized because of influenza complications.

What happens when we don't vaccinate children on time?

- Parents who obtain vaccine exemptions for their children are putting their children at risk for serious disease. For example, studies have shown that children with exemptions are 22 times more likely to contract measles than non-exempt peers.
- Parents who choose to delay vaccines or not vaccinate their children also put others at risk. In order to protect everyone in the community, including those who cannot be immunized, from vaccine-preventable diseases, vaccination rates must remain high. The concept is referred to as "Community Immunity" or "Herd Immunity".

How can we protect ourselves and others around us?

- Immunizing yourself can protect others around you from contracting dangerous vaccine-preventable diseases, especially young babies who have yet to begin the vaccine series or have not yet received all their vaccines and those who cannot be vaccinated due to medical reasons. For example, to help protect infants from diseases such as pertussis and flu, women should be vaccinated during *every* pregnancy to help protect both themselves and their newborn from serious illness. The CDC, the American College of Obstetricians and Gynecologists (ACOG) and the American College of Nurse-Midwives (ACNM) all strongly recommend flu and pertussis (Tdap) vaccines for pregnant women.
- When women get vaccinated against diseases such as flu and pertussis during their pregnancy, they are not only protecting themselves, but they are also passing immunity directly 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. Babies need to be vaccinated according to the CDC's recommended immunization schedule to stay protected against 14 serious and potentially life-threatening diseases.
- Parents should 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 prior to the delivery date**.
- People should get information about vaccines and their family's health from their doctor and other reputable organizations such as the CDC (www.cdc.gov/vaccines), the American Academy of Pediatrics (www.healthychildren.org), ACOG (www.immunizationforwomen.org), the Vaccine Education Center at the Children's Hospital of Philadelphia (vaccines.chop.edu) and Vaccinate Your Family: The Next Generation of Every Child By Two (www.vaccinateyourfamily.org).

Why is it important to follow the recommended vaccine schedule?

- Doctors, scientists and public health experts work diligently to develop the optimal vaccination schedule, affording the most complete and safest protection from diseases possible. Following the CDC's immunization schedule is the best way to ensure your children are protected against deadly vaccine-preventable 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 on they are approved by the U.S. Food and Drug Administration (FDA), continuous monitoring by government officials and the medical community ensures that each dose of the vaccine is safe and any risks associated with the vaccine are investigated.

- Concerns about the safety of vaccines and the possible link between vaccines and autism are not supported by 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 potential for vaccine side effects.**

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

Because vaccines are given to healthy individuals, they undergo a more rigorous approval process than drugs which are given to cure sick people. Licensing of vaccines typically takes 15 years and an average of $800 million of manufacturers' money. The FDA ensures the safety, purity, potency and effectiveness of vaccines. But it doesn't stop there:

- Post-licensing monitoring is conducted tracking any side effects from the vaccine.

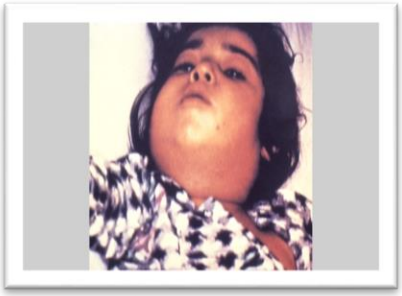
- Samples of every lot of vaccine must be submitted to the FDA before it is sold. This ensures that each batch is as safe and effective as the last.

- Since 1990, the Vaccine Safety Datalink (VSD) has collected statistics from more than 7 million people in health plans who have received vaccines.

- In 1990, the CDC and the FDA established the Vaccine Adverse Event Reporting System (VAERS), which gathers information about any side effects patients have experienced. VAERS accepts any reported information without determining a cause and effect relationship. Clinical Immunization Safety Assessment Centers (CISA) were started in 2001. They conduct clinical research about vaccine adverse events (VAE) and the role of individual variation; provide clinicians with evidence-based counsel and empower them to make informed immunization decisions.

- When there is found to be a relationship between a side effect and a vaccine, the scientific community is alerted while the vaccine's safety is reviewed. The vaccine may be temporarily or permanently suspended from use. For example, RotaShield® was a rotavirus vaccine that was licensed by the FDA in August 1998 and recommended for use in the United States by the ACIP. In July of 1999 with almost 1 million children having been immunized with the vaccine, it was noticed that an increase in the number of children who developed a serious bowel disease called "intussusception" was occurring. The common thread was the RotaShield® vaccine, and so the CDC recommended that use of the vaccine be suspended. This shows that the surveillance systems put in place by both the government and the scientific community work and they provide us with the safest vaccines possible today.

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 contract diphtheria dies from the disease. In children younger than 5 years of age, as many as 1 out of 5 who contract 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, which usually begin two to five days after a person is infected, 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 children from diphtheria, tetanus and pertussis. The Tdap vaccine protects older children and adults against these 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 United States

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 two to six 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 need hepatitis A vaccine too. Learn more about vaccines for adults on the Vaccinate Your Family website at www.vaccinateyourfamily.org/adults. Since the introduction of the hepatitis A vaccine in 1995, rates of the disease have been on the decline. According to the CDC, an estimated 2,500 hepatitis A cases occurred in 2014.

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.

An individual 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; though 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 risk of getting the disease from moms or family members who may not know they are infected with hepatitis B. 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 age. Newborns that become infected with the hepatitis B virus have a 90% chance of developing lifelong (chronic) infection.

Human Papillomavirus (HPV)

Most people—about 9 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 gotten HPV and about 14 million people, including teens, become infected with HPV each year. In addition, every year in the United States, HPV causes 32,500 cancers in men and women, including 12,000 women with cervical cancer. HPV vaccination can prevent most of the cancers (about 30,000) 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. These include cancers of the vulva, vagina, penis, anus, and oropharynx (cancers of the back of the throat, including the base of the tongue and tonsils). 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 six to twelve months apart. Adolescents who receive their two doses less than five months apart will require a third dose of HPV vaccine.

The vaccine offers the greatest health benefits those who receive both of the recommended doses (two 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.

Teens and young adults who did not get the HPV vaccine when they were younger should get it now. For people older than 14 years old, three shots will need to be given over 6 months. Also, three doses are still recommended for people with certain immunocompromising conditions aged 9 through 26 years.

The HPV vaccine has been studied very carefully and continues to be monitored by CDC and FDA. No serious safety concerns have been linked to HPV vaccination. These studies continue to show that HPV vaccines are safe.

Influenza

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 (the 2016-17 influenza season peaked in 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 2016-17 flu season, a total of 104 of pediatric deaths were reported to the CDC.

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 the flu vaccine. An annual flu vaccine is recommended 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.

The CDC recommends annual flu vaccination for everyone 6 months and older. Talk to your healthcare provider to find out which type of flu vaccine is best for each member of your family.

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 the flu vaccine at 6 months of

age. Once the baby is born, breastfeeding also will help an 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.

Measles

Measles is a highly contagious respiratory disease caused by a virus. The disease spreads quickly and can be serious or even fatal for small children. **The disease kills hundreds of thousands of children each year around the world, most under the age of five.**

Even in previously healthy children, measles can be a serious illness requiring hospitalization. As many as 1 out of every 20 children with measles gets pneumonia, and about 1 child in every 1,000 who get measles will develop encephalitis. (This is a swelling of the brain that can lead to convulsions, and can leave the child deaf or intellectually disabled.)

Over the past several years, measles has re-emerged as a threat in the United States. Outbreaks across the country have put children at risk. Learn more about current outbreaks of measles on the CDC website at 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 seven to fourteen days after exposure to the virus. Signs and symptoms of measles typically include:

- High fever
- Cough
- Runny nose
- Sore throat
- Red eyes (conjunctivitis)
- A skin rash of tiny, red spots that start at the head and spread to the rest of the body
- Ear infection
- Diarrhea

To prevent measles, children should be vaccinated with the combined 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. **If you are traveling with an infant less than twelve months of age, please visit the CDC's website at wwwnc.cdc.gov/travel.**

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

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).

About 500 people get meningococcal disease each year in the U.S. and 1 in 10 of these people die. Of those who survive, about 1 to 2 patients out of every 10 will have permanent disabilities such as brain damage, hearing loss, nervous system problems or limb amputations.

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

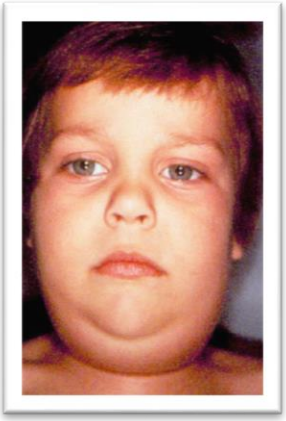
Signs and symptoms may develop over several hours or over one or two days, including:

- Sudden high fever
- Severe headache
- Stiff neck
- Vomiting or nausea with headache
- Confusion or difficulty concentrating
- Seizures
- Sleepiness or difficulty waking up
- Sensitivity to light
- Lack of interest in drinking and eating (infants)
- Dark purple skin rash

Two types of meningococcal vaccines are available. The meningococcal conjugate vaccine (MenACWY) has been available for several years and protects against four of the five 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, type 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. **Meningococcal vaccination is not recommended for children under 11 years of age, unless they are considered to be at increased risk for meningococcal disease.** Parents should talk to their child's healthcare provider to find out if they

need to receive a meningococcal vaccination before age 11. Learn more about serogroup B meningococcal vaccines on the National Meningitis Association website at www.nmaus.org.



Mumps

Mumps is a contagious disease caused by a virus. It is spread from person to person 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 one out of every four teenage or adult men who get mumps will develop a painful swelling of the testicles which can, although rarely, lead to sterility.

Outbreaks across the country continue to put people at risk. Learn more about outbreaks of mumps on the CDC website at www.cdc.gov/mumps/outbreaks.html.

The name "mumps" came from the phrase "to mumble," which was a description of the disease because of the side effects it causes. This "mumbling" resulted from the painful swelling of the salivary glands which is the most typical symptom of the disease.

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 www.vaccinateyourfamily.org.

Pertussis (Whooping Cough)

Pertussis, also known as whooping cough, is a highly 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." Some babies with whooping cough don't cough at all. Instead the disease can cause them to have a hard time breathing, or even stop breathing for short periods of time.

People of all ages can be affected by pertussis. However, it 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.

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. 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 those individuals who were previously vaccinated against whooping cough. In fact, some adolescents and adults who get pertussis may not even know they have the disease

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 *one 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 make sure to be up-to-date on their pertussis vaccinations *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 of age 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 www.vaccinateyourfamily.org.

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.

While the disease is usually mild in children and adults, rubella can be very dangerous for pregnant women and their babies. If a pregnant women 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 virus can spread to others through sneezing or coughing.

The symptoms of rubella are often so mild they're difficult to notice, especially in children. If symptoms do occur, they generally appear two to three weeks after exposure to the virus and last two to three 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 in the five-to-nine year age group. 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. They 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. 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, preferably at 11 or 12 years of age, and adults need Td booster shots every 10 years. For older children and adults who haven't received Tdap yet, the easiest thing to do is to get Tdap instead of their next regular tetanus booster. 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 highly 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 one to two 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 *two recommended doses* of the vaccine. Adults who have never had chickenpox or received the varicella vaccine should get two 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.

A person with shingles should cover their rash, avoid touching or scratching the rash, and wash their hands often to help avoid infecting someone who has not had chickenpox.

A new shingles vaccine called Shingrix was licensed by the FDA in 2017. CDC recommends that healthy adults 50 years and older get two doses of Shingrix. which provides strong protection against shingles and PHN. Shingrix is the preferred vaccine over Zostavax, a shingles vaccine in use 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.

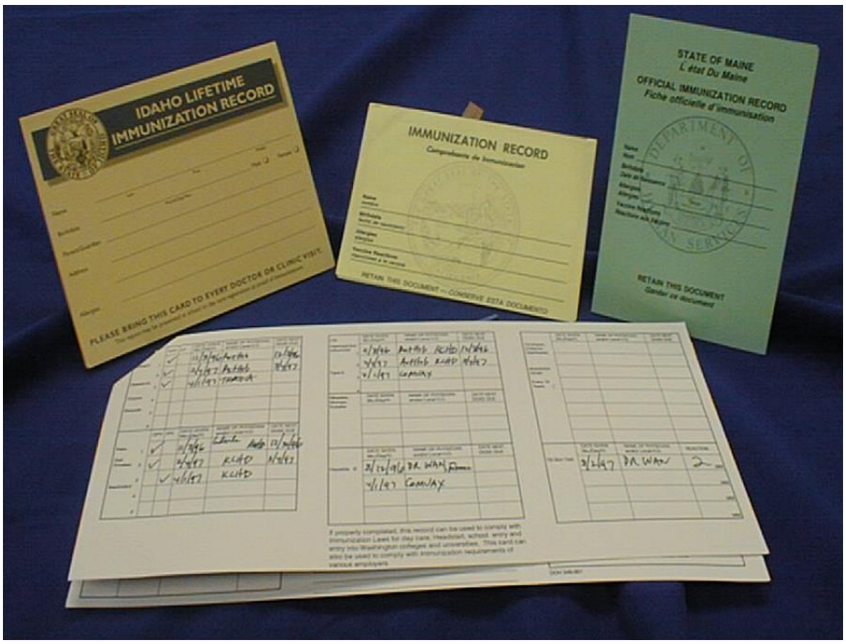
When asked if a child is up-to-date, parents typically overestimate their child's vaccination status. A documented record of vaccinations is more accurate than a parent's memory. A documented record is a record (computerized or paper) in which actual vaccination dates are recorded. This includes a parent's 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.

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

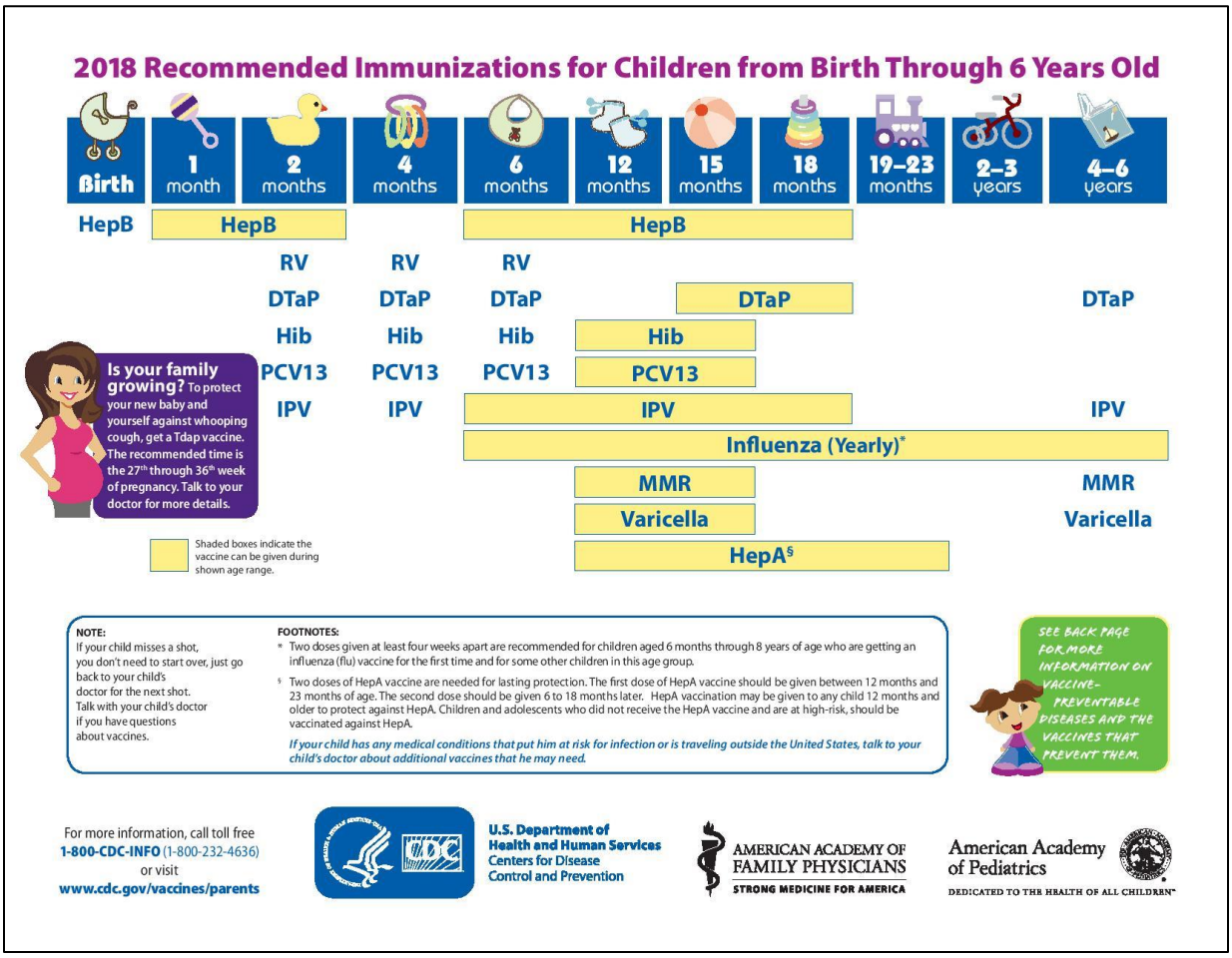
DETERMINING IF CHILD IS UP-TO-DATE ON THEIR VACCINES BASED ON THEIR DTaP VACCINATION STATUS	
Child's Age	***Minimum* Number of DTaP Doses**
Birth through 1month	0
3 months	1
5 months	2
7 months	3
19 months	4

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



Immunization Schedule for Children from Birth through 6 Years Old

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



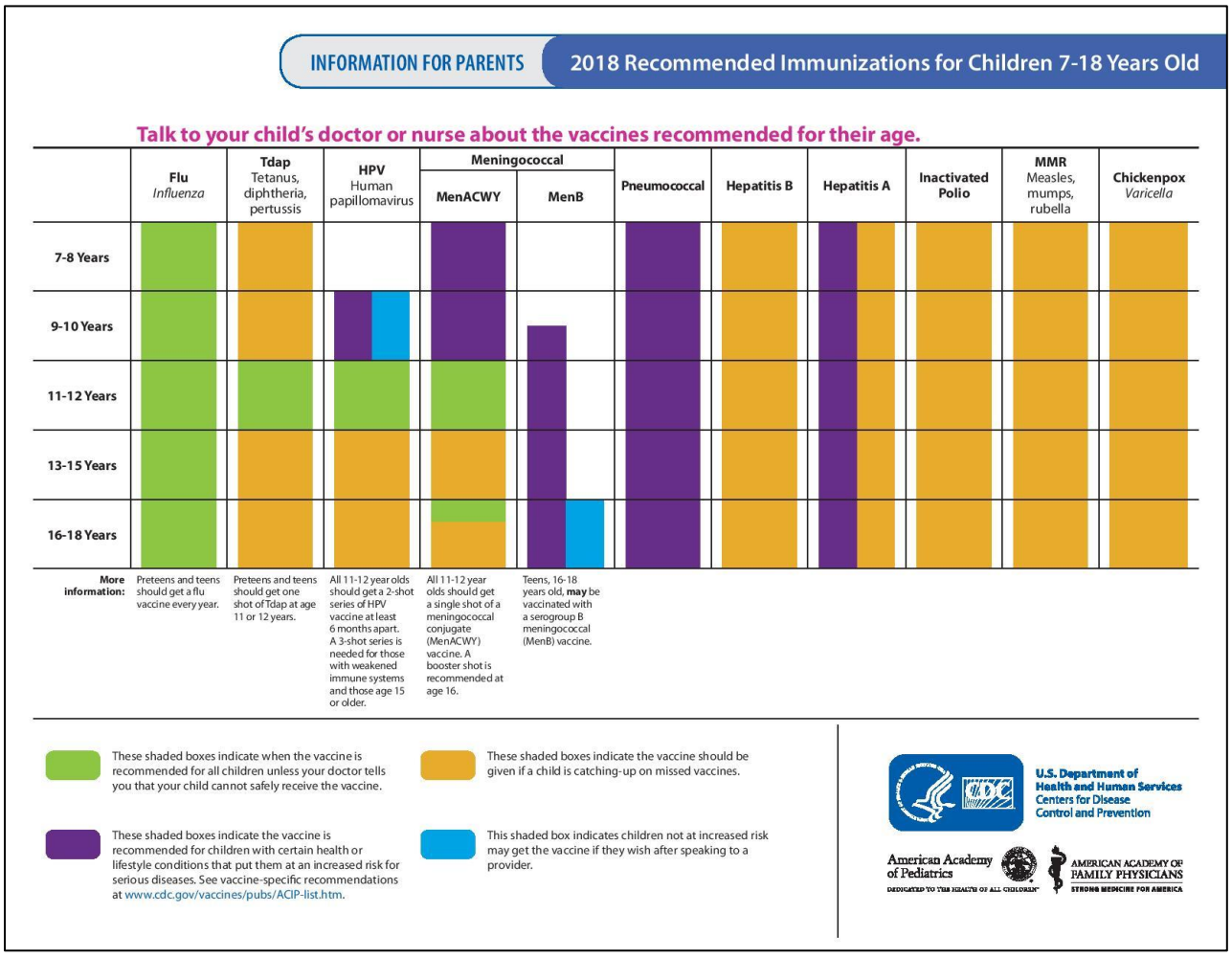
Making Referrals

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 2018 *Immunization Resources for Parents and Parents-to-Be* (in English and Spanish), which is available at vaccinateyourfamily.org.

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.

Immunization Schedules for Adolescents, Adults and Pregnant Women

The three schedules below are provided by the CDC and outline the recommended immunizations for children 7 through 18 years of age, adults and pregnant women. The recommended schedule for children 7 through 18 years old is also supported by the AAFP and the AAP. The CDC, ACOG and ACNM all strongly recommend flu and pertussis (Tdap) vaccinations for pregnant women. Recommended Childhood, Adolescent and Adult Immunization Schedules are available on the CDC website in English and Spanish at www.cdc.gov/vaccines/schedules.



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VACCINATE YOUR FAMILY
The Next Generation of Every Child By Two

INFORMATION FOR ADULT PATIENTS | **2018 Recommended Immunizations for Adults: By Health Condition**

If you have this health condition, talk to your health care professional about these vaccines

	Flu Influenza	Tdap or Td Tetanus, diphtheria, pertussis	Shingles Zoster		Pneumococcal		Meningococcal		MMR Measles, mumps, rubella	HPV Human papillomavirus		Chickenpox Varicella	Hepatitis A	Hepatitis B	Hib *Haemophilus influenzae* type b
			RZV	ZVL	PCV13	PPSV23	MenACWY	MenB		for women	for men				
Pregnancy															
Weakened Immune System				SHOULD NOT GET VACCINE					SHOULD NOT GET VACCINE			SHOULD NOT GET VACCINE			
HIV: **CD4 count less than 200**															
HIV: **CD4 count 200 or greater**															
Kidney disease or poor kidney function															
Spleen removed or does not work well															
Heart disease Chronic lung disease Chronic alcoholism															
Diabetes (Type 1 or Type 2)															
Chronic Liver Disease															
More Information:	You should get flu vaccine every year.	You should get 1 dose of Tdap if you did not get it as a child or adult. You should also get a Td booster every 10 years. Women should get 1 dose of Tdap vaccine during every pregnancy.	There are 2 types of zoster vaccine. You should get 2 doses of RZV at age 50 years or older (preferred) or 1 dose of ZVL at age 60 years or older, even if you had shingles before.		There are 2 types of pneumococcal vaccine. You should get 1 dose of PCV13 and at least 1 dose of PPSV23 depending on your age and health condition.		There are 2 types of meningococcal vaccine. You may need one or both types depending on your health condition.		You should get this vaccine if you did not get it when you were a child.	You should get HPV vaccine if you are a woman through age 26 years or a man through age 21 years and did not already complete the series.					You should get Hib vaccine if you do not have a spleen, have sickle cell disease, or received a bone marrow transplant.

For more information, call 1-800-CDC-INFO (1-800-232-4636) or visit www.cdc.gov/vaccines

Recommended For You: This vaccine is recommended for you ***unless*** your health care professional tells you that you do not need it or should not get it.

May Be Recommended For You: This vaccine is recommended for you if you have certain other risk factors due to your health condition. Talk to your health care professional to see if you need this vaccine.

YOU SHOULD NOT GET THIS VACCINE

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

CS272886-G

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

CS HCVG15-MAT-104 09/27/2016

Vaccine Preventable Diseases Continue to Take Lives Today: Real Life Stories

Callie Grace Van Tornhout – Pertussis Victim

Craig and Katie Van Tornhout wanted nothing more than a younger sibling for their son, Cole. After five years of miscarriages, Katie finally gave birth to a baby girl, whom they named Callie Grace. Callie was born six weeks early, but was strong and healthy. In January 2010, one-month old Callie developed a strange, dry cough. Katie took her to the pediatrician, who gave the baby a checkup but found no real signs of illness and sent the family home.

Over the next few days, Callie's coughing continued, she wasn't eating and she seemed lethargic, so her parents took her back to the doctor. During the visit, Callie suddenly stopped breathing. She was rushed to the hospital where doctors performed a variety of tests. Callie eventually regained her breathing and color and her parents were hopeful she would recover. But that Friday night, Callie again stopped breathing. Family members watched from behind a glass wall as a team of doctors and nurses performed CPR. Callie could not be saved. She was only 38 days old.

Days later, tests and the coroner's report confirmed that Callie had died of acute **pertussis** pneumonia. The diagnosis shocked the family as they had taken care to keep Callie in the house and away from family and friends to protect her from sickness. The family later learned that a hospital worker was the likely cause of transmission.

The DTaP (pediatric diphtheria, tetanus and acellular pertussis) vaccine is given to children as a series of shots starting at two months of age. Five doses of the vaccine are needed. It is recommended that pregnant women be vaccinated with the Tdap (adult tetanus, diphtheria and acellular pertussis) vaccine during *every* pregnancy in the 3rd trimester. In addition, new mothers (if not vaccinated during pregnancy), family members, and caregivers should be up-to-date with their pertussis vaccination to protect newborns too young to be fully protected from these diseases. **Callie was too young to receive the pertussis vaccine and no one in the family was offered the Tdap vaccine.**

Despite their heartache, the Van Tornhouts have traveled the country sharing their story in hope that it might help other parents learn about pertussis and the importance of immunizing women during *every* pregnancy, and the children and the adults around newborns.

Breanne Palmer – Influenza Victim

During the evening of December 20, 2003, 15-month-old Breanne Palmer developed a slight fever and began to show symptoms similar to her brother who had recently been diagnosed with influenza. The next morning, Breanne's fever rose to 101.5 F. Her parents took her to the pediatrician where a diagnosis of influenza was made. Breanne was given antibiotics and sent home.

After visiting the doctor, Breanne took a long nap and her temperature began to slowly come down. Her parents continued to monitor her condition and give Breanne medication for her fever. When Breanne went to bed that night her temperature was almost normal. However, as the night wore on, Breanne's temperature climbed again very rapidly reaching 105.5 F. Her parents put Breanne in a bath to help bring down her fever, but she began to have difficulty breathing so they called 911.

At the hospital, Breanne's temperature rose to 107 F. Her temperature was brought down by the doctors in the emergency room, but Breanne had to be transferred to another hospital for more intensive care. A special life-support machine was needed as the virus began to attack Breanne's heart and brain stem. After being transferred to yet another hospital, doctors told Breanne's parents that the damage to her young body was too extensive. There was nothing the life-support machine could do. Breanne died in her mother's arms on December 23, 2003 from influenza A infection.

Breanne's parents tried to get her vaccinated against the flu in early December but because she was diagnosed with an ear infection at the time her pediatrician would not vaccinate her.

"There is not a day that goes by that I don't think about what if my daughter had been vaccinated against the flu? I believe had she been vaccinated she would still be alive today, and I would be able to hear her laughter."
— Denise Palmer, Mother of Breanne

Since losing their daughter to the flu, Breanne's parents have joined other parents who have lost their child to the flu in an effort to make sure children are protected against this deadly virus. Go to www.familiesfightingflu.org for more information.

For more stories and videos about victims of vaccine-preventable diseases, visit Vaccinate Your Family (www.vaccinateyourfamily.org), Families Fighting Flu (www.familiesfightingflu.org) and Shot By Shot (www.shotbyshot.org).

Immunization Resources

Vaccinate Your Family (www.vaccinatetourfamily.org)

This website, which is hosted by Vaccinate Your Family: The Next Generation of Every Child By Two (VYF), contains information about immunizations for people of all ages and includes answers to the many questions parents have about vaccines and their safety.

Immunization Resources for Parents and Parents-to-Be (2018 Version)
(www.vaccinateyourfamily.org/resources)

Vaccinate Your Family – The Next Generation of Every Child by Two (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 Las Mujeres Embarazadas y Los Padres (Edición 2018)
(www.vaccinateyourfamily.org/resources)

Vaccinate Your Family: The Next Generation of Every Child by Two (VYF)

Recursos de Vacunación para Las Mujeres Embarazadas y Los Padres 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, VYF and the Immunization Action Coalition, 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/resources)

Vaccinate Your Family: The Next Generation of Every Child By Two (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 Clinics
(www.vaccinateyourfamily.org/files/resources/FINAL_VYF_Poster_Only.pdf)

Vaccinate Your Family: The Next Generation of Every Child By Two (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.

Vaccine Frequently-Asked Questions (FAQs) (Videos)
(www.vaccinateyourfamily.org/baby-and-child/protect/video-vaccine-faqs)

Vaccinate Your Family: The Next Generation of Every Child By Two (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.

Provider Resources for Vaccine Conversations with Parents
(www.cdc.gov/vaccines/hcp/patient-ed/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.

Vaccines.gov (www.vaccines.gov and espanol.vaccines.gov)

U.S. Department of Health and Human Services (HHS)

This website is the federal gateway to information on vaccines and immunization for infants, children, teenagers, adults and seniors. This website is also available in Spanish.

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-qa-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.

HealthCare.gov (www.healthcare.gov and www.cuidadodesalud.gov/es)

The U.S. Department of Health and Human Services (HHS)

The official site of the Affordable Care Act (ACA). The website includes information on health coverage choices. The website is also available in Spanish.