

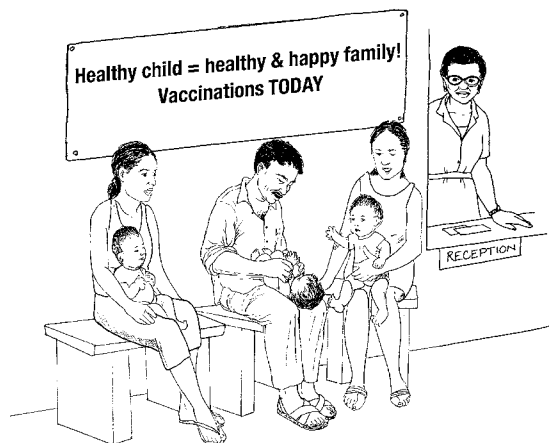
Vaccines Prevent Illness

Vaccinations, also called immunizations, can prevent many illnesses that might otherwise make people sick or even cause death. Vaccines work by strengthening the body's immune system, the part of the body that fights off infection and disease so the body can regain health. If the immune system is prepared and strong, it quickly recognizes threats to health and already knows how to fight them. Vaccines do not give you the illness.

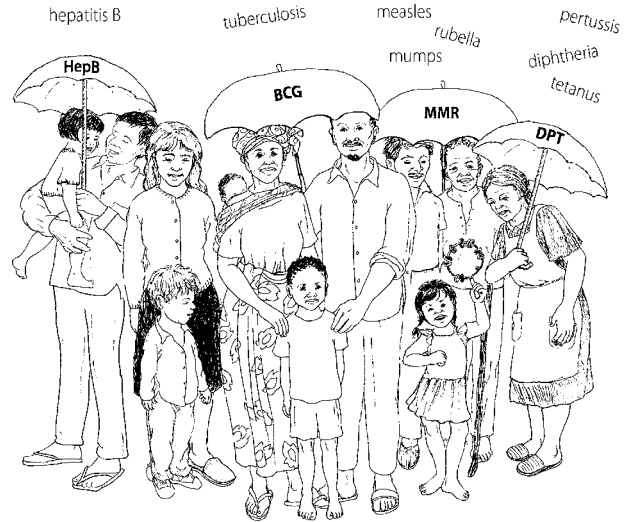
How do vaccines work? A vaccine is made of a mild or inactive germ and its presence shows the body how to stop similar germs in the future, before they make the person sick. The way the body builds this protection is by creating specific "antibodies" to successfully fight illness. These antibodies protect you and others that live around you against the germs that cause the illness.

Babies are born with some of the antibodies they need, which come directly from their mother. When mothers breastfeed, this strengthens the baby's immune system even more. Vaccinations build the baby's immune system as they get older. Just as good nutrition helps a child's body grow, vaccinations help grow the immune system.

Vaccinations work. Some sicknesses that killed or disabled many people in the past, such as smallpox, are now gone and the vaccine is no longer needed. Others illnesses targeted by vaccines are becoming less common. Vaccinating all babies and children, and also adults as needed, can keep many illnesses from spreading or returning.



A vaccine protects the person who receives it, and this protects others when enough people are vaccinated. If the disease cannot find new people that are unvaccinated, it cannot spread. Over time, with more people vaccinated, there will be fewer and fewer cases.



There is strength in numbers! When most people are vaccinated, their resistance to illness protects others who are too young or too sick to get the vaccination. This is called herd immunity.

Learn about vaccines and why we need them

Vaccines protect children from many dangerous diseases, including whooping cough, tetanus, pneumonia, measles, hepatitis B, tuberculosis, and diarrhea caused by rotavirus infection. The vaccine against HPV (a type of virus) prevents some cancers.

If your children are vaccinated, they will be protected from serious illnesses.

Vaccinations are usually free of cost for babies and children and every country has its own schedule for when each is given. Health workers schedule visits for babies and children to make sure they are growing well, and to give the vaccinations they need to stay healthy.

Many vaccines are given more than once to help our bodies build strength against a certain disease. After a person receives the main set or series of the same vaccine, for example, 3 injections over 6 months, they may still need one or more booster vaccinations later. When the effect of the vaccine wears off, a booster is a reminder to the body about how to fight off the illness.



? What if my child is sick when vaccinations are scheduled?



➔ Vaccinations can be given to someone with a cold or minor illness. If a child has a serious health problem, the health worker will tell the family if a vaccination should be delayed. When others in the family and the community are vaccinated, it will help prevent sickness in those who cannot receive a vaccine.

? Are vaccines safe?



➔ Vaccines are safe. They do not give the illness. Some vaccines may cause some aches or a mild fever, but that will go away quickly. If you hear rumors that a vaccine is unsafe, talk to trusted health workers to get reliable information.

? Are vaccinations only for children?



➔ All children need vaccines but the need for vaccinations does not end after childhood. For some illnesses, older children and adults will need additional injections, called “boosters,” to stay protected. This is because over time, the effect of some vaccines wear off. Pregnant women are also vaccinated to protect the mother and the baby’s health. Older people or a person with a serious illness may benefit from a vaccination to protect against an illness such as influenza that their body may not resist well.

? The number and type of vaccinations have changed compared to my first child. Why?



➔ For some diseases, more than one pharmaceutical company makes a vaccine that is safe and works well. They may have different schedules. So if two countries use a different vaccine brand, or the same country changes from one to another, the schedule of injections may change too. Other changes happen when a new vaccine is created or an old one is no longer needed.

Who Needs Vaccinations and When?

Each region, country, and sometimes each district within a country has its own list of needed vaccines:

- Some vaccines are given to almost everyone—infants, children, and adults. Older children or adults who missed vaccinations given to infants may still get them later.
- Some vaccines are useful only in certain regions and are given only to people who live or visit there.
- Some vaccines are not needed for everyone but are recommended for certain groups, such as women who are pregnant, health workers, or older people.
- When a disease is new to a region, usually everyone will need the vaccine.



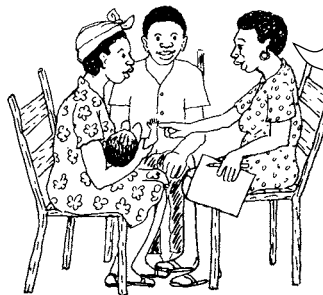
In my culture, everyone is family. By vaccinating our children, we protect everyone now and also help the future generations.

Routine vaccinations protect babies and children

Health workers give babies several check-ups during their first year of life. This is also when they give most vaccinations. Which ones and when each is given will depend on the health recommendations in your country.

To keep babies and children healthy, vaccinations are very important but so are the living conditions that prevent disease. Safe drinking water, good sanitation, breastfeeding for at least the first 6 months of life, and good nutrition will prevent much illness. (See the chapters *Water and Sanitation: Keys to Staying Healthy* and *Good Food Makes Good Health*.)


Vaccines and vaccine boosters are given to adults when another dose of vaccine is needed beyond childhood for the protection to last or because they did not receive all their vaccinations as children.



The baby is growing so well. Today we will give her the next vaccinations to keep her healthy.

Health authorities in each country recommend a schedule for vaccinating babies and children. It shows which vaccinations are given together and at what age. When 2 vaccines cannot be given together, it is often because they do not work as well when they are put in the body at the same time.

At birth		BCG HepB
2 months	1st dose each:	polio pentavalent rotavirus pneumococcal
4 months	2nd dose each:	
6 months	3rd dose each	polio pneumococcal
9 to 12 months		1st MMR pneumococcal booster
18 months		2nd MMR polio booster
4 to 6 years		DPT 2nd polio booster
9 to 11 years		Tetanus booster 2 doses of HPV



A vaccination schedule often looks similar to this one, although the ages for each group of vaccines may be different from one country to another. Also, not every country uses the same combination vaccines and not all vaccines are needed everywhere. Find out what is recommended where you live.

Vaccines and HIV

In general, babies and adults with HIV need the same vaccinations as other people. In some cases, a child or adult with HIV may need an extra dose, as with the measles vaccine.

For a few vaccines (BCG, MMR, OPV), make sure health is stable and get HIV treatment medicines started before vaccination. HIV treatment makes the body's immune system stronger and this makes the vaccinations work even better.

For the BCG vaccine, it is safe to give at birth even if the mother has HIV. However, if the child is older and has HIV, treat the HIV first.

Vaccines and pregnancy

Vaccines protect the health of the mother and the developing baby. Also, the pregnant woman passes antibodies from vaccines to her unborn child that help protect the baby after birth. Newborns are too young for some vaccines in their first weeks or months of life.

Share this information with parents of girls and with women who are pregnant:

- Vaccinations do not affect a girl or a woman's ability to become pregnant.
- Most vaccines are safe to get during pregnancy.
- When girls receive all their vaccinations as children, fewer vaccines are needed during pregnancy. The rubella (German measles) vaccine is a good example of a vaccine where it is helpful to give to children or young women before pregnancy because rubella in a pregnant mother is dangerous for a baby.
- Everyone needs the tetanus vaccine repeated over the years, either as a single vaccine or as a part of a combination vaccine. If a woman has not had a vaccine against tetanus recently, she will need one during pregnancy. The vaccine prevents dangerous tetanus infection in a newborn caused by an unsterile tool used during childbirth.
- In your country, health workers may recommend other vaccines during pregnancy, such as whooping cough or flu vaccines.

Some vaccinations are avoided during pregnancy such as BCG or measles vaccines. When giving vaccinations, ask a woman first if she might be pregnant.

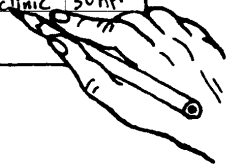


Being fully vaccinated as a girl means pregnancy later is safer. If you are thinking about getting pregnant, talk to a health worker to make sure all your vaccinations are up to date.

Keep a record

Ask for and keep any immunization cards or documents that show the name and date of vaccinations. Children often need these records to enroll in school and adults need them for work, travel, and to show health workers the vaccinations they have already received and those they still need. If they don't have the cards at your clinic, keep a record yourself and have the person who gave the vaccination fill out the information and sign it.

IMMUNIZATION RECORD			
Name: MIRA KUMAR			
Date of birth: 10 FEB 2019			
Medical conditions or allergies:			
Vaccine name and type	Date given	Given by	Next dose
BCG	10 Feb 19	Birth center	—
bOPV polio	10 Feb 19	Birth center	30 Mar
Hep B	10 Feb 19	Birth center	30 Mar
DTP-Hib-HepB	30 Mar 19	Baby clinic	30 Apr
OPV polio	30 Mar 19	Baby clinic	30 Apr
Rotavirus	30 Mar 19	Baby clinic	30 Apr



Common Vaccines

In most countries, there are vaccines to protect against:

- Tuberculosis (TB)
- Tetanus
- Diphtheria
- Whooping cough (pertussis)
- Hepatitis B
- Haemophilus influenza type b, that causes several diseases
- Polio
- Rotavirus, a cause of diarrhea in infants and young children
- Pneumococcus, that causes pneumonia and other infections
- Measles
- Rubella (German measles)
- Human papillomavirus (HPV), that causes cancer of the cervix

Where needed, there are vaccines to protect against:

- Cholera
- Meningococcal infection
- Yellow fever
- Japanese encephalitis
- Tick-borne encephalitis
- Hepatitis A
- Chickenpox (varicella)
- Influenza (flu)
- Typhoid fever
- Rabies



BCG vaccine protects against tuberculosis (TB)	
<p>The BCG is an injection that goes just under the skin. It is given as soon as possible after birth.</p> <ul style="list-style-type: none"> • If anyone in a household has TB, and the children never received the BCG, vaccinate them as soon as possible. • Do not give BCG vaccinations to pregnant women. • A baby born to a mother with HIV can get the BCG at birth. For anyone with confirmed HIV, begin treating the HIV with antiretroviral medicines before giving the BCG. 	<p>Tuberculosis (TB) is a dangerous infection, usually in the lungs, that can be treated with medicine and cured. If untreated, TB slowly destroys the lungs and stops the person from breathing. The BCG vaccine helps prevent the most dangerous types of TB and helps the body resist other infections too.</p>



*Combination vaccines are created so fewer injections are needed. The **pentavalent** is a common combination vaccine to protect against 5 diseases with only 1 injection: diphtheria, pertussis, tetanus, hepatitis B, Hib. The **hexavalent** is used in some countries to protect against 6 illnesses: the same 5 as the pentavalent plus polio.*

DPT (also DTaP, Tdap) protects against diphtheria, pertussis, tetanus	
<p>The DPT vaccine protects against 3 diseases. The pentavalent and hexavalent vaccines include DPT. By 6 months old, babies get a series of 3 injections.</p> <ul style="list-style-type: none"> • Older children usually get 3 booster injections of DTP or a combination to prevent diphtheria and tetanus (Td, Dt). • DPT vaccine in pregnancy helps protect the baby. • Receiving all 6 doses of DPT (series of 3 and 3 boosters) gives protection from tetanus for decades. Tetanus boosters (TT) are needed if childhood series was incomplete or if you get a deep or dirty wound. 	<p>Diphtheria mostly affects children and can swell the throat so much the person cannot breathe.</p> <p>Pertussis causes a bad cough called whooping cough, making it hard to breathe. This is especially dangerous for babies.</p> <p>Tetanus can become deadly quickly. Any person can get it from a cut or wound. Newborns can get tetanus if the mother is not vaccinated.</p>
HepB (also HBV) protects against hepatitis B	
<p>By 6 months old, babies get a series of 3 or 4 injections.</p> <ul style="list-style-type: none"> • The first vaccination is given at birth and the others by age 6 months, either with the DPT series or as part of the pentavalent or hexavalent vaccines. • Vaccinate older children and adults with the series of 3 HepB injections if they did not receive them as a baby. 	<p>Hepatitis B causes serious liver problems and sometimes liver cancer.</p> <p>It can be passed from a mother to baby during birth, or between 2 people through sex or unclean needles.</p>
Hib vaccine protects against haemophilus influenza type b	
<p>By 6 months old, babies get a series of 3 injections, either with the DPT series or as part of the pentavalent or hexavalent vaccines.</p> <ul style="list-style-type: none"> • There may be a booster needed at 12 to 15 months. • Adults and children over 5 years old and adults usually do not need the Hib vaccine unless they have sickle cell anemia or immune system problems. 	<p>Haemophilus influenza type b is not like the influenza commonly called the flu. It is a germ that causes meningitis, pneumonia, skin and bone infections, and other serious illnesses.</p>

Polio vaccine (OPV, IPV) protects against polio	
<p>By 6 months old, babies get a series of 3 or 4 doses.</p> <ul style="list-style-type: none"> • The first dose is given at birth and the others by age 6 months, along with the DPT series. • The OPV (Oral Polio Vaccine) are drops given by mouth and the IPV (Inactivated Polio Vaccine) is given as an injection. Depending on the country, the polio vaccine series usually includes both the OPV and the IPV. 	<p>Polio is a virus that can lead to paralysis, breathing problems, and even death. Because so many people are vaccinated against it, polio has almost disappeared.</p>
The rotavirus (RV) vaccine protects against rotavirus	
<p>By 6 months old, babies get this vaccine 2 or 3 times, depending on the vaccine manufacturer. It is given as drops in the mouth.</p> <ul style="list-style-type: none"> • Given at the same time as the DPT or pentavalent series. <p>For 2 weeks after the baby's vaccination, take extra care to wash your hands well when changing diapers to avoid mild illness.</p>	<p>Rotavirus is a common disease that causes severe diarrhea, fever, and vomiting. It spreads easily and is especially dangerous to babies and young children.</p>
Pneumococcal (conjugate) vaccine protects against pneumonia and other infections	
<p>Babies get a series of 3 injections.</p> <ul style="list-style-type: none"> • The vaccination is usually given at the same time as the DPT or pentavalent series but some countries give the first 2 injections by 6 months and a third injection later. 	<p>This vaccine prevents serious lung, brain, and blood infections caused by pneumococcus germs.</p> <p>Vaccinating all children is the priority, but it also helps protect older adults against pneumonia.</p>
Measles, MR, MMR vaccines protect against measles	
<p>The vaccine is often given as part of a combination vaccine, either the MR (Measles and Rubella) or the MMR (Measles, Mumps, and Rubella). Children will need at least 2 doses.</p> <ul style="list-style-type: none"> • In a measles outbreak, infants as young as 6 months may be vaccinated. They receive the normal 2 doses after that. • A child with HIV also needs 2 or sometimes 3 injections but a child very ill from HIV, needs HIV treatment and stable health before vaccination. 	<p>Measles spreads easily among children and causes rash, fever and cough. If untreated, it can result in diarrhea, eye or ear infections, blindness, or death.</p>
Rubella, MR, MMR vaccines protect against rubella (German measles)	
<p>Children need at least 1 injection. Give with the first measles vaccine.</p> <ul style="list-style-type: none"> • Many children receive 2 injections since the rubella vaccine is part of 2 common combination vaccines, the MR (Measles and Rubella) and the MMR (Measles, Mumps, and Rubella) that are given 2 times. • In places where most people were not vaccinated as infants, rubella vaccine campaigns may focus on older girls. 	<p>Rubella can cause a rash and fever and will then go away. But if a pregnant woman gets rubella, it is very dangerous to her developing child.</p> <p>Vaccinating all children keeps rubella away and helps so pregnant women don't get it. Also, girls who are vaccinated won't get rubella if they become pregnant as adults.</p>

HPV vaccine protects against human papillomavirus

Girls need 2 or 3 injections, depending on their age.

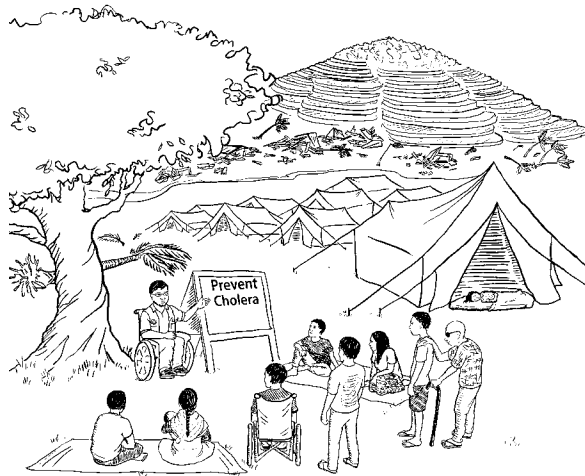
- The first injection is given between 9 or 10 years old, and the second six months later. For a woman who is already 15 years or older: give the first injection, wait 4 weeks for the second, and wait 12 weeks more to give the third.

The vaccine prevents cervical cancer in women and some cancers in men. It is most important for girls, but if budgets and supplies permit, some countries help boys to get this vaccination too.

Vaccines used in only some regions and other vaccines that only some people need**Cholera**

Cholera is a diarrhea disease that can quickly kill people through dehydration, especially babies and children, (see the chapter Belly Pain, Diarrhea, and Worms, pages 28 to 29).

The vaccine against cholera is taken by mouth and used where an outbreak has started or might occur, especially in camps or settlements where refugees or displaced persons are living. Either 2 or 3 doses will be needed depending on the vaccine manufacturer. If cholera returns to a region, people may need the complete series again or just 1 booster dose.



Pregnant and breastfeeding women and people with HIV should be included in any cholera vaccination campaign.

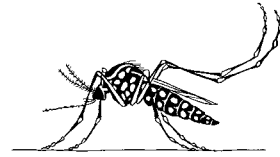
Meningococcal infection

This vaccine prevents a very serious meningitis brain infection most common in countries of northern and central Africa. The vaccine is for children and adults. Health workers will need it if there is an outbreak. It is safe for pregnant women. Either 1 or 2 doses will be needed, depending on the vaccine manufacturer. Different regions use the version of this vaccine matched to the type of meningococcal germ that is present.

Yellow fever

Yellow fever is a virus carried by mosquitoes. When yellow fever comes to a new area, it spreads quickly and is especially dangerous for young children.

Where yellow fever is common, vaccinate children with 1 dose at the same time as measles, at 9 to 12 months old. If yellow fever comes to a new region, vaccinate everyone, including babies older than 6 months.



Japanese encephalitis

Japanese encephalitis is a virus carried and spread by mosquitoes in parts of Asia. A vaccination campaign might first target all children younger than 15 years old. After that, only new babies will need to be vaccinated. Children need 1 or 2 injections, depending on the vaccine manufacturer.

Tick-borne encephalitis

This encephalitis is carried by ticks, tiny biting insects that burrow into the skin and are hard to see.

Children usually need 3 injections, the first at either 1 or 3 years old, a second 1 to 7 months later, and a third 9 to 12 months after the second one, depending on the type and vaccine manufacturer. Where tick-borne encephalitis is common, a booster will be needed every 3 to 5 years. Because the sickness is especially dangerous for older people, campaigns may focus on vaccinating adults over 50 years old.

Hepatitis A

Hepatitis A is spread by contaminated food or water and harms the liver. It causes extreme tiredness, sometimes for months. It goes away on its own and will not return. Where hepatitis A is common, there is no need for vaccination but where most people have never had the illness, the vaccine will prevent sickness.

Either 1 or 2 doses of vaccine is given depending on the manufacturer. When routinely given to children, the first injection is given at around 12 months old, and the second 6 to 18 months later.

Chickenpox (varicella)

This vaccine prevents chickenpox, an illness that causes fever, rash, itching, and tiredness during 1 or 2 weeks. Depending on the manufacturer, either 1 or 2 injections are given to every child, and sometimes to older children and adults.

Influenza (flu)

Influenza (flu) is the name for a group of viruses that spread for a few months every year, causing fever, chills, and other signs similar to common cold but more severe. Most people will recover from the flu, but it can be serious for babies, elders, or people with health problems. A new vaccine is created each year to protect against the changing flu viruses. Vaccinating women who are pregnant is often a priority because they will transfer protection to the developing baby, who cannot be vaccinated against the flu until at least 6 months of age.

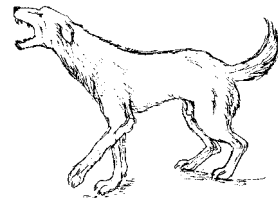
Usually 1 injection is given each year. Children 6 months to 5 years old are given 2 injections, 4 weeks apart, the first time they are vaccinated.

Typhoid fever

Typhoid is an infection causing fever, vomiting and other signs. It can be treated with antibiotics. Typhoid spreads from person to person through food or water. Handwashing and access to clean water and sanitation prevent it from spreading. The vaccine against typhoid comes in 2 forms: injection or tablets. The vaccine is used mostly when there is a typhoid outbreak and also for people traveling to where typhoid is common.

Rabies

Rabies is a deadly virus carried by animals, usually dogs or bats. Rabies is very rare in some countries and more common in others. Vaccinating all dogs against rabies lowers the risk to humans. If an animal with rabies bites someone, the person needs the rabies vaccine injection series starting right away and they also may need an injection of rabies immunoglobulin (see the chapter on First Aid, page 75). Washing the bite very well with soap and water for at least 15 minutes is important.



Using the rabies vaccine after an animal bite: When the person needs both rabies immunoglobulin and rabies vaccine, give the immunoglobulin first then use a different clean needle for the vaccine. Inject the complete vial of vaccine (either 0.5 ml or 1 ml depending on the vaccine manufacturer) into the upper arm muscle on the day of the bite, and then again on day 3 and day 7. Then, a fourth injection is given between day 14 (2 weeks) and day 28 (4 weeks) after the bite. For a child 2 years or younger, the injections are given in the upper thigh. Do not give rabies vaccine in the buttock.

Even if there is no rabies immunoglobulin available, washing the skin very well right away and giving the series of rabies vaccine can prevent rabies.

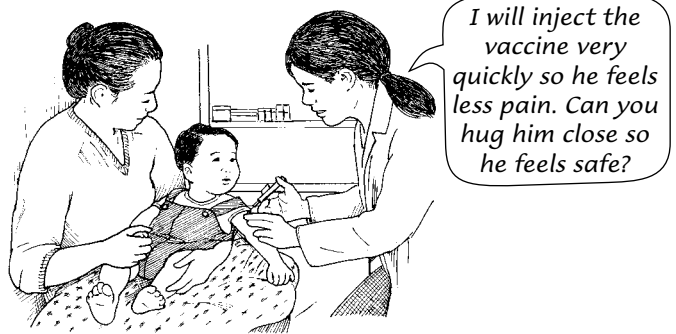
The rabies vaccine is given to prevent rabies before a person is bitten but usually this is only needed by people who work directly with animals that are likely to have rabies.

Health Workers: Key to Vaccinations

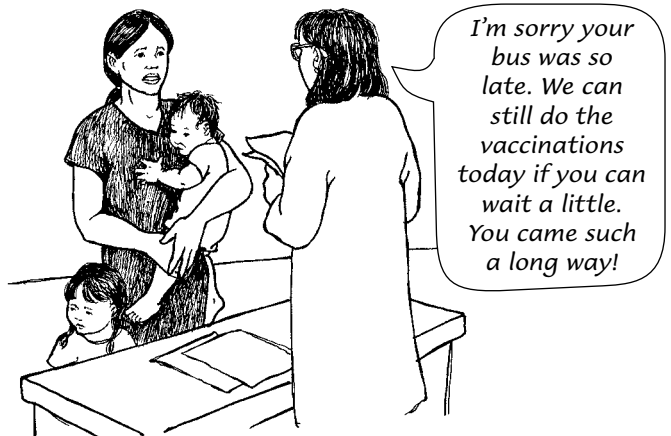
Health workers are the most important ingredient in any campaign to help children and adults get the vaccinations they need for everyone to stay healthy. Even if you are not the health worker giving the vaccination, people listen to your advice. As a member of the community, people trust you while they may not trust an outside visitor from a government vaccination program.

If you work in a health center or clinic:

- Be friendly and welcoming to each parent. Let parents know that any question is a good question and they need not feel bad for asking.
- Because injections may hurt, do your best to make the experience better for the child. Maybe you can distract the child right after the injection with something that is brightly-colored or makes a sound.
- In a group or to each family explain each vaccination and why it is needed, before giving the vaccination. Describe if it normally causes a mild fever or ache in the arm so that parents won't worry. Explain what to do if parents notice any danger signs, such as an allergic reaction.
- If the clinic has run out of a needed vaccine, see if it is available in another clinic or make a plan with the family about when they can come back. You can write a reminder on their clinic or vaccination card.
- Help families keep vaccination records with a child health booklet or other method. This encourages people to plan and make decisions for their children's health.

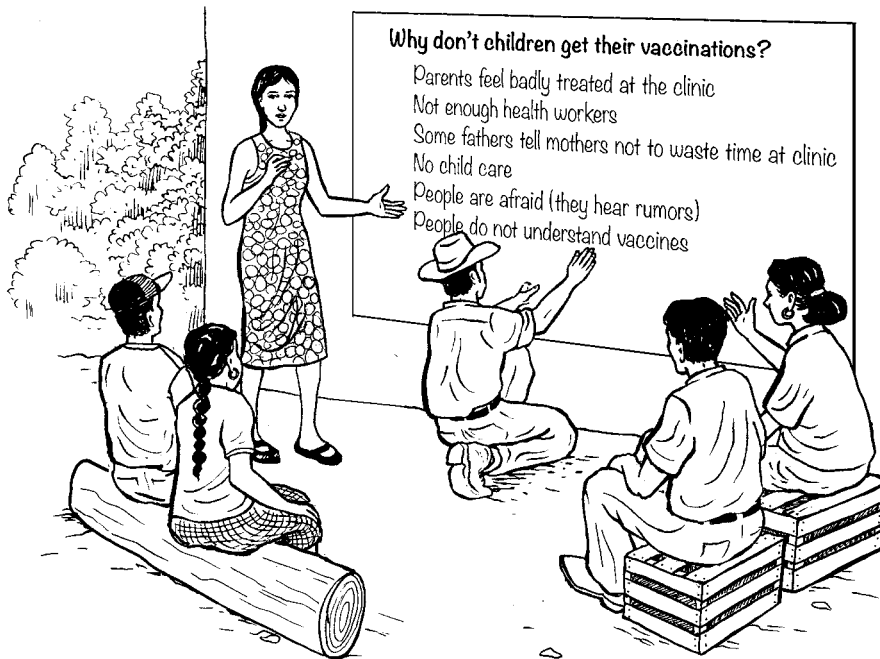


Many health clinics do not get all the resources they need. If this causes people to have a bad experience in the clinic, they might not come back to get a vaccination. But even with too few workers or supplies, find ways to improve people's experience and make them feel good about visiting.

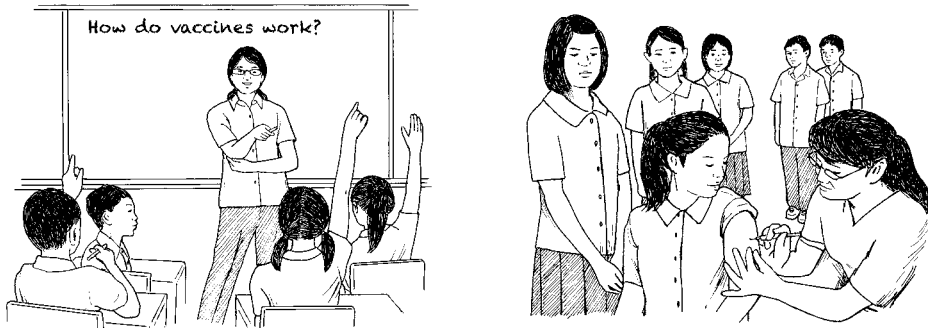


In the community, encourage families to get vaccinated:

- Reach out to both mothers and fathers. Even though mothers usually bring the children to the clinic, when fathers also understand the importance of vaccines, children are more likely to get them. Maybe it will help to talk with grandparents or other family members too.
- If a family is avoiding vaccinations, find out why. Maybe it is a problem with transport, money, or something else you can help solve. Reassure them about the safety and value of vaccinations.
- Train and involve midwives or others who help pregnant women and new mothers so they can answer questions about vaccinations and help people get them.
- Involve children in promoting vaccinations. If children learn about it in school, they can talk to their parents about vaccinations for siblings, family members, and neighbors.
- Do what works in your community. Talking to people in their homes might help. Or you may find that parents like visiting the health center. Talking with teachers and religious or other leaders in the community can encourage more people to get vaccinated.



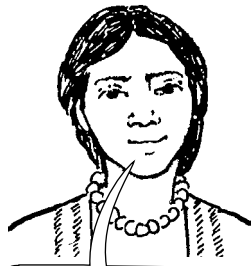
You know your community best. When organizing how to make sure all children get their vaccines, look at who you are trying to reach and what motivates them, what their concerns are, who makes which family decisions, and how to involve respected community leaders. Also find out if it is hard for people to get health advice and health services and what would make it easier.



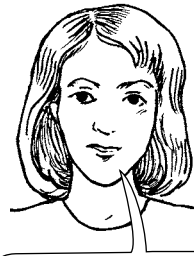
Schools can teach young people about the importance of vaccines and the science of how they work. Vaccination programs can also reach children by offering vaccinations at school.



Radio spots in all languages work well for us.



I am my town council's vaccination champion. I get people excited and involved.



Parents like the reminder texts our clinic sends out about vaccinations.



I help my church group find trustworthy information on vaccinations.

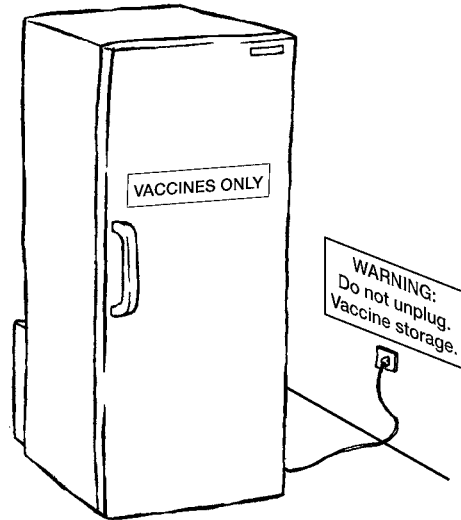
Public participation: A vaccination for equality

Vaccinations eliminate or reduce the spread of many sicknesses that previously caused death or serious health problems. But this is most true where vaccinations are free or inexpensive, and the health systems that deliver them work. That's why vaccinations are too important to leave to governments and pharmaceutical companies. Health workers, teachers, and other community leaders need to speak up to ensure vaccinations are always safe, given at no cost, and available to everyone who needs them, young and old. People need to pressure their governments to solve problems of unsafe water, lack of sanitation, poverty, discrimination, and lack of vaccinations—all of which cause poor health.

Vaccine Management

Keeping vaccines at the right temperature (maintaining the cold chain)

It is very important to keep vaccines at the right temperature. If certain vaccines get warm, they may spoil and not work. And some vaccines must stay cold but cannot be frozen or they will not work. Vaccines need to be kept at the correct temperature from the factory where they are made to the community where a health worker vaccinates the local children. If at any time from manufacturer to transport to storage the vaccine is too warm, or frozen when it shouldn't be, it becomes useless.



Refrigerator units are used to transport and store vaccines as well as the liquids used to dilute them. Learn which vaccines are stored at what temperatures and what shelf or compartment is used for each. In general,

vaccines are stored at a temperature that is under 8° C and slightly above freezing (2° C). See the box with lists of the vaccines that must not be allowed to get too warm and those which are frozen.

Some vaccines can spoil in bright light, including BCG and MMR. To protect them from sunlight and strong indoor lights, keep them in their dark glass vials and their extra packaging.

When a vaccine is made ready for use by mixing it with its diluting liquid, it must also be kept cool. People trained to handle the vaccines will know how many hours vaccines remain useful after mixing and if they need to be discarded at the end of the day.

Vaccines that can be frozen:

Measles
MR
MMR
BCG
OPV (oral poliovirus)
Yellow fever
Japanese encephalitis

Vaccines kept very cold but DO NOT FREEZE:

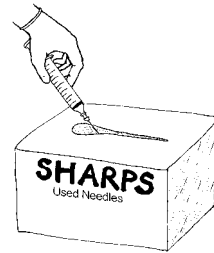
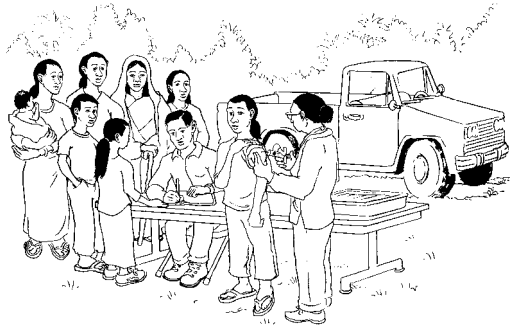
Cholera
Pentavalent
Hepatitis B (Hep B)
Hib (liquid)
HPV (human papillomavirus)
IPV (inactivated poliovirus)
Influenza
Pneumococcal
Rotavirus (liquid and freeze-dried)
Tetanus (DT, Td)

Learn how to store, prepare, and give vaccines

Everyone can promote vaccinations and many health workers learn how to give them too. If you are giving vaccinations or handling vaccines, your training will include:

- how to prepare the vaccines.
- how to determine the correct dose for different age groups.
- where to find expiration dates and how to dispose of expired vaccines.
- how to choose the correct needle size, angle of injection, and injection place on the body for each vaccine.

For your own health and the health of those you are helping, wash your hands before vaccinating each person. Use a needle one time only and then safely discard it.



Take responsibility for vaccination waste

The last step of a vaccination campaign is often forgotten: properly disposing of the waste. The leftover plastics, needles, and biological materials create health problems for people and the environment, especially if they are burned or buried unsafely or left where children can pick them up.

An immunization program can plan to safely dispose of waste by:

- using the same vehicles that deliver the supplies to carry away waste for treatment and safe disposal.
- setting up regional waste treatment centers with burial pits.
- helping community clinics to set up simple health care waste disposal systems, including separation of wastes and safe burial pits. (See *Community Guide to Environmental Health*, Chapter 19: Health Care Waste.)

