

CHAPTER 5
Preventing infection

In this chapter:

Preventing infection saves lives49
Infection is caused by germs. 49 How germs get into the body. 50

Prevent infection by keeping germs away52

Clean your hands and wear protective clothing53
Wash your hands often. 53 Protect yourself from infection. 56
Wear gloves 54

Clean the space and bedding.....57
Clean the space 57 Clean and disinfect the bedding 58

Clean and disinfect or sterilize tools.....59
Soak your tools 59 How to disinfect by boiling 62
Clean your tools 59 How to disinfect by steaming. 62
Sterilize your tools 59 If possible, avoid using chemicals 63
How to sterilize by baking 61 Some equipment needs special care . . 65
How to sterilize by pressure steaming . 61

Get rid of wastes safely.....67
Burying wastes. 68

Preventing infection

CHAPTER 5

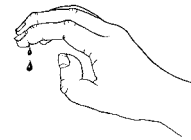
Preventing infection saves lives

Infection makes people sick and can even kill them. It is one of the most common causes of death after childbirth. Procedures that involve putting medical tools inside a woman's womb, such as inserting an intrauterine device (IUD) or doing manual vacuum aspiration (MVA), can also cause infection. Much of the work of a midwife, and any procedure inside the womb (invasive procedure), is safe only if you take steps to prevent infection, like we outline in this chapter.



Germs can live on tools, even tools that look clean.

This chapter explains how to avoid infection by killing or controlling harmful germs. Germs are organisms that carry sickness. Germs are everywhere, but they are so small that they can only be seen with a microscope. The dangerous germs in blood, stool, body fluids (like semen and amniotic waters), and dirt can cause serious sickness when they get into someone's body.



Germs live in body fluids, like blood.

Infection is caused by germs

Some sicknesses, like arthritis, diabetes, asthma, and epilepsy, are not caused by germs. They cannot be passed from one person to another.

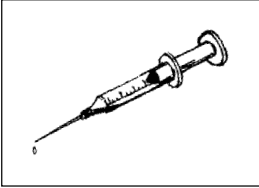
Other sicknesses, like measles, hepatitis, tetanus, womb infection, HIV, and the flu, are infections caused by germs. People get sick when the germs that cause these infections get inside their bodies.

How germs get into the body

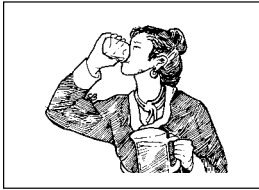
Germs can get inside the body in different ways.



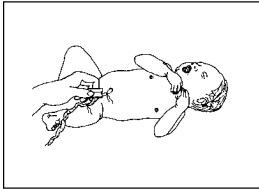
Some germs pass from one person to another through semen or vaginal mucus (body fluids) when people have sex. HIV and other sexually transmitted infections like chlamydia and gonorrhea can spread this way.



Some germs pass through blood when the blood or body fluid of an infected person get into a cut or through the skin — like with a needle that has been used for piercing or injections. HIV, hepatitis B, and hepatitis C can spread this way.



Some germs live in dirty water and pass when people drink it. Cholera and diarrheal diseases spread this way.



Some germs live in dirt, on skin, or in the air, and are not dangerous unless they get into a person's blood. These germs can get into the blood when an instrument that has germs on it is used inside a woman's womb, or to cut the skin or a baby's cord. Tetanus and womb infection can spread this way.



Some germs pass through the air when a sick person coughs or sneezes. Colds, flu, and tuberculosis can spread this way.

Keep sick people away from births

One simple thing midwives can do to prevent infection is to keep sick people away from women who are pregnant or giving birth. Keep anyone who has a sore throat, cough, fever, or other illness that passes through germs away from births. And do not let anyone with a sore on their hands or face touch a new baby.





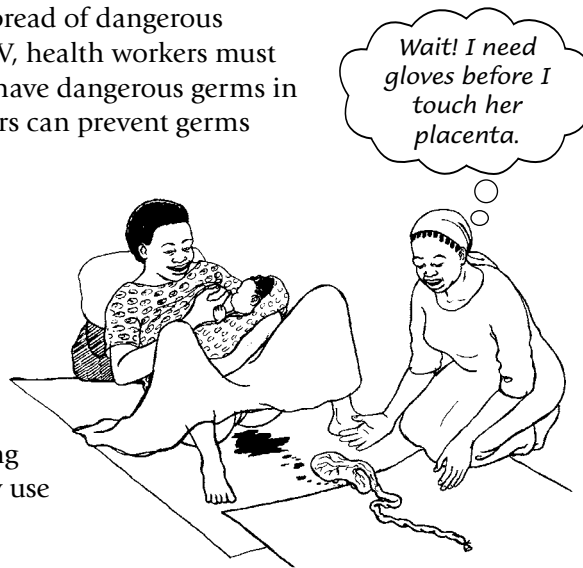
If you are sick but you must go to a birth, you can cover your mouth and nose with a scarf, a folded cloth or a mask. Wash your hands often and cover your mouth when you sneeze or cough. Be sure to wash your hands after each time you sneeze or cough. Try not to touch the new baby too much.

Anyone may carry germs that cause sickness

People do not always know that they have an infection. And there is no way to tell for sure what germs a person has just by looking at them. Some people have germs in their blood or other body fluids but do not seem sick.

To be safe, and to stop the spread of dangerous infections like hepatitis and HIV, health workers must treat everyone as if they might have dangerous germs in their body fluids. Health workers can prevent germs from spreading:

- by wearing gloves and other protective clothing, to prevent blood and other body fluids that contain germs from getting on themselves or others.
- by cleaning and disinfecting or sterilizing the tools they use during births and other procedures.

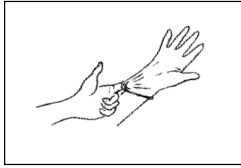


Note: Good general health can help avoid infection. Healthy eating, enough rest, and emotional and spiritual well-being are all important for staying healthy. Sometimes they are enough to help people fight germs that get inside the body so the person does not get sick.

But during birth and invasive medical procedures, a woman's body is more open and vulnerable to infection, and good general health is usually not enough. Germs that are usually kept out of the body can get into the womb. Any cut in the skin also makes a person more vulnerable to infection because the skin usually helps keep germs out of the body. Even an injection can cause an infection if the syringe has harmful germs on it.

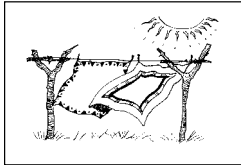
Prevent infection by keeping germs away

Here are the basic rules to prevent infection.



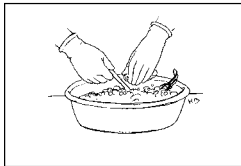
Clean your hands and wear protective clothing.

Wash your hands often and wear gloves and other protective clothing to prevent spreading germs between people and to keep germs away from yourself (see page 53).



Clean the space and bedding.

Clean the area where births and exams happen, to keep germs away (see page 57).



Clean and sterilize tools.

Wash and sterilize tools to kill any germs on them (see page 59).



Get rid of wastes safely.

Throw away waste products carefully to prevent people in the community from getting sick from the germs left on them (see page 67).

Remember: Infection can spread most easily when a health worker is caring for many people. For example, if her hands are not clean or her tools are not sterile, she will pass germs from one woman to another to another. For this reason, a woman giving birth at a hospital or maternity center with many other women has more risk of infection than a woman giving birth at home.

Adapt this book to work for you

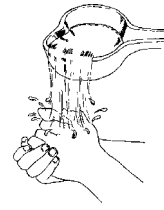
This chapter contains many detailed instructions for preventing infection. They are all important, but they may not all be possible. You will have to decide which you are able to do, or if there are ways you can adapt the instructions to work for you.



Clean your hands and wear protective clothing

Wash your hands often

Washing your hands is one of the most important things you can do to prevent infection. It prevents you from spreading germs to another person, and it helps protect you from germs, too. If you can do nothing else to prevent infection, you must wash your hands.



Wash your hands with soap and clean water. If you do not have soap, you can use ash (but not dirt!). Be sure to rinse all the soap or ash off. When you wash your hands, and especially when you rinse them, use clean water that is flowing, not water sitting in a bowl. When you wash your hands in a bowl, the germs that come off into the water will get back onto your hands again.

Each time you care for a woman, wash your hands before you touch her body, after you touch her body, and after you touch anything that has her blood or fluid on it (like the placenta). Wash before you put on gloves and after you take gloves off. If you are helping more than one woman at once, like at a hospital, it is very important to wash between helping each person.

Basic hand washing (cleaning with soap and water for about 20 to 30 seconds) removes most germs. But sometimes to remove more germs, you should wash your hands for a full 3 minutes, and scrub under your fingernails.

How to do a 3-minute hand wash

Before you start, take off rings, bracelets, and other jewelry.

1



Wash your hands and arms with soap and clean water — all the way up to your elbows.

2



Make sure to scrub in between your fingers.

3



If you have a clean brush, scrub your fingernails.

4



Keep scrubbing, brushing, and washing your hands and arms for 3 minutes! Spend most of this time on your hands.

5



Rinse with clean, running water.

6



Dry your hands in the air instead of using a towel. Do not touch anything until your hands are dry.

Always do a 3-minute hand wash

before you:

- touch the mother's vagina
- do a pelvic exam
- deliver the baby
- sew up a tear
- insert an IUD (see Chapter 21)
- do an MVA (see Chapter 23)



after you:

- clean up after the birth
- touch any blood or other body fluids
- urinate or pass stool

Alcohol and glycerine hand cleaner

You can make a simple hand cleaner to use if you do not have water to wash your hands. When used correctly, this cleaner will kill most of the germs on your hands.

Mix 2 milliliters of glycerine with 100 milliliters of ethyl or isopropyl alcohol 60% to 90%.

To clean your hands, rub about 5 milliliters (1 teaspoon) of the hand cleaner into your skin. Be sure to rub it between your fingers and under your nails. Keep rubbing until your hands are dry. Do not rinse your hands or wipe them with a cloth.

Clean water

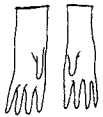
Throughout this book we talk about how important it is to wash your hands and wash your tools. But the water you use must be clean to be of any use. If the water in your community may carry germs, be sure that water is boiled before using it to wash your hands or to wash tools before a birth.



Wear gloves

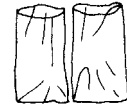
Latex and other plastic gloves protect women from any germs that may be hiding under your fingernails or on your skin. They also protect you from getting infections. Wear clean gloves whenever you touch the mother's genitals, or any blood or body fluid.

If you are doing invasive procedures, or if you are touching any tools that have been sterilized, you must wear sterile gloves.



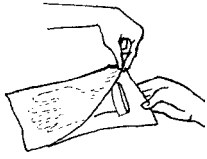
Plastic bag gloves

If you do not have gloves, use plastic bags that have been washed in disinfectant soap instead. Bags are harder to use than gloves, but they are better than nothing. In the rest of this book, we will only mention gloves. But **be sure to use plastic bags if you do not have gloves.**



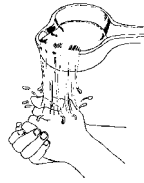
How to put on sterile gloves

1



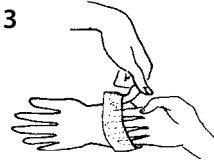
Open the package without touching the gloves. Do not touch the outside of a sterile glove with your hand or it will not be sterile anymore.

2



Carefully wash your hands. Let them dry in the air.

3



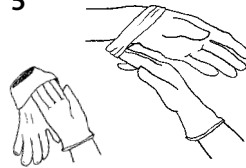
The gloves should be folded out at the cuff. Pick up one glove under the cuff on the inside of the glove and slip your hand into it. Do not touch the outside of the glove.

4



Wiggle your hand in while you pull with your finger tucked inside the glove.

5



Pick up the second glove by slipping your gloved fingers into the fold of the cuff. Slide your hand into the glove.

6



Once the gloves are on, do not touch anything that is not sterile — or the gloves will not be sterile anymore!

Practice with the same pair of gloves over and over again until it feels easy.

Remember:



If you carefully wash your hands ...



and put on sterile gloves ...



and then scratch your head ...



your glove is not sterile anymore!

Of course, when you touch a woman you will get germs on your gloves, but do not move germs from one part of her body to another. For example, if you touch a woman's anus where there are many germs, do not put your fingers inside the vagina with the same gloves. Germs from the anus can make a woman sick if they get into the vagina or womb.

After you use a pair of gloves one time, throw them away or sterilize them before you use them again (see page 66).

Protect yourself from infection

Midwives must protect themselves from germs and infection. You will not be able to help women if you are sick. And if you are infected with dangerous germs, you can easily spread them to the women you are trying to help.

Some germs that cause serious illnesses, like AIDS and hepatitis B, only live in blood, urine, stool, the bag of waters, or other body fluids. That means you do not get these illnesses just by touching someone's skin. But the germs that cause AIDS and hepatitis B can infect you if an infected person's blood gets into a cut or opening in your skin — even a cut so small that you cannot see it (see page 99 for all the ways HIV can spread). Keep blood and other body fluids off your clothing and skin, and if they do get onto you, wash them off right away with soap and water.

Wear protective clothing

You do not need expensive equipment to keep body fluids off your skin, out of cuts, and out of your mouth and eyes. You can wear an apron or an extra shirt to keep fluid off your body. Protect your eyes with eyeglasses or plastic goggles. Cover your feet so that you do not step into blood or other fluids.



If you do not have clothing made to protect a person from blood and fluids, you can make it from what you already have.

Wash all your clothing after any blood, waters, or other body fluids gets on it. If you get body fluids in your eyes or mouth, rinse them for several minutes with clean water or saline (water with a little salt added).

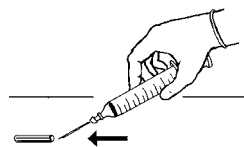
Be careful with needles

If a syringe is used to give an injection or a needle was used for sewing a vaginal tear, the needle has blood on it. If you accidentally stick yourself with that used needle, you will be exposed to germs. Carry needles carefully with the point away from your body. Do not leave needles lying around.

Use each needle only once and then throw it away in a box like the one on page 68. You may be able to get needles that can only be used once and do not need a cap. If you must reuse a needle, put the cap on very carefully and then put the needle in a bucket filled with bleach solution (see page 57) until you are ready to clean and sterilize it.

How to avoid puncturing your skin with a needle

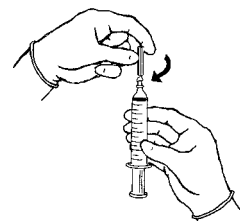
Do not use your hand to put the cap on the needle.



Instead, use the needle to pick up the cap.



Then close the cap all the way.



Note: If you do get stuck by a needle, immediately wash the area with soap and water or alcohol and dispose of the needle properly (see pages 67 and 68). Do not use it on another person.

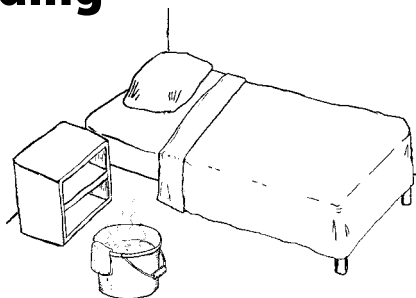
Clean the space and bedding

Clean the space

At home

One reason that birth or medical procedures can happen as safely in a woman's home as in a medical center is that there are not as many germs in a clean house as in a hospital.

But the home should still be cleaned carefully — especially the area where the baby will be born or where procedures such as a pelvic exam or IUD insertion will be done.



Sweep these areas free of dust and dirt, and wash surfaces with soap and water. Put your tools or birth kit on a clean surface.

Move animals out of the house and do not do any medical procedures in places where animals sleep or pass stool, or where people urinate or pass stool. If the floor in the house is made of animal waste (dung), do not let the woman's body or any of your tools touch the floor. Dung has many germs in it that can easily spread to pregnant women. You can cover the floor with clean straw, cloth, or plastic.

In a hospital, maternity center, or clinic

Be extra careful. Germs can easily be passed from one person to another.

After each birth, wash floors and surfaces. If possible, use a bleach (sodium hypochlorite) solution to wash the floor.

How to make a disinfecting solution of 5% bleach

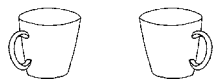
If your bleach says:

5% available chlorine



use undiluted,
straight bleach

10% available chlorine



use 1 part
bleach and 1 part
water

15% available chlorine



use 1 part
bleach and 2 parts
water

Mix just enough solution for 1 day. **Do not use it again the next day.** It will not be strong enough to kill germs anymore.



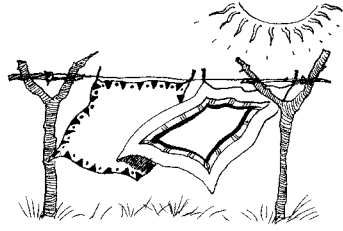
If you do not have bleach, you can wash the floor with:

- ethanol (medical alcohol) 70%
- isopropyl alcohol 70%
- hydrogen peroxide 6%
- soapy water
- ammonia (Never mix bleach with ammonia — when mixed they make a poison.)

Clean and disinfect the bedding

At home

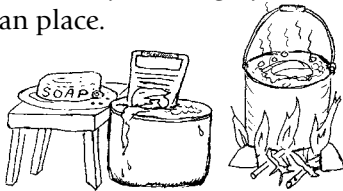
Wash cloth for covering the bed (bedding) in soap and water, and dry it thoroughly by hanging it in the sun or ironing it. Do not dry bedding on the ground; it will pick up germs.



In a hospital, maternity center, or clinic

Bedding must be cleaned and disinfected after each birth. Use one of these methods to kill germs:

- Wash the bedding with soap and water. Then boil for 30 minutes. Dry thoroughly in a clean place.
- or
- Wash bedding with soap and water. Then use a hot iron to dry it.



If neither of these methods is possible, wash the bedding in soap and water and hang it in the sun until it is fully dried. Turn the bedding so the sun shines on both sides, and take care to keep it clean.

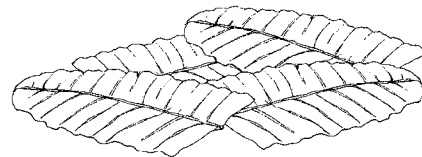
Store bedding to keep germs away

If you are not going to use the bedding right away, keep it clean and dry until you are ready to use it. Put it in a clean bag or wrap it in clean paper and store it in a clean, dry place.

Note: Do not store bedding that is damp or wet. Germs will come back!

Other kinds of underpadding

Sometimes there is no bed or bedding. The birth or procedure happens on the floor. In these cases, it is useful to have some kind of underpadding. This protects the baby and the mother from the germs and dirt that are on the floor. Find a way to clean the underpadding before it is used. For example, banana leaves can be washed with a disinfectant solution, and then smoked or dried in the sun. Cloth rags or sacks can be boiled and then dried.



Clean and disinfect or sterilize tools

All the tools used at a birth, exam, or procedure must be cleaned and then disinfected or sterilized. This gets rid of germs and protects against infection.

1. Take apart your tools

Tools that have been used should be taken apart, if possible, so that all surfaces can be cleaned and then disinfected or sterilized.

2. Clean your tools

Cleaning removes visible dirt and substances from your tools. This is an important step before you remove germs. Use clean water, cleaners appropriate for your tools (like detergents) and a brush to remove any blood or dirt in the hinges or rough edges of your tools. Clean off any rust and get rid of tools that are dull or damaged. To protect yourself, wear heavy gloves when you clean your tools.

After your tools are clean, they must also be disinfected or sterilized to kill germs.



Carefully wash all the dirt off your tools.

3. Remove germs from your tools

Once the tools are clean, it is important to remove germs from them. This will protect against them spreading infection. Germs are removed from your tools by disinfecting or sterilizing. Which you do depends on the tool and how it is used.

Disinfecting kills most of the germs that cause infections. Disinfect tools that touch mucous membranes (such as inside the mouth and inside the vagina) or broken skin, and that are not resistant to heat.

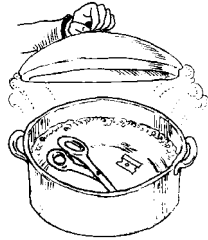
Disinfect these items:

- bulb syringes and mucus traps
- MVA cannula (see page 424)
- speculums

Sterilizing kills all the germs that cause infections. Sterilize tools that are used to cut into the body, or that come in contact with wounds. For example, any tools that will be used to cut the cord at birth must be sterilized.

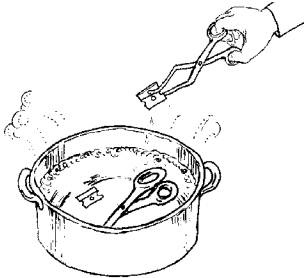
Sterilize these items:

- syringes and needles
- scissors or razor blades for cutting the cord
- materials for sewing tears



- clamps and hemostats
- gauze
- compress cloths

Note: You do not need to sterilize tools that are used only on the outside of the body on unbroken skin. Stethoscopes, measuring tape, and blood pressure cuffs must be clean but do not need to be sterile.



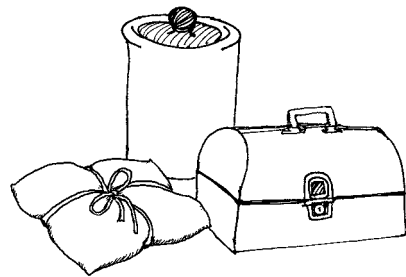
Using tools that have been disinfected (but not sterilized) to cut into the body puts the person at risk of infection, and should be done only when their life is in danger. The next few pages explain different ways to sterilize or disinfect your tools.

Storing tools and supplies

At some births there will be plenty of time to disinfect or sterilize your tools and equipment at the mother's house. But at other births, you may not have time. For this reason, try to prepare your tools and equipment at home and keep them in a sealed container in your kit.

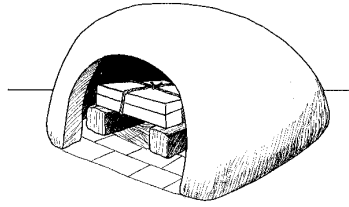
For tools you sterilize by baking or pressure steaming, keep them sealed in the packet or container you sterilize them in until you are ready to use them (see page 61). For tools you disinfect, use any of the methods to disinfect or sterilize a storage container. A metal box or pot with a tight-fitting lid is best for storage. Do not touch the inside of the container. Keep the container closed until you are ready to use the tools inside.

Remember that germs grow in moisture, and they will come back if the instruments are put away while they are wet. But if you are going to use the tools right away, it is OK to use them when they are wet. Germs need time to grow.



How to sterilize by baking

Baking uses dry heat to sterilize tools. This can be used for metal tools and string for tying the cord. Do not bake tools made of rubber or plastic – they will melt!



Take your tools apart and clean them (see page 59). Then wrap them in 4 layers of clean cloth or heavy paper and tie it shut.

Put the packet of tools into a container or on a pan.

Bake at 170°C (340°F) for 1 hour or 150°C (305°F) for 2 ½ hours.

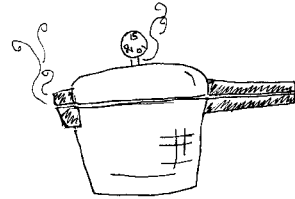
Then let the packet cool and store it in a clean, dry place. Do not remove tools from the packet until you are ready to use them, and then touch them only when wearing sterile gloves. Once a tool is exposed to the air or touches anything (like a table or your skin), it is no longer sterile and the germs on it can cause an infection when it is used.



How to sterilize by pressure steaming

Pressure steaming uses heat and steam under pressure to sterilize tools. This can be used for metal or rubber tools and some plastic equipment.

Some clinics and hospitals have a machine for sterilizing called an autoclave. Autoclaves sterilize instruments using pressure and steam. If you have a pressure-cooking pot, you can sterilize your tools in the same way that an autoclave does.



Take your tools apart and clean them (see page 59). Then wrap them in 2 layers of non-woven paper or crepe paper and close with autoclave tape (see page 506). If you do not have paper and tape, place your tools in a heat-safe container with a lid.

Put a steamer basket and water in the pressure-cooking pot. Put your packets or container into the steamer basket, checking that they are above the water surface. Close the lid of the pot, making sure the gasket seals, and put the pot on a flame to boil.

After it comes to a boil, cook at 15 to 20 pounds of pressure at 121°C for 20 minutes.

Then let packets cool and dry. Store in a clean, dry place.

Do not remove tools from the packet or container until you are ready to use them, and then touch them only when wearing sterile gloves. If you sterilized tools in a heat-safe container, seal the lid closed with tape and do not open the container until you are ready to use the tools inside. Once a tool is exposed to the air or touches anything (like a table or your skin), it is no longer sterile and the germs on it can cause an infection when it is used.

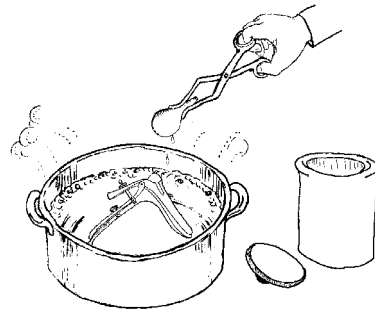
How to disinfect by boiling

Use boiling to disinfect metal tools, rubber or plastic equipment (like mucus bulbs), and cloth.

Take your tools apart and clean them (see page 59). Then place in a pot, cover with water, and boil for 20 minutes.

Start counting the 20 minutes when the water starts to boil.

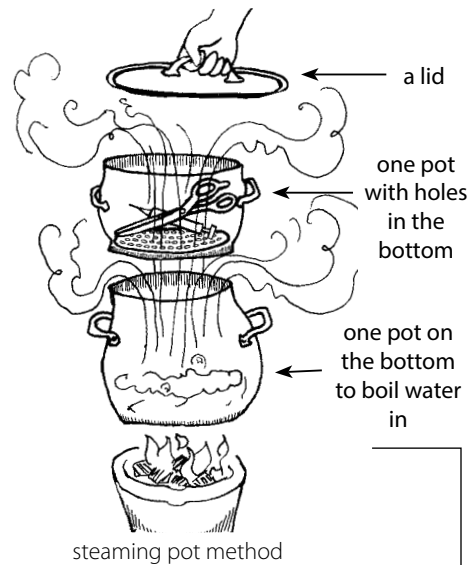
Then let the tools cool and dry. Use disinfected tongs, chopsticks, or spoons to remove the tools from the pot. Move them directly to a disinfected container with a lid. Remember, anything you touch with your hands is no longer disinfected.



How to disinfect by steaming

Use steaming (without pressure) to disinfect metal tools, gloves, plastic equipment, and other tools. Steaming uses less water than boiling, and tools that are steamed do not get dull or break as quickly as tools that are boiled.

A steaming pot has 3 parts that fit together tightly: one pot on the bottom to boil water in, one pot in the middle that has holes in its bottom, and a lid.



Take your tools apart and clean them (see page 59). Boil a little water in the bottom pot. Put the clean tools into the steamer pot with the holes. Cover with the lid.

Steam over boiling water for at least 20 minutes.

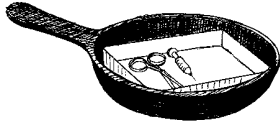
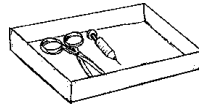
Start counting the 20 minutes when the water starts to boil.

Wait for the tools to cool and dry, and then use disinfected tongs to move the tools from the steamer into a disinfected container, and seal the container.

A method from the Philippines

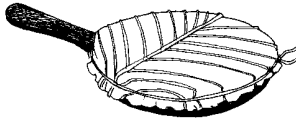
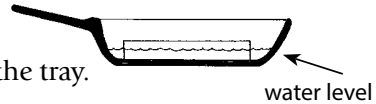
The Medical Mission Sisters in the Philippines have developed a method to disinfect tools with steam:

1. Take your tools apart and clean them (see page 59). Then put them into a metal tray.

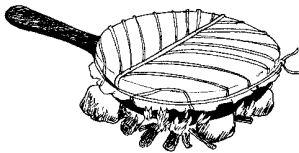


2. Place the tray in a cooking pan.

3. Fill the pan with water until it reaches halfway up the tray.

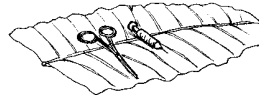


4. Cover the pan with 8 layers of clean green banana leaves. Bind the leaves tightly in place with strips of banana leaf or bark. Be careful not to spill water into the tray when you do this.



5. Put the pan on a low fire and boil for about 1 hour.

6. Throw away the top layer of the leaves. You can use one of the inner layers to put your instruments on.

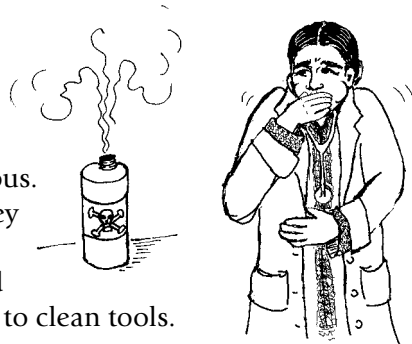


If possible, avoid using chemicals

Some people use chemicals to disinfect metal, rubber, or plastic tools and equipment. We do not recommend this.

Most chemicals used to disinfect are poisonous. They poison the ground and the water when they are thrown away. They are poisonous to the people who work in factories making them, and they are poisonous to the people who use them to clean tools.

But some tools can only be disinfected with chemicals. Thermometers and some kinds of gloves cannot be baked, boiled, or steamed.



If you do need to use chemicals:

- mix up the bleach solution on page 57.
- or** If you do not have bleach, use one of the following chemicals:
- ethanol (medical alcohol) 70%
 - isopropyl alcohol 70%
 - hydrogen peroxide 6%
- or** If you cannot get any of these chemicals, you can use:
- strong drinking alcohol like gin, or a strong local brew.

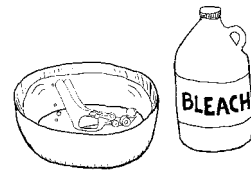
Take your tools apart and clean them (see page 59). Be sure that all of your tools are very clean before disinfecting them with chemicals. Even a little blood or body fluid left on the tool can stop the chemicals from working. Do not put tools that have been disinfected with chemicals inside the womb.

Soak in bleach solution (see page 57) for 20 minutes.

or Soak in 6% hydrogen peroxide for 30 minutes.

or Soak in alcohol for a whole day.

After soaking, pour the chemicals off and let the tools dry. Move them directly to a disinfected container with a lid using disinfected tongs. Remember, anything you touch with your hands is no longer disinfected.



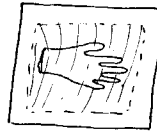
WARNING! Glutaraldehydes and formaldehyde are chemicals that we think are too dangerous to ever use. Many clinics and hospitals use these to disinfect, but they are very toxic. Formaldehyde, for example, causes cancer. Try to find a different way to disinfect.

If you use chemicals, keep them off your skin and wear gloves when you use them. Get rid of chemicals carefully. You may have to dump bleach or other chemicals into a latrine to be sure animals and children do not drink it. For more information on safe disposal of chemical waste, see Chapter 19 of *A Community Guide to Environmental Health*.

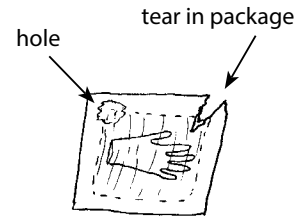
Some equipment needs special care

Sterile packets

Sterile gauze, compresses, gloves, and other equipment sometimes come in sterile packets. You can use this equipment directly out of the packet. But remember: once you take something out of its sterile packet and use it, or if the packet gets wet or gets holes in it, the things inside are not sterile anymore.



This glove is sterile.



This glove is not sterile anymore.

Things in sterile packets are often meant to be used only once and then thrown away (disposable). But some of these things can be reused if they are carefully cleaned and sterilized before each use. Gauze and compresses can be washed and then baked.

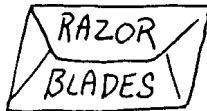
Thermometers

Wash a thermometer in soap and rinse with cool, clean water before and after you use it. Do not use very hot water with a glass thermometer because it may break.



After washing, it is best to soak the thermometer in alcohol for 20 minutes. You can use isopropyl or medical alcohol (ethanol). Do not reuse the alcohol. Rinse the thermometer in clean water before you use it again.

Razor blades



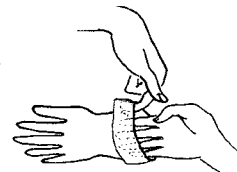
Razor blades for cutting cords often come inside small sterile packets. To keep a packet sterile, wrap it in clean paper or cloth, or keep it in a clean dry box. If the packet gets wet or dirty, it is not safe to use the razor blade unless you sterilize it again (see page 61). Try not to reuse razor blades — but if you do, sterilize them first.

Gloves

Most plastic gloves can be boiled or steamed, but some will fall apart. Try to get strong gloves that can be boiled and reused a few times.

Before boiling or steaming gloves, turn the cuff inside out. After disinfecting a glove, touch it only on the inside. If you touch the outside, it will not be disinfected anymore.

If your gloves cannot be boiled, wash them carefully and soak them in bleach or medical alcohol. Then rinse them in clean water before using them.



Touch the glove only on the inside.

Mucus bulb (bulb syringe)

To wash out a mucus bulb, fill it with soapy water and squeeze the water in and out several times. Then rinse it well with clean water. If you disinfect it by boiling, let water inside the bulb before boiling. Squeeze the water out afterward while wearing a disinfected glove.



Reusable syringes and disposable syringes

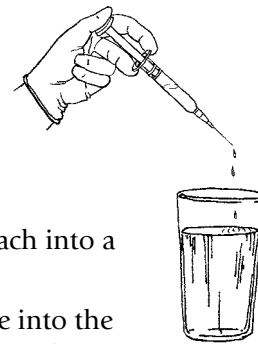
Reusable syringes can be used again and again because they can be taken apart for cleaning and are strong enough to be sterilized. Reusable syringes make less waste and can save money, but they must be cleaned and sterilized after every use.

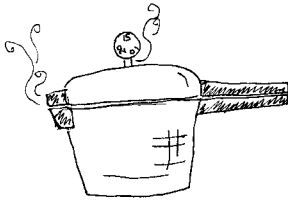
Disposable syringes are made to be thrown out after one use. They cannot be sterilized again. Disposable syringes can be disinfected and reused, but we do not recommend doing this because a syringe that has only been disinfected can still spread infections, including hepatitis and HIV. This should be done only when someone's life is in danger.

How to wash and disinfect a disposable syringe and needle

To most safely reuse a disposable syringe, wash and disinfect it right after using it, and again right before you reuse it. **This makes it less likely to spread infection, but does not prevent it completely.**

1. Wear gloves to protect your hands from cuts and germs.
2. Pour clean water into 2 cups, and full-strength bleach into a third cup.
3. Draw clean water from one cup through the needle into the syringe. Shake or tap the syringe at least 30 seconds to loosen anything stuck inside (take care not to stick yourself with the needle). Squirt the water into a sink or bowl, not back into the water cup.
4. Repeat step 3 until water in the syringe is clear (no blood).
5. Draw full-strength bleach from its cup through the needle into the syringe. Shake or tap the syringe at least 30 seconds to loosen anything stuck inside. Squirt out the bleach into a bowl or sink.
6. Repeat step 3, but with water from the second clean water cup.

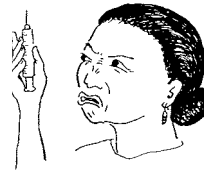


Remember:

If you sterilize a reusable syringe ...



and then put it in your pocket ...

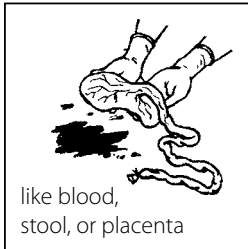


it is not sterile anymore. Instead, it is dangerous!

Get rid of wastes safely

There are three different kinds of waste after a birth or procedure:

body wastes



like blood, stool, or placenta

sharp wastes



like needles for sewing or syringes

other wastes



like used plastic gloves

These wastes carry germs and can spread infections to you and to people in the family and community. Wear gloves when you touch wastes, and get rid of them carefully.

Body wastes

The simplest way to dispose of body wastes is to put them in a latrine or to bury them deep in the ground.

In many communities, families bury the placenta, sometimes with other special objects. Burying the placenta is an important ritual for many people and is also a way to protect the community from germs that may grow in the placenta.

Sharp wastes

Sharp wastes must be put into a container so they will not injure anyone who finds them. A container made of metal or heavy plastic, with a lid or tape to close it, works well.

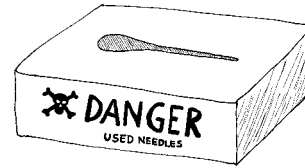
When the container is half full, add bleach if possible, then seal it closed, and bury it deep in the ground (see page 68).



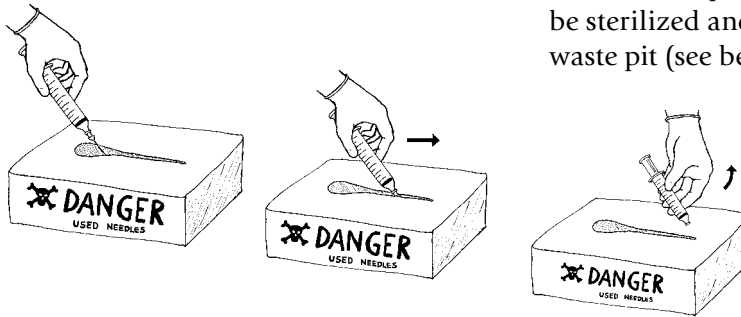
Make a box to dispose of needles safely

Find a metal or hard plastic box. Make a long hole in the lid of the box that is wide on one side and gets narrower on the other side.

When you have finished using a disposable syringe, put the needle into the box and slide it down to the narrowest point.



Then pull up on the syringe and the needle will fall off into the box. The plastic syringe can be sterilized and thrown into a waste pit (see below).



When the box is half full, pour 5% bleach solution into the box, seal it closed, and then bury it deep in the ground.

Other wastes

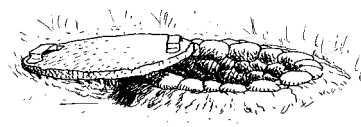
Other wastes, like plastic gloves, syringe barrels, or cloth soaked in blood, should be sterilized and then buried deep in the ground. You can sterilize them by soaking them in bleach for 20 minutes.



WARNING! Do not burn plastic gloves, syringes, or any other plastics. Burning plastic wastes is dangerous — when plastic burns, it makes smoke and ash that is very poisonous.

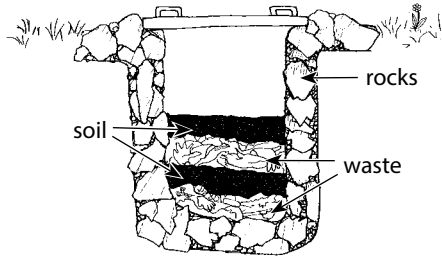
Burying wastes

Find a place away from where people get their drinking water and away from where children play. Dig a safe waste pit to bury wastes.



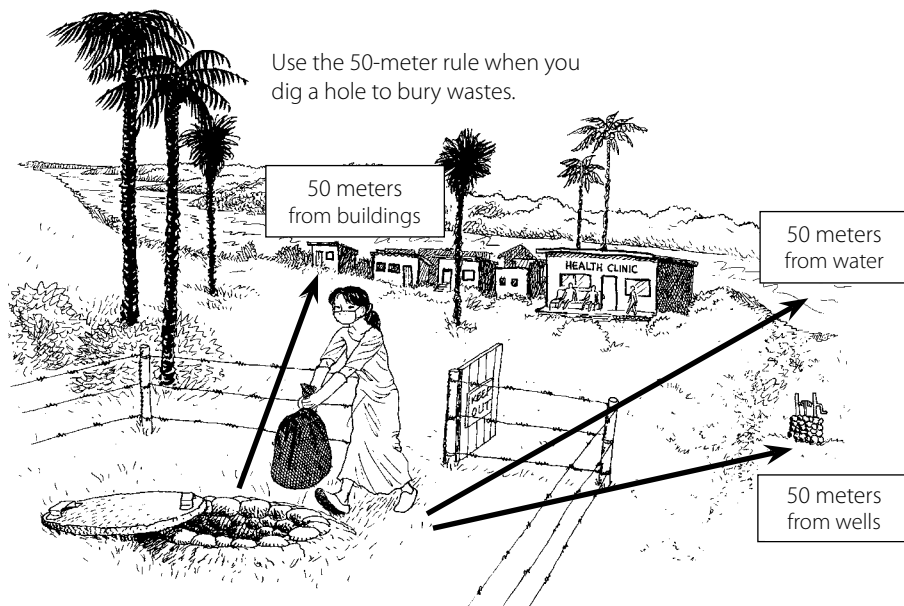
A safe waste pit

1. Dig a pit 1 to 2 meters wide and 2 to 5 meters deep. The bottom of the pit should be at least 1 meter above the water table.
2. Line the inside of the pit with a layer of clay or rocks at least 10 centimeters thick.
3. Build up a ridge of earth around the top of the pit to prevent surface water from running in.
4. Build a fence around the area where the pit is located to keep animals out.



Each time waste is put in the pit, cover the waste with 10 centimeters of soil, or a mix of soil and lime. Lime helps disinfect the waste, and will also keep animals away while the pit is in use.

When the waste rises to $\frac{1}{2}$ meter from the surface, cover it with $\frac{1}{2}$ meter of soil and seal it with a layer of concrete at least 90 centimeters thick. If the pit is used only for medical waste and not for regular garbage, it will not fill up too quickly.



Garbage dumps

When wastes are sent to a garbage dump, they can spread infections there. In many places, people pick through garbage to find things to sell, like used syringes. This is dangerous for the people picking through the garbage, and for the people who buy the syringes to use them again.

When a syringe is not usable anymore, dispose of it safely. If you must send needles to the garbage dump, sterilize them first, and seal them in a box or tin.