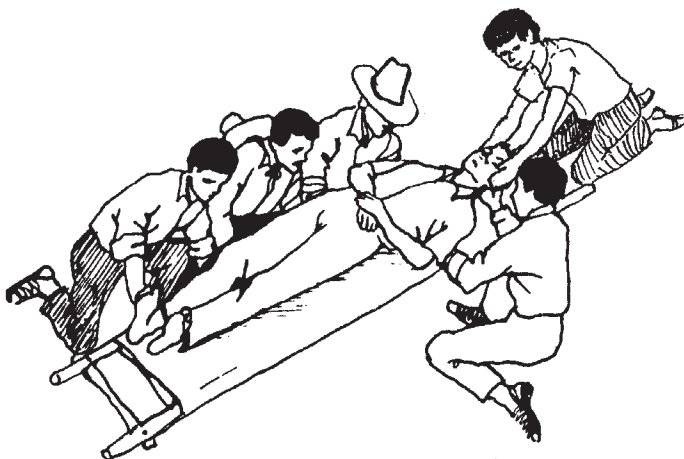


Appendix A: Safety and Emergencies



When working with or being exposed to dangerous substances in the workplace, the community, or the home, it is important to be as safe as possible and to be prepared for accidents. This section has information on the following topics:

- make a safety plan for emergencies
- a first aid kit
- protective clothing and equipment
- protective masks
- chemical spills
- treating harm caused by chemicals
- treating burns
- shock
- rescue breathing (mouth-to-mouth breathing)

The material provided here will help you prepare for emergencies, but it is not a complete first aid manual. To be better prepared, seek training in first aid and in treating chemical accidents, get a first aid manual and understand its contents, and ask your community health workers to assist in developing a safety plan.

Make a Safety Plan for Emergencies

Just as important as having protective equipment and a first aid kit is knowing what to do in case of an emergency or an accident. Every community and every workplace should make a safety plan in case of a toxic release, fire, flood, storm, or other emergency.

Post the address and phone number of the nearest medical clinic or hospital in central locations. Make sure everyone knows where first aid kits and other emergency supplies are located, and how to use them. A safety plan can also include:

- a plan for transporting injured and ill people to a clinic or hospital, and a vehicle that can be used in an emergency.
- a central meeting place such as a community center, school, or church.
- an emergency supply of clean drinking water.
- a telephone or radio to call for help and to alert officials and media.
- a list of elderly people, people with disabilities, or others in the community who may need help in case of an evacuation.



Different kinds of emergencies require different responses. Understanding the most likely threats to your community and learning to be prepared for them is an important part of any safety plan.

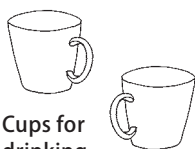
A First Aid Kit

Every workplace, health post, and community center should have a first aid kit to provide treatment in emergencies. Make a first aid kit in a container with a tightly fitting cover so water, dust, or chemicals cannot leak into the kit. Make sure everyone in the community or workplace, including new workers, knows where the kit is kept and how to use it.

What to put in a first aid kit



Two quarts or liters of drinking water

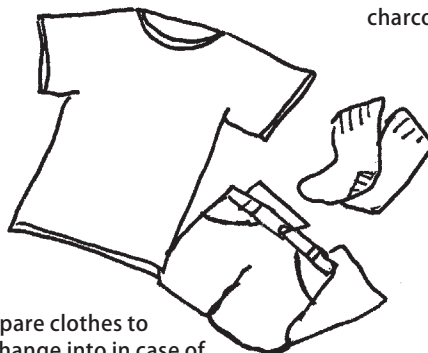


Cups for drinking



A blanket to cover an injured or sick person

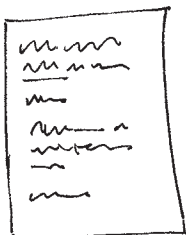
One bottle of activated charcoal or powdered charcoal (see page 258)



Spare clothes to change into in case of contamination or exposure

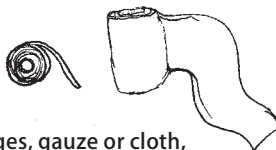
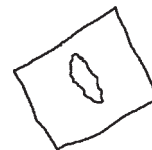


Salt (to mix with water to cause vomiting if someone swallows a poison, see page 257)



List of chemicals used in the area or workplace and their health effects. For pesticides, list what crops they are used on

A pocket mask, piece of cloth, or thick plastic wrap with a hole cut in the middle to use when you do mouth-to-mouth breathing

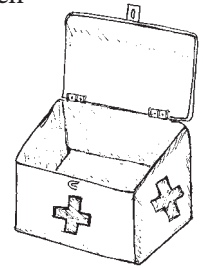


Clean bandages, gauze or cloth, and tape to cover cuts and scrapes

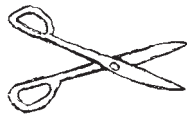


Medicines that are listed as antidotes for poisoning on the labels of pesticides or other chemicals you may use

Different communities and workplaces will require different kinds of first aid supplies. Consider the kinds of emergencies that may happen in your area and plan your first aid kit with this in mind. If you work with pesticides or other chemicals, read the labels on their containers to find out which medicines are recommended for poisonings.



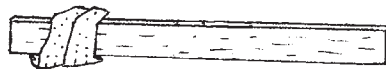
Scissors or a knife for cutting bandages, tape, and plastic wrap



Tweezers to remove splinters and fragments



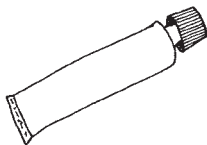
A First Aid manual



Splints or sticks to keep broken bones in a fixed position



One bar of soap



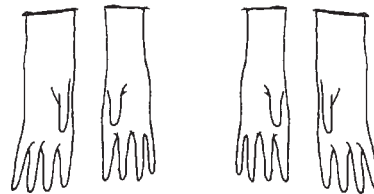
Antiseptic cream to disinfect wounds



Antibiotic eye ointment



Clean cloths for washing skin and soaking up spilled chemicals



Two pairs of rubber or plastic gloves



Coins or a phone card taped to the lid of the kit to make an emergency phone call at a public phone



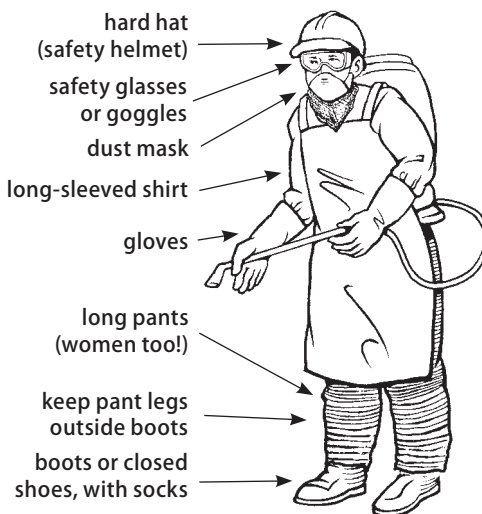
A body board, stretcher, or blanket to carry an injured or sick person

Protective Clothing and Equipment

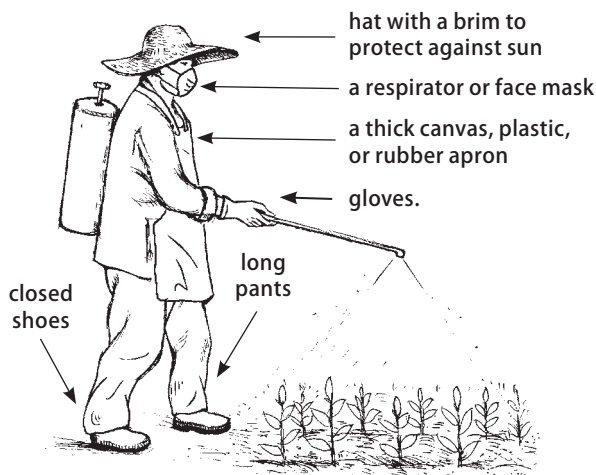
Every person should wear protective clothing, also called personal protective equipment, when working with or being exposed to harmful materials. It is the responsibility of employers to provide protective equipment for workers. Workers should demand that employers respect their rights to health and safety by providing protective equipment and maintaining it in good condition.

In order to protect people, protective clothing must fit and must be well-maintained. It is said that in poor countries there are 3 kinds of protective equipment: too big, too small, and torn. If you do not have protective clothing and equipment, you can protect yourself by wearing a rain suit, or by making protective clothing out of plastic bags. Cut holes for your head and arms and put other bags on your arms and legs, and hands and feet.

This picture shows all of the kinds of protection equipment needed to protect against most harmful materials. Not all jobs or materials demand all of this equipment, and some kinds of work require specialized clothes and equipment.

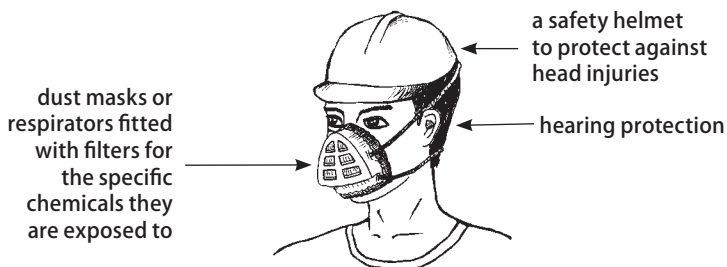


Farmworkers exposed to pesticides should wear:

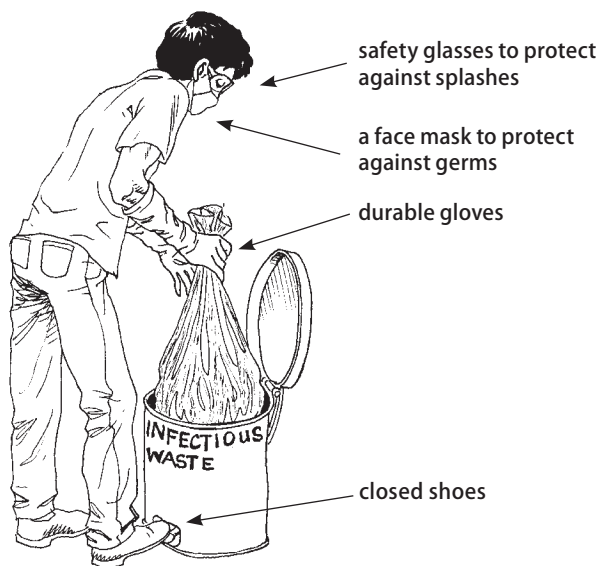


If no respirator or face mask is available, people often use a bandana or scarf. But pesticides will stick to a wet or sweaty scarf or bandana. This makes it more dangerous to use these than to have no mouth protection at all. If you do use a scarf or bandana, rinse and dry it often, and know that it does not offer much protection.

Oil and mine workers are better protected when they wear:



People collecting waste, and health workers at hospitals, health clinics, and other health care settings should wear:



Protective clothing and equipment works only if it is clean. After each use, or at the end of each shift, wash gloves, masks, glasses, and other clothing and equipment to prevent the next person who uses them from being contaminated.

Protective masks

The best ways to prevent harm from breathing in toxic chemicals and dust are to have good ventilation when working with them, and to wear a protective mask made to protect against the chemicals you are working with. If you feel ill from a chemical while wearing a mask, it is a sign the mask is not working properly, or that you are being exposed to that or some other toxic chemical in some other way.

Loose cloth or paper mask

This mask will help keep out some dust. It will **not** stop you from breathing in chemical fumes. Fumes pass through paper and cloth and leak in around the edges of a loose-fitting mask.

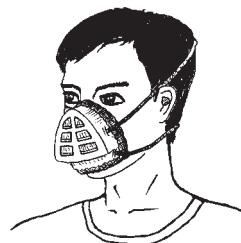


Tight-fitting paper mask

This mask will protect from dust. The mask should touch your face all the way around. It will **not** stop you from breathing in chemical fumes. These masks clog up or wear out quickly and must be replaced when they no longer touch the face all around.

Plastic dust mask

This mask will protect from dust better than a loose cloth or tight paper mask. The mask should touch your face all the way around. It will **not** stop you from breathing in chemical fumes.



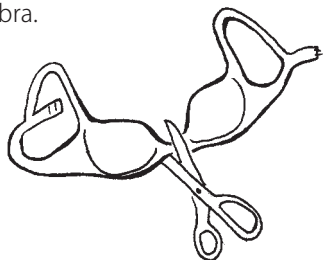
Rubber respirator

This rubber mask with filters **MAY** keep you from breathing in chemical fumes. It must fit your face tightly so no air leaks in between your skin and the mask. You will probably need a different filter for each chemical and must change the filter often. You will need special training to fit, use, and clean this mask. This mask is hot and uncomfortable to wear. When working with chemicals, take breaks often in an open, well-ventilated area where you can safely remove the mask.

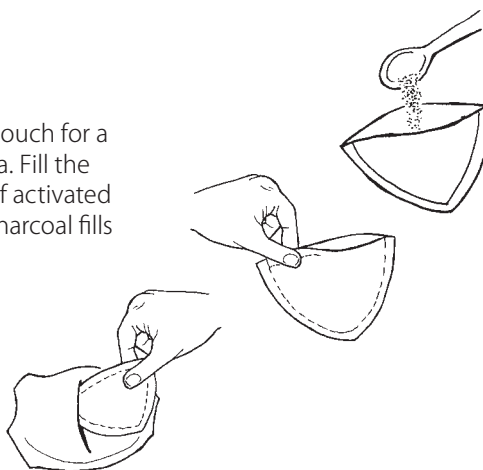
How to make a cloth and activated charcoal mask

This homemade mask was designed by Dr. Maramba of the Philippines. It will give some protection from chemicals and dust.

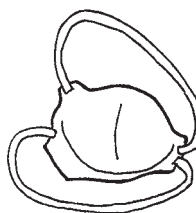
- 1 Cut one cup from a padded cloth bra.
- 2 Remove padding from the bra cup.



- 3 Cut some filter paper to make a pouch for a new pad that will fit inside the bra. Fill the filter paper pad with 100 grams of activated charcoal, making sure a layer of charcoal fills the entire filter evenly rather than settling to the bottom. Seal the paper so it will not spill, and place it inside the bra where the bra pad was.



- 4 Fit the bra cup with elastic straps to hold it tightly to your face.



The filter should be aired out between uses. If used while spraying the most toxic chemicals, this mask is good only for 2 uses of 4 hours each. The charcoal must be replaced within 1 week, depending on the type of chemical exposure and how long it is worn.

Chemical Spills

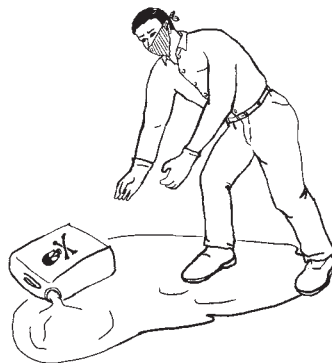
Before you clean up a chemical spill, protect yourself, people nearby, and water sources. If there are people who are more prepared than you to clean up a spill (people who have been trained to do this work), call them for help. **Always wear protective clothing to clean up chemicals!**

Small chemical spills

If a small amount of chemicals is spilled, it is important to control, contain, and clean the spill before anyone is hurt, and before the chemicals get into waterways or soak into the ground.

Control the spill

The most important thing is to keep the spill from getting bigger. Shut down any leaking equipment, turn a fallen container right side up, or put the leaking container inside an unbroken container.



Contain the spill

Absorb the chemicals by putting soil, sand, sawdust, clay or other material on the spill. If the material may blow around, cover it with a cloth or plastic sheet.



Clean up the spill

Scoop materials into barrels or thick plastic containers. Do not use water because it will spread the chemicals and make the problem worse. Dispose of the material safely (see pages 410 to 411).



Large chemical spills

In oil drilling areas, work sites, and industrial areas where large amounts of chemicals are used or transported, it is important to be prepared for a large chemical spill.

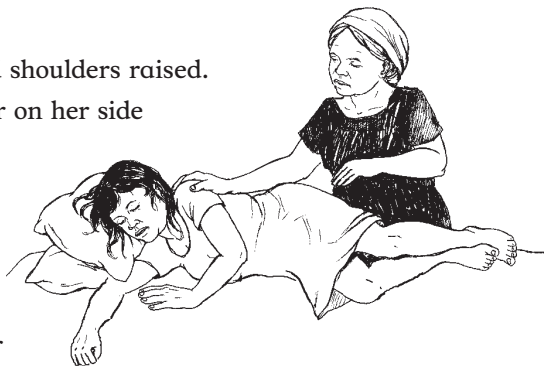
- Make an emergency plan with workers, employers, and people living nearby. Hold regular meetings to make sure everyone is familiar with the plan.
- Post names and telephone numbers of people to contact in case of a spill. Include employers, clinics and hospitals, safety officials, government authorities, health workers and people trained to clean spills.
- Keep instructions, materials, and protective equipment for cleaning spills at the site.
- Plan and mark an escape route from the area.
- Have a supply of safe water to use in case oil or other chemicals contaminate the community water supply.

Treating Harm Caused by Chemicals

Chemicals can spill on the skin and clothes, splash in the eyes, or be swallowed or breathed in as fumes. If someone is hurt, get medical help as soon as possible.

Breathing in chemicals

- Get the person away from the area where she breathed in the poison, especially if it is an enclosed area. If the spill happened indoors, open windows and doors.
- Get the person into fresh air.
- Loosen the person's clothing.
- Sit or lay the person with head and shoulders raised.
- If the person is unconscious, lay her on her side and make sure there is nothing blocking her breathing.
- If the person is not breathing, do mouth-to-mouth breathing (see page 557).
- If there are signs of a health problem such as headaches, nose or throat irritation, dizziness, drowsiness or tightness of the chest, seek medical help immediately. Take the chemical label or name with you.

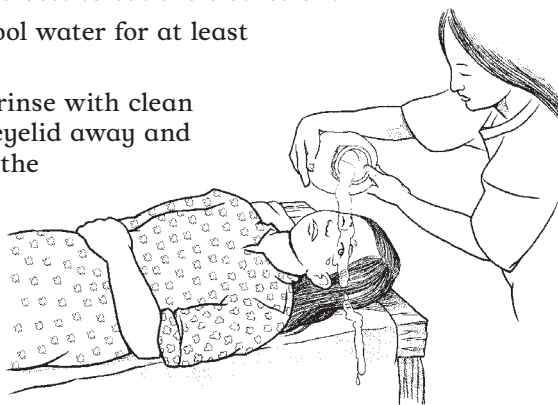


Swallowing chemicals:

- If the person is unconscious, lay her on her side and make sure she is breathing.
- If the person is not breathing, quickly do mouth-to-mouth breathing (see page 557). Mouth-to-mouth breathing can also expose you to the chemical, so cover your mouth with a pocket mask, or a piece of cloth or thick plastic wrap with a hole cut in the middle, before you start mouth-to-mouth breathing.
- If the person can drink, give her lots of clean water.
- Find the chemical package and read the label right away. The label will tell you if you should make the person vomit up the poison or not (see page 257).

When chemicals spill on the body or clothing

- If it is safe, first move the injured person away from the chemical spill.
- Remove any clothing, shoes, or jewelry the chemical spilled on. Be careful when removing pullover shirts or sweaters to prevent getting chemicals in the eyes. It may be best to cut the clothes off.
- Wash the affected area with cool water for at least 15 minutes.
- If chemicals got into the eyes, rinse with clean water for 15 minutes. Pull the eyelid away and move the eyeball in a circle so the entire eye is washed.
- If the person stops breathing, use mouth-to-mouth breathing.
- Use a rag to soak up chemicals, being careful not to spread the chemicals around.
- If the body is burned by chemicals, treat them like ordinary burns (see page 555).



Treating Burns

For any burn:

- Stop the burning by putting the burned part in cool water at once. Continue to cool the burn for at least 20 minutes.
- Relieve pain with aspirin or other pain medicine.
- Prevent shock (see page 556).



For minor burns, no other treatment is needed.

For chemical burns, radiation burns, electrical burns, and burns that cause blisters (2nd degree burns):

- **DO NOT** remove anything stuck to the burn.
- **DO NOT** apply lotions, fats, or butter.
- **DO NOT** break blisters.
- **DO NOT** remove loose skin.
- **DO NOT** put anything on a chemical burn.
- **DO** immediately wash away any chemicals from the burn with clean water.
- **DO** cover the burned area with wet **sterile dressings** (such as a clean gauze bandage) if possible.
- **DO** wash gently with cool, clean water and a mild soap if blisters are broken. Only leave the burn uncovered if you are in a very clean area, where there are no insects, dust, or chemical fumes.
- **DO** get rid of clothing that may be contaminated by chemicals, or wash the clothing separately from other clothes.
- **DO** use honey to cover a minor burn. Honey can prevent and control infection and speed healing. Gently wash off the old honey and put on new honey at least twice a day.

Then take the person to a health worker or hospital as soon as possible.

Take the person to a hospital if you think they have burned their airway.

Signs include:

- burns around the mouth or nose, or burns inside the mouth.
- mental confusion, unconsciousness, or coughing a lot from inhaling smoke.

Also, take a person to the hospital who has serious burns on the face, eyes, hands, feet, or genitals.

Any person who is been badly burned can easily go into shock (see the next page) because of combined pain, fear, and the loss of body fluids from the oozing burn. Comfort and reassure the person, ease pain, treat shock, and give plenty of liquids.

Shock

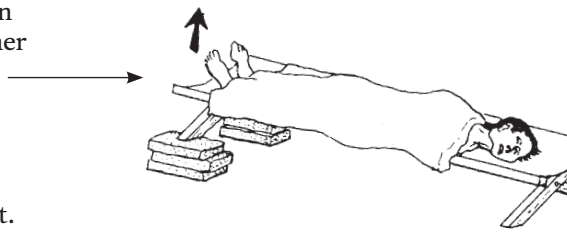
Shock is a life-threatening condition that can result from a large burn, losing a lot of blood, severe illness, dehydration, severe allergic reaction, acute toxic exposure, or other emergency situation.

Signs of shock

- Mental confusion, weakness, dizziness, or loss of consciousness
- Weak, rapid pulse
- Cold sweat: pale, cold, damp skin
- Blood pressure drops dangerously low

To prevent or treat shock

At first sign of shock, or if there is risk of shock:

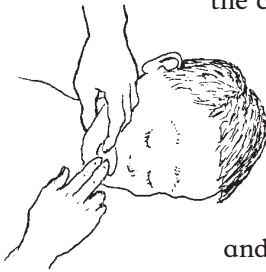
- Have the person lie down with his feet a little higher than his head, like this: 
- Stop any bleeding and treat any wounds.
- If the person feels cold, cover him with a blanket.
- If the person is able to drink, give sips of water. If he is dehydrated, give a lot of liquid, and rehydration drink (see page 53).
- If the person is in pain, give aspirin or other pain medicine, but not one with a sedative, such as codeine.
- Stay calm and reassure the person.

If the person is unconscious:

- Lay him on his side with his head low, tilted back and to the side (see above). If he has a neck or spine injury, do not tilt his head or move his back.
- If he has vomited, clear his mouth right away.
- Do not give anything by mouth until he becomes conscious.
- **Seek medical help.**

Rescue Breathing (Mouth-to-Mouth Breathing)

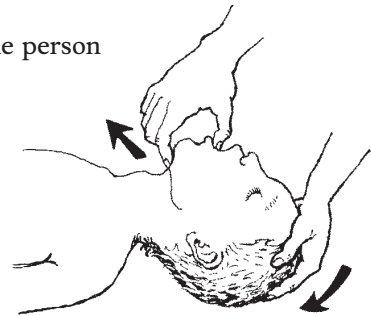
A person can die within 4 minutes if she does not breathe. If a person stops breathing for any reason, begin mouth-to-mouth breathing right away! If the person swallowed chemicals, mouth-to-mouth breathing can also expose you to the chemical, so before you start mouth-to-mouth breathing, cover your mouth with a pocket mask, or a piece of cloth or thick plastic wrap with a hole cut in the middle.



Step 1: Quickly use a finger to remove anything stuck in the mouth or throat.

Step 2: Quickly but gently lay the person face up. Gently tilt his head back and pull his jaw forward.

Step 3: Pinch his nostrils closed with your fingers, open his mouth, cover his mouth with yours, and blow strongly into his lungs so that his chest rises. Pause to let air come back out and blow again. Repeat about every 5 seconds. With babies and small children, cover both the nose and mouth with your mouth, and breathe very gently about once every 3 seconds.



Continue rescue breathing until the person can breathe by himself, or until there is no doubt he is dead. Sometimes you must keep trying for an hour or more.

Note: Unless there is an open sore or bleeding in the mouth, it is not possible to give or get HIV or hepatitis from mouth-to-mouth breathing.