

CHILD HEALTH

DIALOGUE

Issue 16 April-June 1999

Published by **healthlink**
WORLDWIDE

Dealing with accidents and injuries



Mark Edwards/Still Pictures

Most injuries to young children occur in or near the home. Make sure play areas are safe.

CHD readers will be familiar with the five main causes of childhood illness and death – acute respiratory infections, diarrhoea, malaria, measles and malnutrition. However, every year hundreds of thousands of children die, or are permanently disabled, as a result of accidental injuries. In many developing countries, injuries are now one of the major causes of death in children between the ages of one and fifteen. Yet most accidents can be prevented.

Although some actions need to be taken at government level such as public safety policies which enforce speed limits and the use of seat belts, there are many things that health workers, parents, children and other community members can do to protect children from injury. This issue of *CHD* looks at simple ways to prevent and

deal with accidents and injuries at the community level.

Children are at risk in and around the home, and on the roads. Most road accidents and falls involving young children, occur inside or around the home compound. An article on prevention describes the common causes of accidents and types of injuries which can occur, depending on a child's age and stage of development. Once aware of the potential risks, families can take steps to make sure their children's surroundings are safe.

Despite awareness and good prevention activities, accidents and injuries will still occur, often at the most unexpected times and in the most unexpected places. *CHD* readers should be prepared to deal with them.

By knowing the priorities of first aid, readers can not only save lives but help

also prevent permanent injury. This issue describes how to assess an injured child's airway, breathing and circulation before dealing with other injuries such as wounds and fractures. First aid treatment of common poisonings, insect and animal bites are also described.

Good care of common injuries such as wounds prevents complications from infection and tetanus. A separate article outlines how to manage different types of wounds.

Older children have an important role in helping to prevent accidents to each other and in helping make adults aware of the dangers children face. This issue gives examples of activities that can involve and encourage children in accident awareness and prevention.

Injuries are becoming a major public health concern. We hope readers will use the information in this issue to develop prevention activities in their daily work with children and families.
Rajam Krishnan and Harry Campbell

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Kangaroo research update



In CHD11 the 'Making newborn care work' article included a box on newborn resuscitation practices which should be stopped. This has prompted many letters from readers who still use some of these practices, asking for further explanation on why they are harmful.

Fabio Uxa explains:

Following a normal birth most babies adapt to life outside the womb without problems providing they are: delivered into a clean warm room; dried immediately and kept warm; breastfed as soon as possible and given appropriate cord care.

Many so-called 'traditional' or 'routine' practices for normal birth have been introduced without any evidence of effectiveness. There is no need to stimulate breathing as this occurs naturally on contact with air and the lower temperature outside the womb; gently drying the baby provides additional stimulation. There is no need to suck out the nose or throat unless the baby is asphyxiated or thick

meconium stained amniotic fluid is present. On the contrary, routine suction may cause complications including: reflex slowing of the heart beat; swelling and damage to the linings of the nose and mouth; and infections. It can also reduce the amount of oxygen a baby receives.

However, intervention is necessary in birth asphyxia, which affects between one and five per cent of newborn babies. Medical literature shows that the only effective practice is resuscitation – ventilation of the lungs after clearing the airways. The use of a bag and mask is the preferred method but if not available, then mouth to nose-and-mouth ventilation should be used (see CHD8 page 10). Ventilation must be prompt, within one minute of birth, and must continue until the onset of spontaneous respiration.

There are no controlled studies to show the effectiveness of other resuscitation practices: slapping the baby, milking the umbilical cord, throwing cold water, blowing the ears, stimulating the anus. Respiratory stimulants have never been proven effective and should not be used in neonatal resuscitation. If a mother received pethidine during labour, naloxone may be given to the baby. However, this counters the effects of pethidine and is not a respiratory stimulant. Holding the baby upside down by the feet is not only ineffective, it can be dangerous: the muscles are forcefully stretched and the diaphragm is compressed by the abdominal organs, making breathing more difficult. Finally, all these practices divert attention from the only one that is effective and life-saving in the case of birth asphyxia: ventilation of the lungs.

Our practices should always be based on evidence and not on tradition or routine.

Fabio Uxa, Unit for Health Service Research and International Cooperation, IRCCS Burlo Garfalo Via dell'Istria 65/1, 34137 Trieste, Italy



HIV and infant feeding

In CHD12 (pages 6-7) I was concerned with the order in which feeding options for infants of HIV-positive mothers were listed. 'Another woman who can breastfeed and knows

TERMS & DEFINITIONS

This box explains some of the technical terms used in this issue.

Accident – generally considered an 'unexpected' event that may cause injury. However many accidents are preventable and should be foreseen

Birth asphyxia – when a newborn baby fails to start and sustain breathing at birth

Injury – damage or trauma to part of the body. Injuries can be intentional (for example, due to violence) or unintentional as a result of an accident

that she does not have HIV' was listed as the last option. This implies it is the least effective option recommended. Considering the benefits of breastfeeding, allowing an infant to be breastfed by another HIV negative woman is the best option, especially in developing countries. Another lactating woman is probably easier to find than commercial formula, home-prepared formula or boiled expressed breastmilk. **Debra Kyler, Box 2, Likoma Island, Malawi**

Dr Lida Lhotska replies:

No particular meaning should be attached to the order in which the range of infant feeding options is given. Options other than commercial infant formula do make more sense for many women, and the best judge is the mother herself. Only she knows all of her circumstances, her resources and her family context.

Every woman who tests HIV positive should be counselled on ALL of the options, so she can consider their costs, risks (including stigmatization) and advantages. If health workers make decisions for groups of women ('as the best option'), this works against fulfillment of each woman's right to make her own decision.

Dr Lida Lhotska, Project Officer for Infant Feeding and Care, UNICEF, 3 UN Plaza, New York

Editor's note: Breastfeeding by another woman is only safe if she knows that she does not have HIV and remains HIV-negative.

Heldur Netocny/Panos Pictures



Holding an newborn baby upside down is unnecessary and can be dangerous.

Preventing injuries

Understanding what causes accidents helps health workers, parents, community members and older children to prevent childhood injuries.

Every year hundreds of thousands of children are hurt and many die in accidents in the home, outside it and on the road. Because of their age and inexperience children are often unable to assess risk and, as far as possible, must be protected from danger. To prevent injuries to children, health workers, parents and community members need to understand the common causes of accidents. Only then can they take action to make sure children are safe.

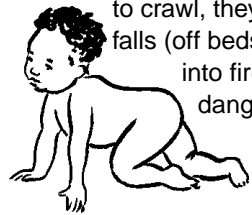
Children are at risk of different types of accidents and injuries according to their age, the environment in which they live, and the safety awareness of their parents or carers.

Age and danger

Accidents and injuries are directly associated with a child's stage of development. During the first three months of life babies lie wherever they are placed and drink whatever they are given. Accidents at this time are caused by actions of others, for example a small child might accidentally drop a young baby, or a baby left alone and fed with a bottle propped up, might choke.



Once children start to sit and begin to crawl, they are at risk from falls (off beds, down stairs or into fires) and putting dangerous things into their mouths, noses and ears.



When children begin to walk, they are no longer confined to a particular area and the likelihood of accidents increases. Children at this stage watch what others are doing with intense curiosity. They want to learn and experiment with whatever they can reach – knives, scissors, blades, matchboxes. They can also open cupboards and swallow medicines and small objects.



When they reach three or four years of age children become more skilled, so home accidents decrease. But then as they begin to leave the household compound, they find new play areas and become more adventurous. There are many hazards outside the home and children at this age also like to take risks in play. For example, they may play or fight with knives and sticks; eat unknown plants, flowers and fruits; and swim in local rivers. In all these activities there is a risk of injury.

Inside the home

Injuries in the home are common and include:

- **burns and scalds** from open fires, cooking pots or lamps, electrical appliances, hot food, boiling water, steam, hot fats, strong acid or corrosives
 - **cuts** from broken glass, rusty nails, rough wood or sharp knives and axes
 - **choking** from swallowing small objects such as coins, buttons or nuts
 - **poisoning** from eating or drinking harmful substances such as bleach, kerosene, other chemicals or poisonous plants
 - **broken bones** from falls out of windows or from climbing onto chairs.
- Parents and older children need to be aware of basic safety measures to prevent home injuries. Health workers have an important role to play in raising awareness of potential dangers (see box).

Outside play areas

Different types of accidents happen to children who live in different places – in towns or in villages. Common injuries out-of-doors are:

- drowning in open water (rivers, irrigation ditches, ponds) and wells. In some countries, such as India, drowning is a leading cause of death in childhood
- cuts and broken bones from falls
- poisoning from eating certain plants and berries
- bites from animals and snakes and stings from bees, scorpions and other insects.

Places where children often play should be made as safe as possible. All glass bottles should be banned from play areas. Older children can learn to take responsibility for the safety of younger children at play. However, where possible an adult carer should always be available and within sight of young children playing.

On the road

Children under nine years old are particularly at risk on roads. Small children do not think before they run into the road. They cannot estimate how fast vehicles are travelling and cannot tell by listening where a vehicle is coming from. In addition,

Dangers

Don't:

- ✗ ask a young child to look after another younger child
- ✗ leave young children unattended on a bed, table or chair or in a bath tub (children can drown in just 10 centimetres of water)
- ✗ let children run with small sticks, brushes or sharp objects in their hands. **Never** let children run with foreign objects in their mouths
- ✗ store dangerous liquids such as kerosene or insecticides in empty drink bottles
- ✗ let children play in open water unless supervised by an adult who knows that the water is 'safe'
- ✗ use unsafe equipment – the use of baby-walkers has resulted in many injuries related to falls and burns. A baby-walker does not improve a baby's development or speed up his or her ability to walk.



Sean Sprague/Panos Pictures

Children love playing in water but should always be supervised and taught to swim.

small children are often not seen by motorists.

Road traffic accidents are a major cause of death and injury in children. Injuries are often multiple and include heavy bleeding, broken bones and damage to main organs of the body. Long term effects, for example from head injuries, can be devastating to the child and family.

Teach young children to always stop at the roadside and to hold the hand of an older person while crossing the road. Older children should be taught to choose safe places to cross and look both ways and listen every time they

cross. Do not allow children to play with balls near the roadside.

Safe communities

The safety of children depends on their carer's knowledge about safety measures and the actions they take to make the road, home, play and school environments safe. Some actions need to be taken at government level such as public safety policies which enforce use of seat belts in cars. However, there are many things that health workers, parents, children and other community members such as teachers, can do.

Safety measures

Do:

- ✓ use barriers to prevent children falling down stairs, from windows and verandahs
- ✓ make sure unused electric sockets are blocked off
- ✓ keep sharp objects, medicine (especially pills which look like sweets), chemicals, nuts, matchboxes, coins and other small things out of reach of children
- ✓ protect children from stoves, open hearths, lamps and cooking pots
- ✓ remove poisonous plants from near the house and where children play
- ✓ make sure children stop, look and listen before they cross a road
- ✓ teach young children not to drink out of strange bottles or eat strange fruits or plants
- ✓ make outdoor play areas safe
- ✓ protect wells by keeping them

Preventative activities are described in the box on safety measures (above). All families, health workers and teachers also need to know simple first aid, particularly related to burns, cuts and wounds, and swallowing poisons (see pages 5-9).

Source: Children for Health (see resources, page 12). Thanks also to Centre for Health Education, Training and Nutrition (CHETNA), Lilavatiben Lalbhai's Bungalow, Civil Camp Road, Shahibaug, Ahmedabad – 380 004, Gujarat, India

Taking action in Malaysia

Road traffic injuries are a major health problem in Malaysia. In children aged 6-15 years, bicycle accidents resulting in head injuries, are a common cause of death. Wearing of bicycle helmets is the single most important action to prevent injury to cyclists. Six pilot helmet programmes have now been started in schools. Success in encouraging children to wear helmets regularly depends on dedicated teachers, community involvement, peer support and availability of storage for helmets at school.

In Kuala Lumpur, a primary school was chosen as the site of a road safety promotion project. Video recordings were made of children crossing the road and edited into a film to show safe and unsafe practices. The film was shown to all the children in the school and promotional material was sent to all parents.

Rajam Krishnan, Associate Professor, Department of Primary Health Care, University of Malaya, 50603 Kuala Lumpur, Malaysia



Rajam Krishnam

Children in Malaysia learn the importance of wearing bicycle helmets.

Editor's note: have you been involved in accident prevention activities? If so write and tell us what happened. Or, write and tell us how you used this article in your work. We will share reader's experiences in a future issue.

Priorities for giving first aid

Prompt first aid saves children's lives and prevents permanent injury. CHD readers can be prepared by learning what to do in case of an emergency

In an emergency, when a child is injured, a number of things may need attending to at the same time. If you try to do everything at once you may miss something important. On arriving at the scene of an accident:

Assess the situation

- take in quickly what has happened
- look for dangers to yourself and the injured child
- make the area safe.

Assess the injured child

- an unconscious person **always** takes priority and needs immediate help to make sure he or she can breathe. Only then begin to assess any injuries.

The ABC of first aid

The priorities of first aid are **A**irway, **B**reathing and **C**irculation. Following the ABC rule helps to save lives and prevent permanent injury. Only then look for injuries such as burns and broken bones.

A Airway

The airway of an unconscious child may be narrowed or blocked, making breathing difficult and noisy. This happens when the tongue drops back and blocks the throat. To open the airway, use two fingers to lift the child's chin. Place your other hand on the child's forehead and tilt the head back. This lifts the tongue away from the air passage. If you think the neck may be injured, lift the jaw forward, but **do not** tip the head back. Always check if anything is blocking the airway and remove it.

B Breathing

Check for breathing by placing your ear next to the child's mouth and nose. Feel for breath on your cheek and watch his or her stomach to check for movement. Check for up to ten seconds before deciding if breathing is absent. If absent, give mouth-to-mouth ventilation as follows:

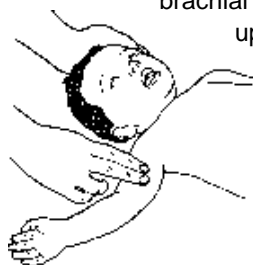
Make sure the child's head is tilted back to open the airway. Remove any obvious obstruction from the mouth. Pinch the child's nostrils closed. Seal your lips around his or her mouth and



breathe into the lungs until the chest rises. Give five breaths, one every three seconds. Check the pulse and look for other signs of recovery, such as coughing, swallowing or breathing.

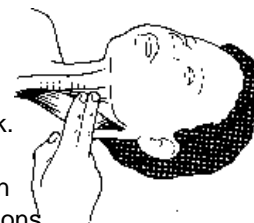
C Circulation

Check the circulation of the blood by feeling for child's heart beat (pulse). In a baby feel with two fingers for the brachial pulse on the upper inside of the arm.



In a child check for the carotid pulse in the neck.

If there is no heart beat, begin chest compressions to pump the blood around the body. Chest compressions should always be combined with artificial ventilation. In a child, alternate five chest compressions with one breath of artificial ventilation.



Check for bleeding and treat wounds

Most small cuts do not present any danger. However, large wounds, or wounds in which an artery has been damaged, can cause severe bleeding and shock (see next page). Depending on the type of wound and where it is on the body, there can also be damage to tendons and nerves. Bleeding from large cuts may need urgent medical treatment.

+ FIRST AID FOR BLEEDING AND WOUNDS

1. Place a clean pad of non-fuzzy (smooth) cloth over the wound. Press firmly with your hand for at least five minutes. During the five minutes, do not stop to check the wound as you may disturb any blood clots that have formed.
2. Help the injured child sit or lie down. Raise the injured part above the heart.
3. If the pad becomes soaked with blood, don't remove it. Put another pad on top of the first one and bind it tightly with a cloth. It should not be too tight. You must be able to fit a finger between the cloth and the skin. **Never** apply a tourniquet as this can cause permanent damage to a limb.
 - **Do not** apply any fats, oils, ointments or any other substances to the wound.
 - If available, always wear rubber gloves when dealing with blood to prevent the risk of HIV infection. See page 10 for wound care after initial first aid.



Check for shock

This happens when a person has been badly injured or is in great pain and is bleeding heavily. Sometimes an injured child bleeds inside the body without showing any blood outside. Shock is a serious condition and can kill. When a child is in shock:

- the skin becomes pale or grey and feels cold, clammy and sweaty
- the breathing speeds up and is quick and shallow
- he or she may seem confused.

+ FIRST AID FOR SHOCK

1. Lie the child down and keep him or her warm.
2. If possible, raise and support the legs and feet.
3. Loosen the clothing around the neck and waist.
4. Send for help or carry the child to a health centre. **Do not** give anything to eat or drink.
 - If the child vomits or becomes unconscious, place in the recovery position.



The recovery position

After checking the ABC (see page 5) turn the child onto his or her side (recovery position). This is the best position for an unconscious child or someone having a fit. It allows them to breathe easily and prevents them from choking.

If the child has fallen and you are worried about a neck injury, only put the child in this position if you can support the head while turning the child and keep it in a straight position.



Check for broken bones (fractures)

A cracked or broken bone is called a fracture. There are two types of fracture:

- a **closed fracture** where you cannot see the bone
 - an **open fracture** where the bone has broken through the skin and can be seen.
- Suspect a possible broken bone if the child has difficulty moving the injured part; or if the injured part moves in an unnatural way or is very painful to the touch. It is important to keep the injured part still, in a fixed position, to prevent any further damage to the body.

+ FIRST AID FOR BROKEN BONES

1. If the injury is to the child's neck or back, **do not** move him or her unless the child is in immediate danger. Movement can cause further injury and possible paralysis for the rest of the child's life. If the hospital has reliable transport get skilled help rather than attempting to move the child. However, if there is no alternative but to carry the child to hospital, use two or three helpers to lift him gently – without changing the position of his head – onto a board or door. Tie him so he cannot move and secure his head with pillows or blankets to prevent movement. Carry him without jolting. Make sure one person is responsible for making sure his neck does not move.



2. If the child is unconscious (but has no signs of neck injury) put him or her in the recovery position (see box).
3. If the child has an open fracture and there is severe bleeding, apply pressure on the bleeding area with a clean piece of cloth. **Do not** wash the wound or try to push back any part of the bone that may be sticking out. If the bone is sticking out, cover the break with a clean cloth to prevent infection.
4. To stop the broken bone moving:
 - place padding made from soft cloth around the broken bone
 - support the broken bone by bandaging it to a splint (see box) or another part of the body such as the trunk or opposite leg
5. **Check for signs of shock** and treat if necessary (see box)
6. Get medical help or transport the child to a health facility (preferably a hospital), making sure that the broken bone is well supported and cushioned. **Do not** let the child eat or drink.

Making splints

Splints help stop broken bones moving.

1. Make a splint from something which is stiff or does not bend easily, such as thick cardboard, a roll of newspaper or a thin bamboo or grass mat.
2. Pad the splint with soft cloth.
3. The splint must extend above and below the injured part.
4. Tie it securely with strips of cloth but not so tight as to cut off the blood supply to the injured part.



Choking

Choking occurs when an object sticks at the back of the child's throat either blocking the throat or causing muscle spasm. There will be:

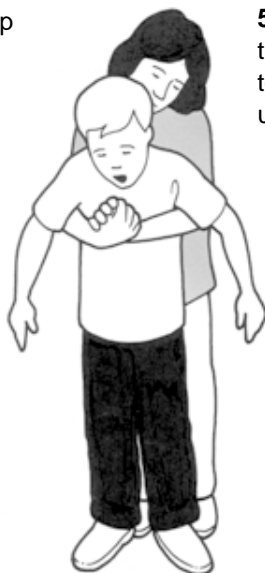
- difficulty in speaking and breathing
- blueness of the skin (cyanosis)
- signs from the child such as pointing to the throat or grasping the neck.

+ FIRST AID FOR A CHOKING CHILD (AGED 1-7 YEARS)

1. Bend the child forwards with his head lower than the chest. Slap him between the shoulder blades. Check the child's mouth and remove any obvious obstruction. If this fails:

2. Stand or kneel behind the child. Make a fist and place it against his lower breast bone. Grasp fist with your other hand. Press into the chest with a sharp upward thrust.

Give up to five of these thrusts at a rate of about one every three seconds.



3. Check his mouth. If the chest thrusts fail repeat step 1, giving up to five back slaps. Check his mouth. If choking persists try step 4.

4. Make a fist and place it against child's central upper abdomen. Grasp fist with your other hand. Press into his chest with a sharp upward thrust, up to five times.

5. If this fails, transport the child to a health facility urgently.

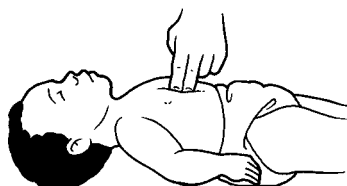


+ FIRST AID FOR CHOKING BABY (AGED 0-12 MONTHS)

1. Lay the baby face down along your forearm, keeping the head low. Give up to five sharp slaps on her back between the shoulder blades, using less force than for a child.



2. Check the baby's mouth; remove any obvious obstruction with one finger. **Do not** feel blindly down the throat.



3. If this fails turn the baby face up on your arm or lap. Place two finger tips on the lower half of the baby's breast bone, one finger's breadth below the nipples. Give up to five sharp thrusts into her chest.

4. Check the mouth again and remove any obvious obstruction. **Do not** use abdominal thrusts on a baby.

5. If the obstruction has still not cleared, repeat steps 1-4 three times.

6. If this fails take the baby to the nearest health facility immediately.

Burns

A burn is serious if it covers a large area of the skin or is deep. Serious burns need urgent medical help as the injured child may go into shock.

+ FIRST AID FOR BURNS

1. Remove the child from the source of the heat. If the child's clothing is on fire, wrap her in a blanket or cloth or roll her on the ground to put out the fire.

2. Cool the burnt area immediately by using lots of cold clean water. Soak or pour water over the affected part for 5-10 minutes.

3. For **small burns** (less than the size of a large coin or stamp): keep the burn area clean and dry and protect it with a loose bandage. **Do not** puncture blisters.

For **large burns**: **Do not** put oil, ghee, sugar, sodium bicarbonate or anything else on the burn. Cover the burnt area with a dry, clean cloth and get medical help immediately.

4. If necessary treat for shock.



See *CHD10* page 10 for more details on how to manage burns.

Editor's note: these hints are no substitute for a thorough knowledge of First Aid. We would advise you to take a First Aid course with an appropriate organisation in your area, such as St. John Ambulance or the Red Cross.

Source: First Aid Manual of St. John Ambulance, St. Andrew's Ambulance Association and the British Red Cross, 7th edition (see useful resources page 12); Footsteps newsletter (Tearfund), No 18, 1994

Poisoning and bites

Accidental poisoning, animal bites and insect stings are common in childhood. Prompt action can reduce complications.

Kerosene (paraffin) poisoning

Young children often drink kerosene by accident especially if it is kept in the house, stored in old soda or beer bottles. A child does not usually drink more than a mouthful because of the unpleasant taste. The main danger is that the kerosene will pass into the child's lungs by mistake. This can cause pneumonia or acute swelling of the lungs.

+ FIRST AID

- **Do not** make the child vomit as this forces paraffin into the lungs.
- **Do not** give the child anything to eat or drink.

AT THE HEALTH FACILITY

- **Do not** wash out the stomach.
- After examining the child, health workers should tell the parents to return if the child develops signs of pneumonia – fast or difficult breathing – which will need treatment with antibiotics.

Insecticide poisoning (Parathion, Malathion)

Insecticides are absorbed through the skin causing tremors of the muscles, sweating, a lot of saliva, and pinpoint pupils. In the later stage a child may develop convulsions, become unconscious or paralysed. The pinpoint pupils help diagnosis and guide the treatment.

+ FIRST AID

- Wash the child well with soap and water immediately, to remove any traces of insecticide from the skin.

AT THE HEALTH FACILITY

- If a child has any of the above signs, especially pinpoint pupils, the poisoning is serious. Refer the child urgently to hospital for treatment with high doses of atropine sulphate.



Medicines can kill. Keep them where children cannot reach them.

Accidental poisoning with medicines

Children often accidentally swallow tablets meant for adults, if they are not kept in a safe place in the home. Coloured and sugar-coated tablets (such as iron tablets) are especially dangerous.

+ FIRST AID

- Make the child vomit by placing a spatula (or finger) at the back of the child's throat.

AT THE HEALTH FACILITY

- If available, give 15ml of syrup Ipecac in a cup of water.
- Find out what the tablets were by asking the parents, looking at the tablets or any prescriptions of family members. Then, try to discuss any further action with the local hospital.

Snake bites

A snake bite can be dangerous and may cause death. Most snake bites occur during the hours of darkness, on the foot or ankle, because children tread on or near the snake.

The effect of the bite depends upon the amount of venom injected and the type of snake. Some snakes bite without injecting venom. Health workers should learn about the venomous snakes in their area and find out which hospitals in their area stock antivenom.

+ FIRST AID

- Lie the child down, try to calm and keep him or her still. Reassure the parents.
- Immobilise the bitten limb with a splint (leg) or sling (arm)
- **Do not** apply a tourniquet, **do not** slash the wound with a knife and **do not** attempt to suck out the venom.

AT THE HEALTH FACILITY

- Assess for signs of poisoning: difficulty swallowing or breathing, muscle weakness or paralysis, or bleeding disorders. If present, refer to hospital.
- **Do not** give steroids or heparin. They do not help.

Animal bites

Germs are found in the mouths of all animals (including humans). Bites from sharp pointed teeth cause deep puncture wounds that can carry germs far into the tissues. These wounds are very vulnerable to infection. The bite of an animal can cause rabies (a viral illness), which can result in death.

+ FIRST AID

- Wash and flush the bite with water and with soap, if available.

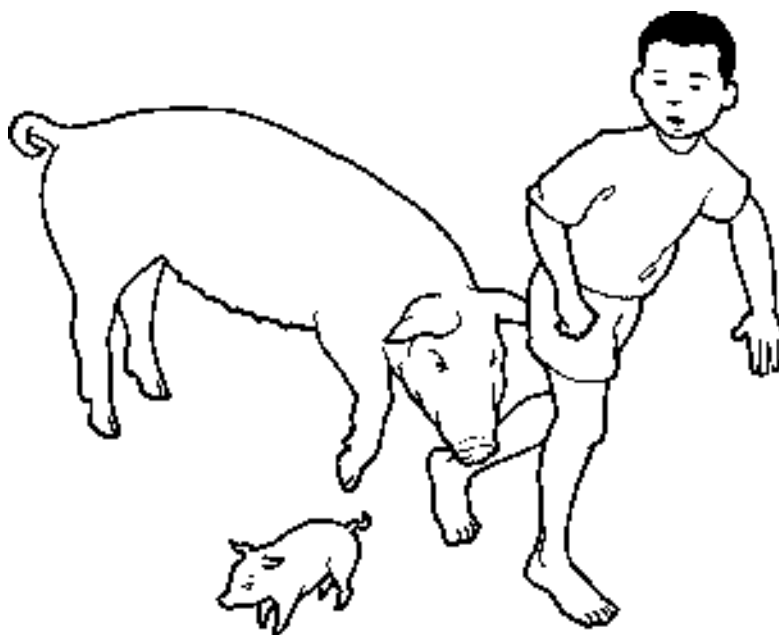
AT THE HEALTH FACILITY

- **Do not** close the wound. If a light dressing is needed, check the wound twice a day for signs of infection (see page 10).
- Give an antibiotic such as ampicillin or amoxycillin (see page 10 for dosage).
- Check if the child has been vaccinated against tetanus and immunise as necessary (see page 10).

If there is a chance that the animal has rabies:

- Apply alcohol (400-700ml per litre) or aqueous or tincture of iodine

- Assess whether post-exposure rabies treatment should be given. This will depend on: the presence of rabies in the area; the type and health of the animal involved; whether or not anti-rabies serum and vaccine is available. Keep the animal under observation. If there is any suspicion of rabies, take the child to a health facility which stocks the post-exposure rabies vaccine.



Children who have been bitten by animals must be seen by a health worker.

Insect stings

Most insect stings although painful, are not dangerous. Some children, however, are allergic to these poisons and can rapidly develop anaphylactic shock (see table below). Multiple stings can also be dangerous. Stings in the mouth or throat can be serious, as the swelling they cause can block the airway.

+ FIRST AID

- If the sting is still in place, remove it with tweezers.
- Apply a cold compress to reduce pain and swelling.
- Calamine lotion can help relieve discomfort. Antihistamine creams do not help.
- Observe for signs of anaphylactic shock.

Anaphylactic shock

Any child who collapses, shows signs of shock or has difficulty breathing within approximately one hour of being stung by an insect, should be taken to a health facility and treated as having anaphylactic shock. Give intramuscular (IM) adrenaline (epinephrine) and hydrocortisone injection (see table).

Treatment for anaphylactic shock

	Adrenaline 1mg/ml (1:1000) The dose can be repeated every 15-30 mins, if necessary.	Hydrocortisone single dose
AGE	DOSE	DOSE
Less than 1 year	0.05ml	25mgs
1-2 years	0.2ml	50mgs
2-4 years	0.3ml	50mgs
5 years	0.4ml	50mgs
6-12 years	0.5ml	100mgs
Oxygen can also be given if available.		

Key messages

- Learn the ABC of First Aid.
- **Do not** make a child vomit if he or she has swallowed kerosene or a corrosive chemical such as bleach.
- **Do** make a child vomit as soon as possible if he or she has swallowed pills or poisonous foods.
- Know which health facilities in your area stock snake anti-venom and anti-rabies vaccine.
- Deep animal or human bites lead to infection. Always check the child's tetanus status and give antibiotics, but **do not** suture the wound.

QUIZ answers from page 12

- 1** b) Burns should always be treated by immediately soaking in cold clean water. This relieves the pain and reduces the damage by cooling the skin. Never apply any cream or grease. Never try and pull off loose pieces of skin or clothing. After **b)** do **c)**.
- 2** c) Broken bones should be splinted to prevent any movement before the injured person is carried to a health facility. Never try and push bones back into place as you may cause a lot of damage.
- 3** b) A child who has swallowed a chemical should never be made to vomit as this will cause further damage.
- 4** c) Movement makes snake venom travel faster around the body. However in situations where medical help is far away, it is just as important to calm and reassure the patient and relatives. In this situation reassurance should be followed by **c)**.
- 5** b) or c) Never move anyone who seems to have injured their neck or back – unless leaving them where they are puts their life in danger.

How to . . . manage wounds

Taking good care of wounds prevents infection, including tetanus, and aids healing.

Surface (minor) wounds

Minor wounds are those which only involve the top layer of skin. Rinse the wound thoroughly with soap and water to clean out the dirt. Avoid antiseptics, as they have not been proven to help. Tweezers can be used to remove small pieces of grit or dirt, if they are not embedded in the wound. Boil the tweezers in water for five minutes before use. Dry the wound, then cover it with a commercial dressing or clean piece of cloth.

Examine the wound daily and check for signs of infection (see below). Be aware that some types of wounds are more likely to become infected (see box). If the dressing gets wet, remove it and apply a new one. After the wound forms a scab, a dressing is no longer necessary.

Large cuts and wounds

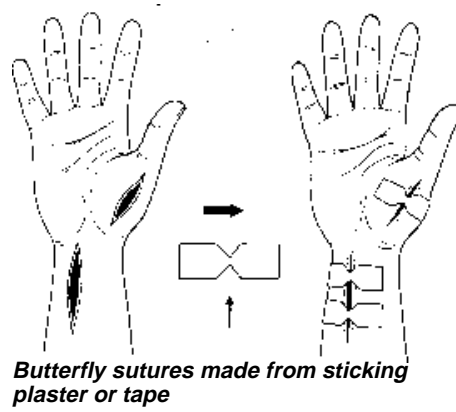
Some larger surface cuts heal more quickly if they are closed or stitched. Once any bleeding has stopped (see page 5) assess the wound. Close a deep cut only if:

- the cut was done less than 12 hours ago
- the cut is very clean and there is no dirt hidden in it.

Bites from dogs, pigs, other animals and people, must be left open. Closing them can cause dangerous infections.

Wounds can be closed using butterfly sutures (see illustration) or stitches using thread.

Leave the butterfly sutures or stitches in place for 6-12 days (on the face 6 days, the body 8 days, the hand or foot 12 days). If the wound shows any signs of infection, remove the stitches immediately and leave the wound open.



Butterfly sutures made from sticking plaster or tape

Dirty wounds

TREATMENT

1. Wash the wound well with plenty of clean water (ideally boiled) and soap.
2. Remove all bits of dirt, blood clots, dead or badly damaged flesh.
3. Soak the wound in water to which potassium permanganate has been added (one teaspoon potassium permanganate to one bucket of water).
4. Paint the wound with gentian violet solution and cover with a clean bandage. Check daily for signs of infection.

If the wound is very deep, is a bite, or still has dirt in it, give the child an antibiotic such as ampicillin, 25-50mg/kg every six hours for five days.

Infected wounds

A wound is infected if it becomes red, swollen, hot and painful, has pus in it or begins to swell. Sometimes the infection can spread to other parts of the body. Suspect this if:

- child develops fever
- there is a red line near the wound
- the lymph glands (small nodules in the armpit, groin or neck) become swollen and painful.

TREATMENT

1. Give an antibiotic, as above.
2. If the infected wound is on a child's arm or leg, advise carers to immerse the limb in a bucket of hot water (but not too hot) which has soap or potassium permanganate in it. Do this daily. Dry and cover with clean dressing until healed.

Tetanus risk

Tetanus is caused by a germ which lives in the faeces of animals and people and enters the body through a wound. Children who have not been vaccinated are particularly at risk of tetanus. After cleaning the wound, always check the child's immunisation record. Then:

● for dirty wounds

If the child has had three doses of DPT vaccine, which contains tetanus vaccine: give a booster injection of TT (or DPT or DT vaccine). If he or she has had any TT during the last year this booster is not necessary.

If the child has **not** had three DPT injections: give 3000 units of tetanus antitoxin (if available) and TT (or DPT or DT vaccine). Give the antitoxin and TT in different syringes, into different sides of the body. A month later give another injection of TT.

● for clean wounds

Treat the child in the same way as above, but **do not** give tetanus antitoxin.

Note: for children seven years of age and older, WHO recommends that Td be given rather than TT. Td has a reduced diphtheria component.

Source: First Aid in Illness and Injury for Nurses and Emergency Care Workers (see resources page 12)

WOUNDS LIKELY TO BECOME INFECTED

- dirty wounds or wounds caused by dirty objects
- puncture wounds and other deep wounds which do not bleed much, such as wounds from thorns or nails
- large wounds with severe bruising or crushing
- bites, especially from pigs, dogs or people
- bullet wounds
- wounds caused by barbed wire.

ACTIVITY 2

A survey and discussion

Children can record accidents that have happened to members of their families. Ask the children to make three lists of accidents which have happened in the last six months at home, on the road, anywhere else out-of-doors. Decide which kind of accidents happen most often in the community. Discuss why they happen and what can be done to prevent them.

ACTIVITY 3

Road safety

Start the discussion by asking if any of the children in the group have been injured in an accident on the road, or know anyone who has. Talk about how the accident happened and how it could have been prevented.

Talk about what causes accidents on the road and why they happen.

Use the school playground to learn about dangers on the road and to practise road safety.

- 1 Draw roads on the ground similar to those in the neighbourhood. Create 'dangerous' situations by putting a bend in one road and an inter-section in another.
- 2 Some children act as fast cars, overloaded lorries, bicycle riders, bushes, parked vehicles or careless drivers along the road. They could drive carefully some of the time, but at other times pretend to be bad drivers, speeding up or failing to stop at traffic lights.
- 3 Other children take turns showing how they would walk along the road, or try to cross the road safely.

Back in the classroom, let children work in pairs or groups to make lists of rules for crossing the road safely and present them to the class. Decide which set of rules is clearest and most useful. Check these with the local police, then pin them on the class-room wall as a reminder.

Editor's note: can you contact schools in your area and work with teachers to try some of these activities? If so, write to CHD and share your experiences.



Sean Sprague/Panos Pictures

Encourage children to learn about basic safety measures.

Involving children

Simple activities at school can help children become aware of danger and encourage them to learn and understand about safety.

Older children can help to reduce the number and seriousness of accidents by practising safety at home, out-of-doors and on the road. Children can learn to spot the most common dangers, and understand how these dangers can be avoided or prevented. They can watch out for the safety of others, particularly smaller children, and be prepared to help when an accident happens.

There are many different activities that can encourage children to talk about and understand, the accidents which they see happen most often in their community. Learning about accidents can also help them to make adults aware of the dangers children face.

ACTIVITY 1

Learning through drawing

Ask the children to make a series of drawings to show how an accident might happen. For example:

- 1 A mother is filling the cooking stove with kerosene.
- 2 A visitor comes to the house and the mother goes to talk to the visitor.
- 3 Her small child, left by himself, picks up the kerosene bottle and drinks from it.

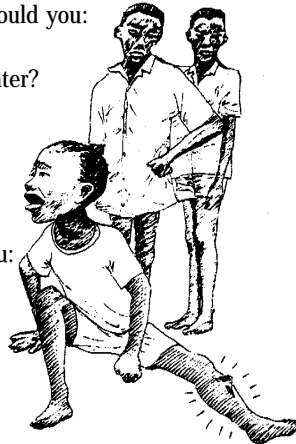
Let the children look at the drawings and suggest what could be done to prevent this happening again.

OR
Make pictures which show different dangers at home, in a playground, or on the way to school. Put the pictures on a wall. Ask where and why accidents can happen and what they should do prevent them.

Adapted from Child-to-child activity sheets 'Preventing accidents' and 'Road safety' (see resources page 12)

Learning exercise – FIRST AID QUIZ

- 1 Walking down a street, you hear screaming. A young child has fallen into a fire. Both hands and arms are obviously badly burnt. Should you:
 - a) Cover the burnt skin with oil or ghee?
 - b) Put the child's arms into a bowl of clean cold water?
 - c) Wrap the child's arms in a clean cloth and take the child to a clinic?
- 2 A child has fallen out of a tree. One leg is broken and the bones can be seen through the damaged skin. Before carrying the child to a clinic, should you:
 - a) Wrap the child's leg in a clean blanket?
 - b) Gently push the bones back into place, before wrapping the leg firmly to prevent movement?
 - c) Cover the injury and splint the child's leg to prevent movement?
- 3 A mother brings her three year old child to you, saying that he has drunk some kerosene. Should you:
 - a) Make the child vomit?
 - b) Explain the signs of pneumonia and advise the mother to return immediately if the child develops them?
 - c) Wash the child's stomach out ?
- 4 A child has been bitten by a poisonous snake. Her parents are convinced she will die. The nearest hospital where they may have anti-snakebite venom is two hours drive away. Should you:
 - a) Reassure the parents that less than half of poisonous snakebites cause death and send her home?
 - b) Apply a tourniquet above the bite and cut open the bite to suck out the poison?
 - c) Strap her leg to a splint to stop it moving, then set off for hospital?
- 5 A neighbour's child is riding his bicycle on rough ground when he hits a tree trunk and is thrown off over the handlebars. He lands hard on his head and is unconscious. The nearest hospital is one hour's walk away. Should you:
 - a) Straighten him into a comfortable position and check his breathing before running for help?
 - b) Ensure that no-one moves him, check his breathing and then run for help?
 - c) Check his breathing, then lift him gently onto a firm board or door, without moving his head and take him to hospital?
- 6 A child has been brought to clinic having been bitten by a pig. She has deep teeth marks on her arm. Should you:
 - a) Clean the wound?
 - b) Clean the wound and check her tetanus status?
 - c) Clean the wound, check her tetanus status and give antibiotics?



Answers on page 9.

Adapted from: The emergency quiz, Footsteps newsletter (Tearfund), No. 18, 1994

Useful resources



Child-to-child activity sheets on preventing accidents, first aid and road safety. Price: £1 each. Available from TALC, PO Box 49, St Albans, Herts AL1 5TX, UK. Fax: +44 1727 853869. E-mail: talcuk@binternet.com



Children for Health is a resource book for anyone who works with children and their families in schools and communities. It includes a chapter on what children need to know about accidents. Price: £3 plus postage. Available from: TALC



First Aid Manual (7th edition) covers all first aid procedures and includes a free quick reference emergency first aid booklet. Price: £8.60 plus postage (£2.75 surface). Available from: TALC



First Aid in Illness and Injury for Nurses and Emergency Care Workers is a practical handbook covering common problems in the tropics. Price: £5.95 plus £1 postage. Available from: Macmillan Education, Houndsmill, Basingstoke RG21 6XS, UK. Fax: +44 1256 814642

Child Health Dialogue provides a forum for the exchange of information about the prevention and treatment of five key childhood illnesses – acute respiratory infections, diarrhoea, malaria, malnutrition and measles.

The international English edition is published four times a year by Healthlink Worldwide in the UK. Together with 10 regional editions and an electronic edition, it has a worldwide circulation of 150,000 copies with an estimated readership of nearly one million.

An adapted text of *CHD* is available on electronic mail in some countries via Satelife's computer network, Healthnet.Contactthnet@usa.healthnet.org

Publishing partners for regional editions

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CHD thanks the following people for reviewing text for this issue: Professor Zulkifli Ismail, Professor Dinesh Mohan, Dr Elizabeth Molyneux, Dr Lotte Newman, Dr Karen Zwi

Child Health Dialogue is supported by the UK Department for International Development (DFID), European Union, UNICEF, WHO

We are grateful to Pharos International Ltd for helping to fund the distribution of this issue.

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ISSN 1363-2094

Printed by Russell Press, Nottingham

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Annual subscription charges

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