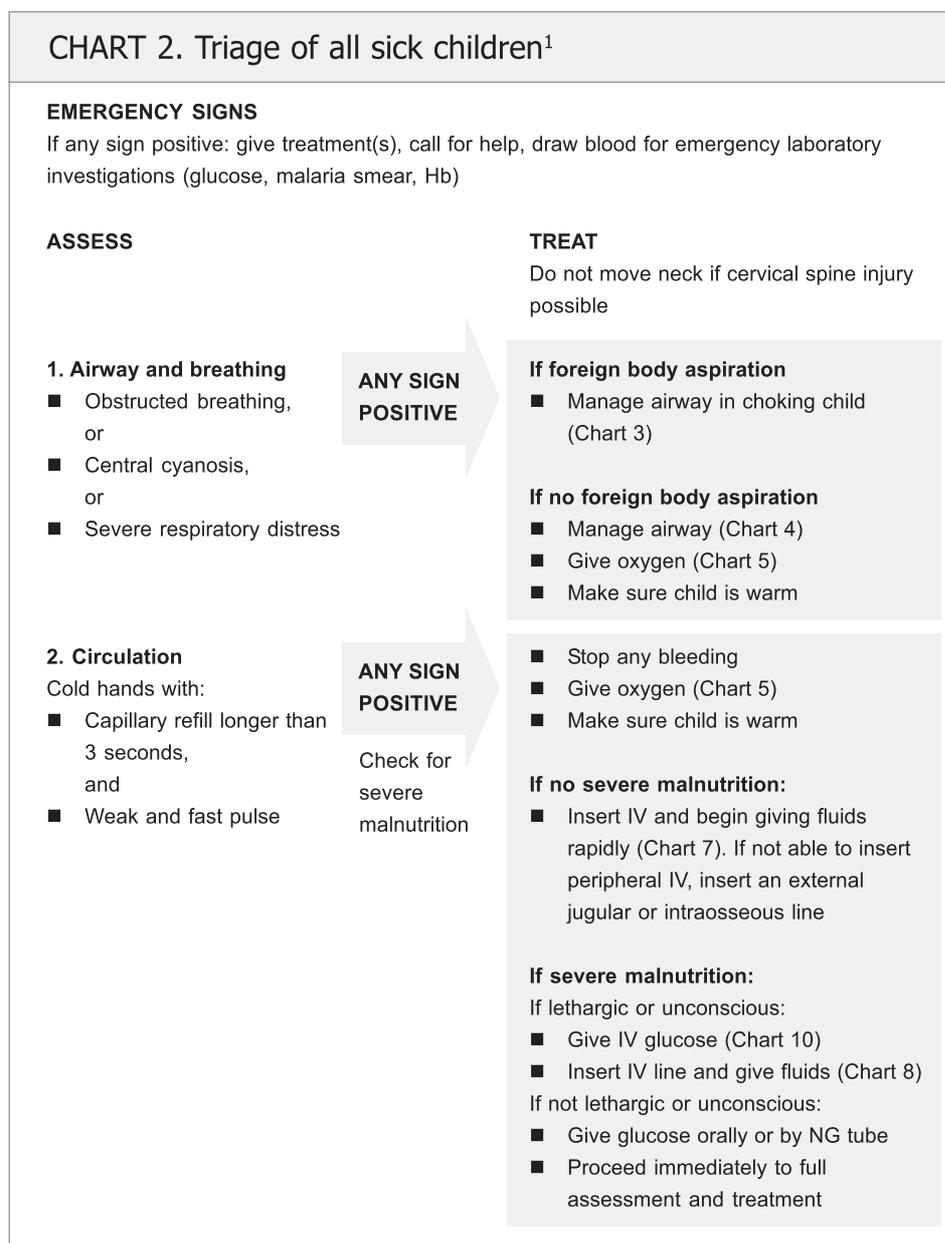


Annex Three

ETAT charts



¹ The numbering of charts in this course starts with Chart 2, in line of the numbering of charts in the "Pocket book of hospital care for children" or the manual "Management of the child with a serious infection or severe malnutrition."

CHART 2. Triage of all sick children (continued)

EMERGENCY SIGNS

If any sign positive: give treatment(s), call for help, draw blood for emergency laboratory investigations (glucose, malaria smear, Hb)

ASSESS

3. Coma/convulsing

- Coma
or
- Convulsing (now)

IF COMA OR
CONVULSING

4. Severe dehydration

(only in child with diarrhoea)
Diarrhoea plus any two of these:

- Lethargy
- Sunken eyes
- Very slow skin pinch

DIARRHOEA
plus TWO
SIGNS
POSITIVE

Check for
severe
malnutrition

TREAT

Do not move neck if cervical spine injury possible

- Manage airway (Chart 4)
- If convulsing, give diazepam or paraldehyde rectally (Chart 9)
- Position the unconscious child (if head or neck trauma is suspected, stabilize the neck first) (Chart 6)
- Give IV glucose (Chart 10)

- Make sure child is warm.

If no severe malnutrition:

- Insert IV line and begin giving fluids rapidly and Diarrhoea Treatment Plan C in hospital

If severe malnutrition:

- Do not insert IV
- Proceed immediately to full assessment and treatment

PRIORITY SIGNS

These children need prompt assessment and treatment

- Tiny baby (<2 months)
- Temperature very high
- Trauma or other urgent surgical condition
- Pallor (severe)
- Poisoning (history of)
- Pain (severe)
- Respiratory distress
- Restless, continuously irritable, or lethargic
- Referral (urgent)
- Malnutrition: Visible severe wasting
- Oedema of both feet
- Burns (major)

Note: If a child has trauma or other surgical problems, get surgical help or follow surgical guidelines

NON-URGENT

Proceed with assessment and further treatment according to the child's priority

CHART 3. How to manage a choking child

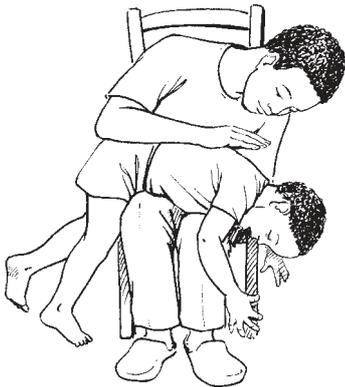


Back slaps



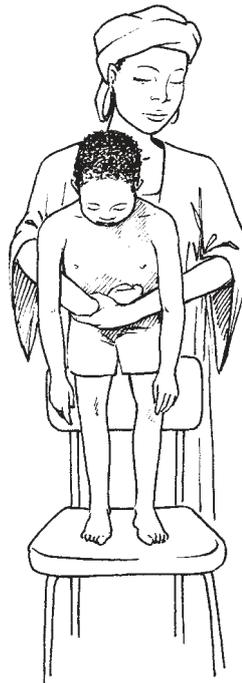
Chest thrusts

- Lay the infant on your arm or thigh in a head down position
- Give 5 blows to the infant's back with heel of hand
- If obstruction persists, turn infant over and give 5 chest thrusts with 2 fingers, one finger breadth below nipple level in midline (see diagram)
- If obstruction persists, check infant's mouth for any obstruction which can be removed
- If necessary, repeat sequence with back slaps again



Slapping the back to clear airway obstruction in a choking child

- Give 5 blows to the child's back with heel of hand with child sitting, kneeling or lying
- If the obstruction persists, go behind the child and pass your arms around the child's body; form a fist with one hand immediately below the child's sternum; place the other hand over the fist and pull upwards into the abdomen (see diagram); repeat this Heimlich manoeuvre 5 times
- If the obstruction persists, check the child's mouth for any obstruction which can be removed
- If necessary, repeat this sequence with back slaps again



Heimlich manoeuvre in a choking older child

CHART 4. How to manage the airway in a child with obstructed breathing (or who has just stopped breathing)

NO NECK TRAUMA IS SUSPECTED



Neutral position to open the airway in an infant

Child conscious

- Inspect mouth and remove foreign body, if present
- Clear secretions from throat
- Let child assume position of maximal comfort

Child unconscious

- Tilt the head as shown
- Inspect mouth and remove foreign body, if present
- Clear secretions from throat
- Check the airway by looking for chest movements, listening for breath sounds and feeling for breath
- Follow guidelines in Chart 6



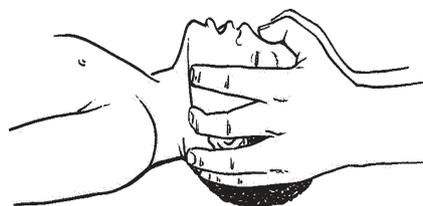
Sniffing position to open the airway in an older child



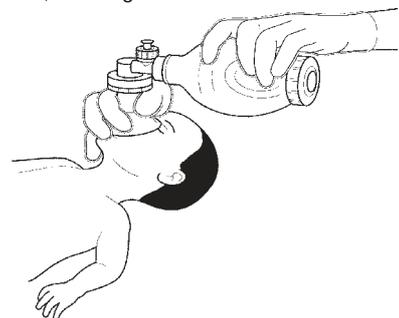
Look, listen and feel for breathing

NECK TRAUMA OR POSSIBLE CERVICAL SPINE INJURY IS SUSPECTED

- Stabilize the neck, as shown in Chart 6
- Inspect mouth and remove foreign body, if present
- Clear secretions from throat
- Check the airway by looking for chest movements, listening for breath sounds, and feeling for breath



Use jaw thrust without head tilt. Place the 4th and 5th finger behind the angle of the jaw and move it upwards so that the bottom of the jaw is thrust forwards, at 90° to the body



If the child is still not breathing after carrying out the above, ventilate with bag and mask

CHART 5. How to give oxygen**Give oxygen through nasal prongs or a nasal catheter****Nasal Prongs**

- Place the prongs just inside the nostrils and secure with tape

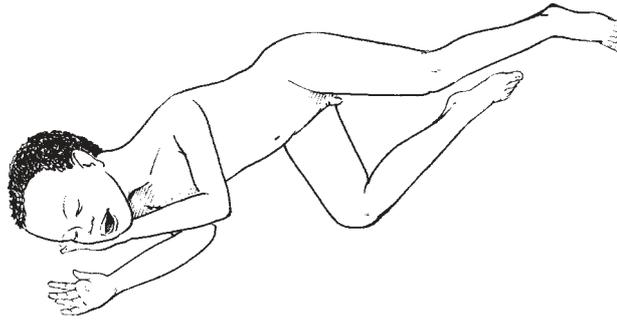
**Nasal Prongs****Nasal Catheter**

- Use an 8 FG size tube
- Measure the distance from the side of the nostril to the inner eyebrow margin with the catheter
- Insert the catheter to this depth
- Secure with tape

**Nasal Catheter**

Start oxygen flow at 1-2 litres/minute

CHART 6. How to position the unconscious child



If neck trauma is not suspected:

- Turn the child on the side to reduce risk of aspiration
- Keep the neck slightly extended and stabilize by placing cheek on one hand
- Bend one leg to stabilize the body position

If neck trauma is suspected:

- Stabilize the child's neck and keep the child lying on the back
- Tape the child's forehead to the sides of a firm board to secure this position
- Prevent the neck from moving by supporting the child's head (e.g. using litre bags of IV fluid on each side)
- If vomiting, turn on the side, keeping the head in line with the body

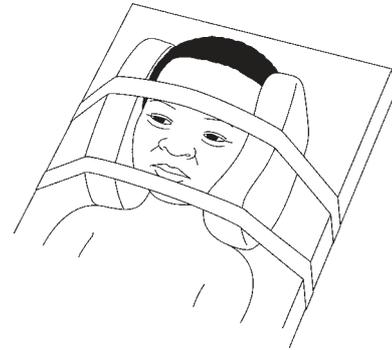


CHART 7. How to give IV fluids rapidly for shock in a child without severe malnutrition

- If the child is severely malnourished the fluid volume and rate are different, so check that the child is not severely malnourished
Shock in child without severe malnutrition — Chart 8
Shock in child with severe malnutrition — Chart 9
- Insert an intravenous line (and draw blood for emergency laboratory investigations)
- Attach Ringer's lactate or normal saline—make sure the infusion is running well
- Infuse 20 ml/kg as rapidly as possible

Age/weight	Volume of Ringer's lactate or normal saline solution (20 ml/kg)
2 months (<4 kg)	75 ml
2–<4 months (4–<6 kg)	100 ml
4–<12 months (6–<10 kg)	150 ml
1–<3 years (10–<14 kg)	250 ml
3–<5 years (14–19 kg)	350 ml

Reassess child after appropriate volume has run in

Reassess after first infusion:	If no improvement, repeat 20 ml/kg as rapidly as possible
Reassess after second infusion:	If no improvement, repeat 20 ml/kg as rapidly as possible
Reassess after third infusion:	If no improvement, give blood 20 ml/kg over 30 minutes, unless the child has profuse diarrhoea
Reassess after fourth infusion:	If no improvement, see disease specific treatment guidelines. You should have established a provisional diagnosis by now.

After improvement at any stage (pulse slows, faster capillary refill), go to Chart 11.

CHART 8. How to give IV fluids for shock in a child with severe malnutrition

Give this treatment only if the child has signs of shock **and is lethargic or has lost consciousness**:

- Insert an IV line (and draw blood for emergency laboratory investigations)
- Weigh the child (or estimate the weight) to calculate the volume of fluid to be given
- Give IV fluid 15 ml/kg over 1 hour. Use one of the following solutions (in order of preference) according to availability:
 - Ringer's lactate with 5% glucose (dextrose); or
 - half-normal saline with 5% glucose (dextrose); or
 - half-strength Darrow's solution with 5% glucose (dextrose); or, if these are unavailable,
 - Ringer's lactate.

Weight	Volume IV fluid Give over 1 hour (15 ml/kg)	Weight	Volume IV fluid Give over 1 hour (15 ml/kg)
4 kg	60 ml	12 kg	180 ml
6 kg	90 ml	14 kg	210 ml
8 kg	120 ml	16 kg	240 ml
10 kg	150 ml	18 kg	270 ml

- Measure the pulse and breathing rate at the start and every 5-10 minutes.

If there are signs of improvement:

- give repeat IV 15 ml/kg over 1 hour; then
- switch to oral or nasogastric rehydration with ReSoMal, 10 ml/kg/h up to 10 hours; then
- initiate refeeding with starter F-75.

If the child fails to improve after the first 15ml/kg IV, assume the child has septic shock:

- give maintenance IV fluid (4 ml/kg/h) while waiting for blood;
- when blood is available, transfuse fresh whole blood at 10 ml/kg slowly over 3 hours (use packed cells if in cardiac failure); then
- initiate refeeding with starter F-75 .
- start antibiotic treatment.

If the child deteriorates during the IV rehydration (breathing increases by 5 breaths/min or pulse by 15 beats/min), stop the infusion because IV fluid can worsen the child's condition.

CHART 9. How to give diazepam (or paraldehyde) rectally

Give diazepam rectally:

- Draw up the dose from an ampoule of diazepam into a tuberculin (1 ml) syringe. Base the dose on the weight of the child, where possible. Then remove the needle.
- Insert the syringe into the rectum 4 to 5 cm and inject the diazepam solution.
- Hold buttocks together for a few minutes.

Age/weight	Diazepam given rectally 10 mg/2ml solution	Paraldehyde given rectally
	Dose 0.1ml/kg	Dose 0.3-0.4 ml/kg
2 weeks to 2 months (< 4 kg)*	0.3 ml (1.5 mg)	1.0 ml
2-<4 months (4-<6 kg)	0.5 ml (2.5 mg)	1.6 ml
4-<12 months (6--<10 kg)	1.0 ml (5 mg)	2.4 ml
1-<3 years (10-<14 kg)	1.25 ml (6.25 mg)	4 ml
3-<5 years (14-19 kg)	1.5 ml (7.5 mg)	5 ml

If convulsion continues after 10 minutes, give a second dose of diazepam rectally (or give diazepam intravenously (0.05 ml/kg) if IV infusion is running).

If convulsion continues after another 10 minutes, give a third dose of diazepam or give paraldehyde rectally (or phenobarbital IV or IM 15 mg/kg).

If high fever:

- Sponge the child with room-temperature water to reduce the fever.
- Do not give oral medication until the convulsion has been controlled (danger of aspiration).

* Use phenobarbital (200 mg/ml solution) in a dose of 20 mg/kg to control convulsions in infants <2 weeks of age:

Weight 2 kg-initial dose: 0.2 ml, repeat 0.1 ml after 30 minutes] If convulsions continue
Weight 3 kg-initial dose: 0.3 ml, repeat 0.15 ml after 30 minutes	

CHART 10. How to give IV glucose

- Insert IV line and draw blood rapidly for emergency laboratory investigations
- Check blood glucose. If low (<2.5 mmol/litre (45 mg/dl) in a well nourished or <3 mmol/litre (55 mg/dl) in a severely malnourished child) or if dextrostix is not available:
- Give 5 ml/kg of 10% glucose solution rapidly by IV injection

Age/weight	Volume of 10% glucose solution to give as bolus (5 ml/kg)
Less than 2 months (<4 kg)	15 ml
2–<4 months (4–<6 kg)	25 ml
4–<12 months (6–<10 kg)	40 ml
1–<3 years (10–<14 kg)	60 ml
3–<5 years (14–19 kg)	80 ml

- Recheck the blood glucose in 30 minutes. If it is still low, repeat 5 ml/kg of 10% glucose solution.
- Feed the child as soon as conscious.

If not able to feed without danger of aspiration, give:

- milk or sugar solution via nasogastric tube (to make sugar solution, dissolve 4 level teaspoons of sugar (20 grams) in a 200-ml cup of clean water), or
- IV containing 5-10% glucose (dextrose)

Note: 50% glucose solution is the same as 50% dextrose solution or D50. If only 50% glucose solution is available: dilute 1 part 50% glucose solution to 4 parts sterile water, or dilute 1 part 50% glucose solution to 9 parts 5% glucose solution.

Note: For reliable results, take great care with the dextrostix test. The strip must be stored in its box, at 2-3 °C, avoiding sunlight or high humidity. A drop of blood should be placed on the strip (it is necessary to cover all the reagent area). After 60 seconds, the blood should be washed off gently with drops of cold water and the colour compared with the key on the bottle or on the blood glucose reader. (The exact procedure will vary with different strips.)

CHART 11. How to treat severe dehydration in an emergency setting

For children with severe dehydration but without shock, refer to Table 12, page 47.

If the child is in shock, first follow the instructions in Charts 7 and 8. Switch to the present chart when the child's pulse becomes slower or the capillary refill is faster.

Give 70 ml/kg of Ringer's lactate solution (or, if not available, normal saline) over 5 hours in infants (aged <12 months) and over 2½ hours in children (aged 12 months to 5 years).

Weight	Total volume IV fluid (volume per hour)	
	Age <12 months Give over 5 hours	Age 12 months to 5 years Give over 2.5 hours
<4 kg	200 ml (40 ml/h)	-
4-6 kg	350 ml (70 ml/h)	-
6-10 kg	550 ml (110 ml/h)	550 ml (220 ml/h)
10-14 kg	850 ml (170 ml/h)	850 ml (340 ml/h)
14-19 kg	1200 ml (240 ml/h)	1200 ml (480 ml/h)

Reassess the child every 1-2 hours. If the hydration status is not improving, give the IV drip more rapidly.

Also give ORS solution (about 5 ml/kg/hour) as soon as the child can drink; this is usually after 3-4 hours (in infants) or 1-2 hours (in children).

Weight	Volume of ORS solution per hour
<4 kg	15 ml
4-6 kg	25 ml
6-10 kg	40 ml
10-14 kg	60 ml
14-19 kg	85 ml

Reassess after 6 hours (infants) and after 3 hours (children). Classify dehydration. Then choose the appropriate plan (A, B, or C) to continue treatment.

If possible, observe the child for at least 6 hours after rehydration to be sure that the mother can maintain hydration by giving the child ORS solution by mouth.