

Assessment and Treatment of the infant / child with signs of life

(Assuming you are in a health facility and there is no trauma)



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KENYA
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Objectives

- To learn how to make the initial assessment of a sick child and how to make immediate decisions

Initial steps

- Observe – *is the child alert?*
- Safe?
- (Stimulate) Shout for help? Setting?
- **Airway**
 - Does it need clearing / support?
- **Breathing**
 - Is oxygen required? (sometimes bronchodilators)
- **Circulation**
 - Is intervention required? (Fluids / blood)
- **Disability**
 - Is dextrose required or anticonvulsants

The S's in a seriously ill child

- Safety
 - Hand hygiene
 - Gloves / sharps etc
- Stimulate
 - ***If alert you DO NOT need to stimulate***
- Shout
 - if the child seems seriously ill get help
- Setting
 - Are you in the best part of the unit to give emergency care
 - Is further assessment best on a bed / couch or in the caretaker's arms?

Airway

- ***If alert -***
 - Listen for noisy breathing
 - Stridor / obstruction / foreign body?
- ***If not alert move*** the infant / child to a couch or bed and –
 - Look in the mouth – any obvious obstruction?
 - Airway positioning or support needed?

Airway opening to improve breathing



Rapidly assess breathing – why?

- Inadequate breathing results in poor delivery of oxygen to all the body:
 - Can cause altered conscious level
 - Can result in complete collapse (respiratory arrest) if not treated

Rapidly assess breathing – how?

- Central Cyanosis?
- Respiratory rate*:
 - Very Fast?
- **Pulse oximetry**
- Respiratory Effort
 - Grunting?
 - Head nodding / bobbing?
 - Indrawing?
 - Deep / acidotic breathing?
 - (Symmetrical movement?)
- Wheeze
- Was this infant / child alert?

**Saturation
<90% give
oxygen**



* *NB very slow breathing or gasping may require BVM ventilation*

Without a pulse oximeter?

- **Central Cyanosis?** →
- **Grunting?** →
- **Head nodding / bobbing?** →
- **Severe lower chest indrawing** →
- **Fast breathing > 70b/min** →
- **AVPU <A or inability to drink + Respiratory distress** →

Absolute
indications for
oxygen in a
seriously ill
child before
proceeding to
complete
examination

- **Consider oxygen:**
 - Wheeze and inability to talk
 - Deep / acidotic breathing

Administering Oxygen?



Nasal Catheter / Nasal prong
~ 30 - 35% oxygen.

Use FG8 catheter

Start At 1-2 L/min aim at SPO₂
of 90 - 97%

You can increase the flow up to
4 L/min to achieve 45-55%
oxygen concentration.

Little risk – monitor for
abdominal distension when
using high flow rates

Newborn start at 0.5 L/min – maximum 2 L/min

Administering Oxygen?



Not recommended in children



Mask with reservoir bag,
80 - 90 % oxygen.
Needs 10-15 L/min oxygen
flow
Poorly tolerated by infants

Very severe respiratory distress – Other supportive measures

- Position
 - Propped up / forward
- Minimal handling / distress
- Assisted feeding / maintenance fluids
- Higher flow nasal catheter oxygen

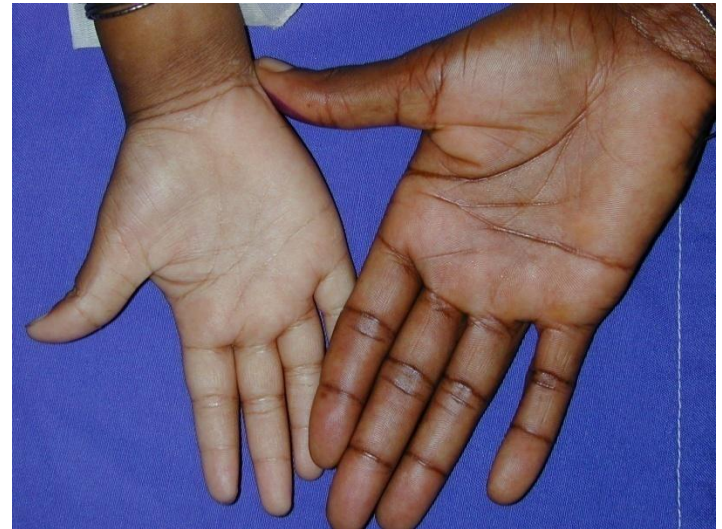
Improving circulation to prevent collapse:

The most common causes of circulatory failure in Africa?

- Dehydration



- Severe Anaemia



To make decisions on use of fluids and blood we need to know:

1. How severe is the circulatory problem?
- 2. Is the problem likely to be caused by diarrhoea?**
3. Is there severe malnutrition?
4. Is there severe anaemia?

Also note that trauma, burns, and anaphylaxis must be identified and that care may be different in a child with chronic heart disease etc

Rapid Assessment of Circulation –

If there are signs of life there is a pulse

- Large pulse (very fast/slow)?
- Peripheral pulse (present/weak)?
- Temperature gradient?
- Capillary Refilling Time?

- Sunken eyes / skin pinch
- Pallor?
- Severe wasting / oedema?

If monitors for assessing saturation, heart rate and blood pressure are available use them!

Diarrhoea with severely impaired circulation: Hypovolaemic Shock



All of the features:

- AVPU < A
- Weak / absent peripheral pulse
- Coldness of skin
- Cap Refill >3 secs
- Sunken eyes & skin pinch $\geq 2s$

20 mls/kg Ringer's Lactate over 15 mins

Severe anaemia, respiratory distress and impaired circulation



If there is severe pallor and:

- *Acidotic breathing*
- *Respiratory distress*

**10 mls/kg Packed Cells (or 20mls/kg Whole Blood)
start urgently, transfuse over 3-4 hours**

*Even if there is severely impaired circulation do not give bolus fluids, give maintenance fluids only **before** blood*

Severely impaired circulation, no diarrhoea, no severe anaemia and with or without severe malnutrition



If infant / child has **all of these:**

- AVPU < A
- Weak / absent peripheral pulse
- Coldness of skin
- Cap Refill >3 secs

20 mls/kg Ringer's Lactate slowly
(over 2 hours – fast boluses may do harm)
Use Ringers/5% Dextrose in severe malnutrition

Impaired circulation, no diarrhoea,
no severe anaemia and with or
without severe malnutrition

If infant / child has **some but not all of these:**

- AVPU < A
- Weak / absent peripheral pulse
- Coldness of skin
- Cap Refill >3 secs

Do not give bolus or extra fluids they cause harm – give only maintenance fluids / feeds

Fluid summary – no trauma etc

- Fast bolus of 20mls/kg Ringers in 15 minutes is **only used** in diarrhoea complicated by severely impaired circulation (shock)
- Severely impaired circulation in other febrile children or in severe malnutrition is treated with 20mls/kg Ringers **over 2 hours** (*Ringers/5% dextrose in SAM*)
- **Blood** is urgently required for severe anaemia with acidotic breathing / respiratory distress
- Even if signs suggest **impaired circulation (not severe)** in febrile illness just give maintenance fluids

Fluid Summary –No trauma

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Hypovolaemic Shock



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Severely impaired circulation, no diarrhoea, no severe anaemia and with or without severe malnutrition



20mls/kg Ringers over 2 hours (*Ringers/5% dextrose in SAM*)

Impaired circulation, no diarrhoea, no severe anaemia and with or without severe malnutrition



maintenance fluids

Disability

- Use AVPU to determine if dextrose required.

Questions?

Summary

- Get help
- Airway
 - Look, clear, position
- Breathing
 - Oxygen (Bronchodilators)
- Circulation
 - Correct use of fluids
 - Need for blood urgently