

Newborn Resuscitation



KEMRI | Wellcome Trust



University of Nairobi

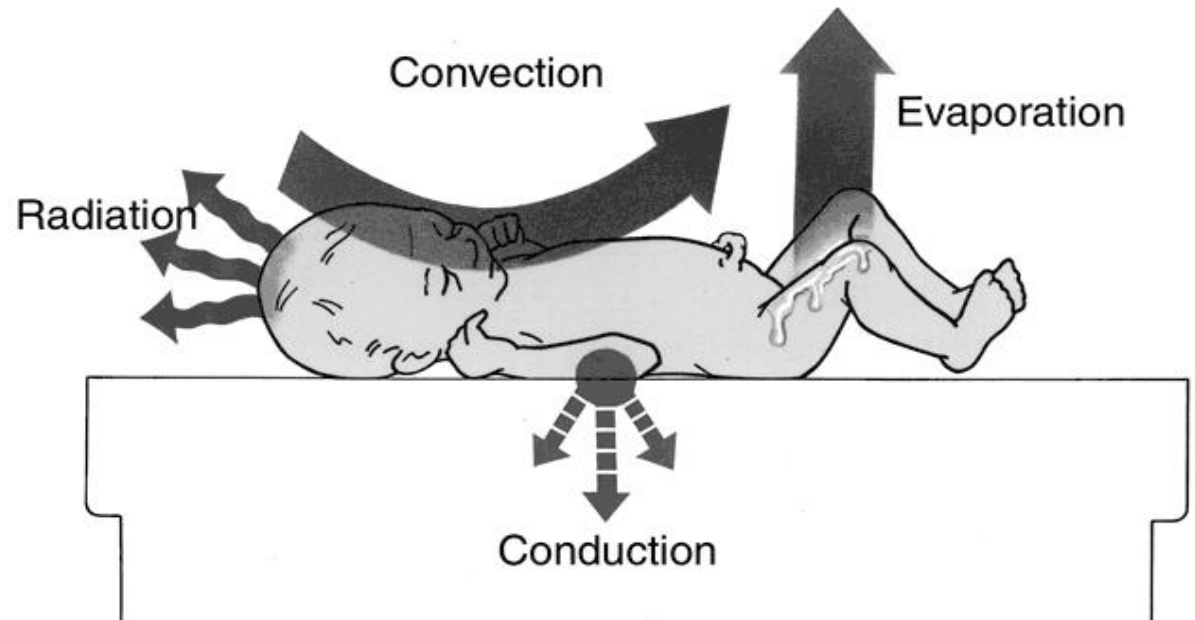


**KENYA
PAEDIATRIC
ASSOCIATION**

Objectives

- To outline the optimum approach to newborn resuscitation.
- To present global best practice guidelines.

Babies & warmth



- Newborn babies are fluid covered, they lose heat through:
 - **Evaporation**
 - Convection
 - Conduction
- If a baby gets cold it:
 - Switches off surfactant production
 - Increases energy (glucose) requirement
- So we must keep them warm and dry

Being prepared for newborn resuscitation

Needed for all resuscitations – ready in advance!

Hand hygiene

Warm environment - Overhead warmer

Warm dry towels

Firm stable surface & Lighting

Bag Valve Mask device (not damaged)

Wide bore sucker

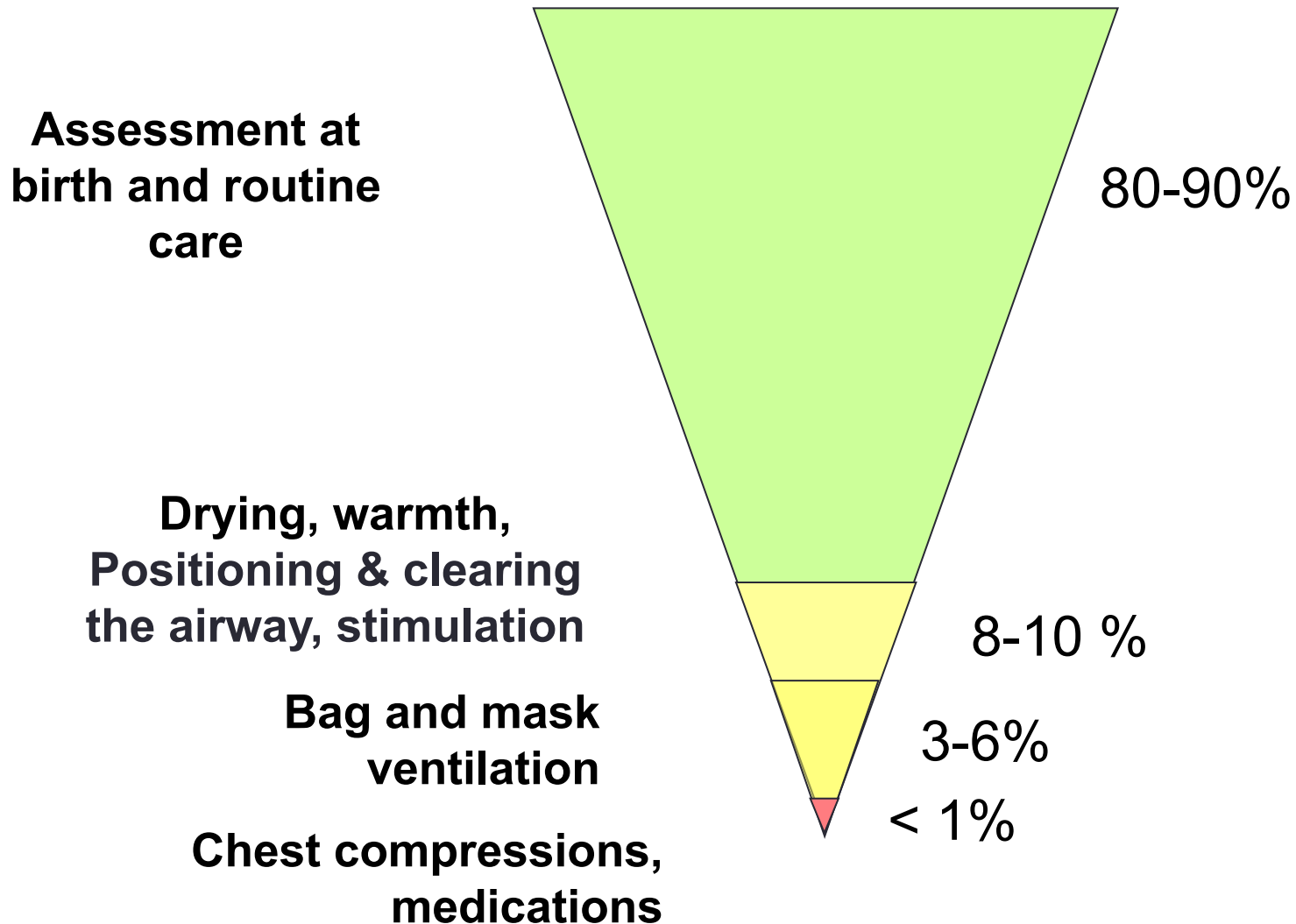
(Oxygen)- room air is adequate for immediate resuscitation

(Clock)

What are the main problems?



Interventions required by newborns at Birth



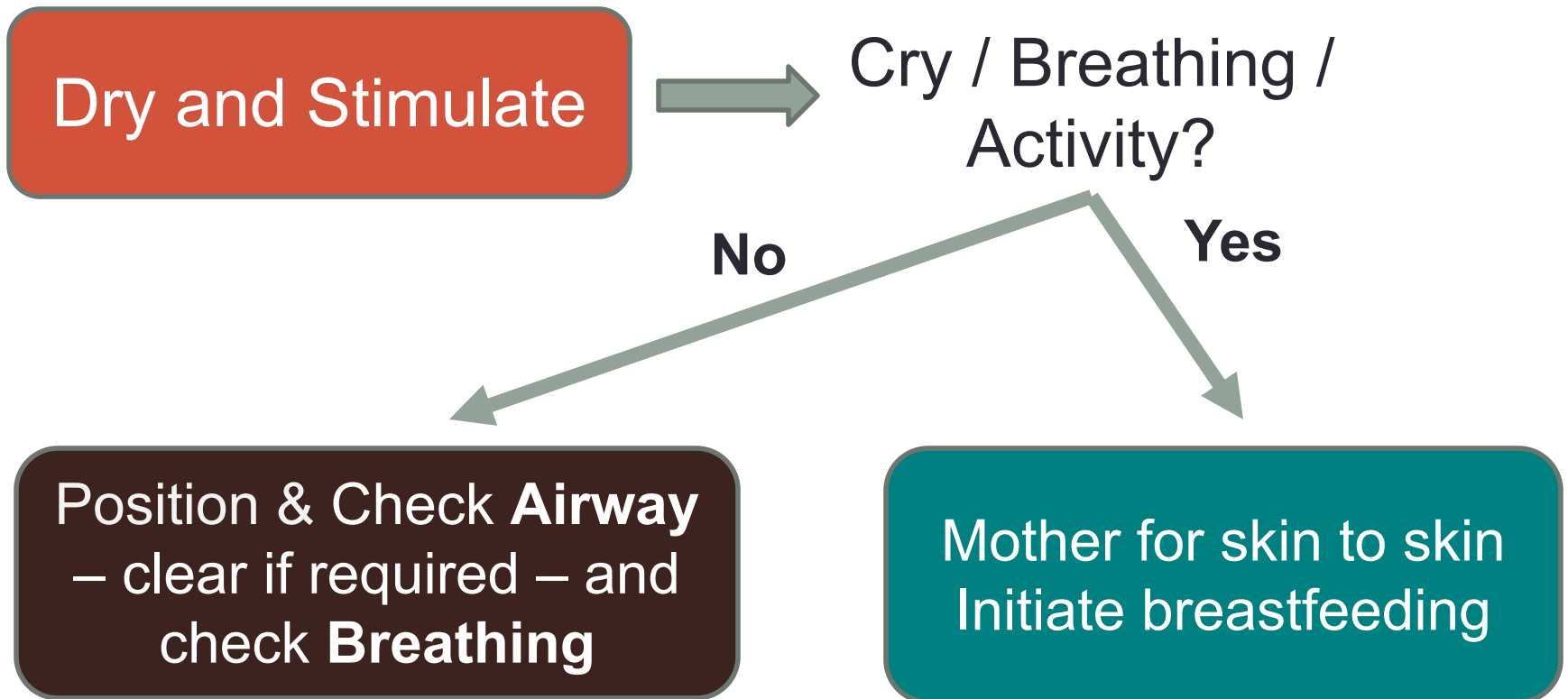
Newborn resuscitation – no meconium

Dry and Stimulate



Cry / Breathing /
Activity?

Newborn resuscitation – no meconium



Newborn resuscitation – no meconium

Position & Check **Airway**
– clear if required – and
check **Breathing**



**B Not
OK**

Call for help

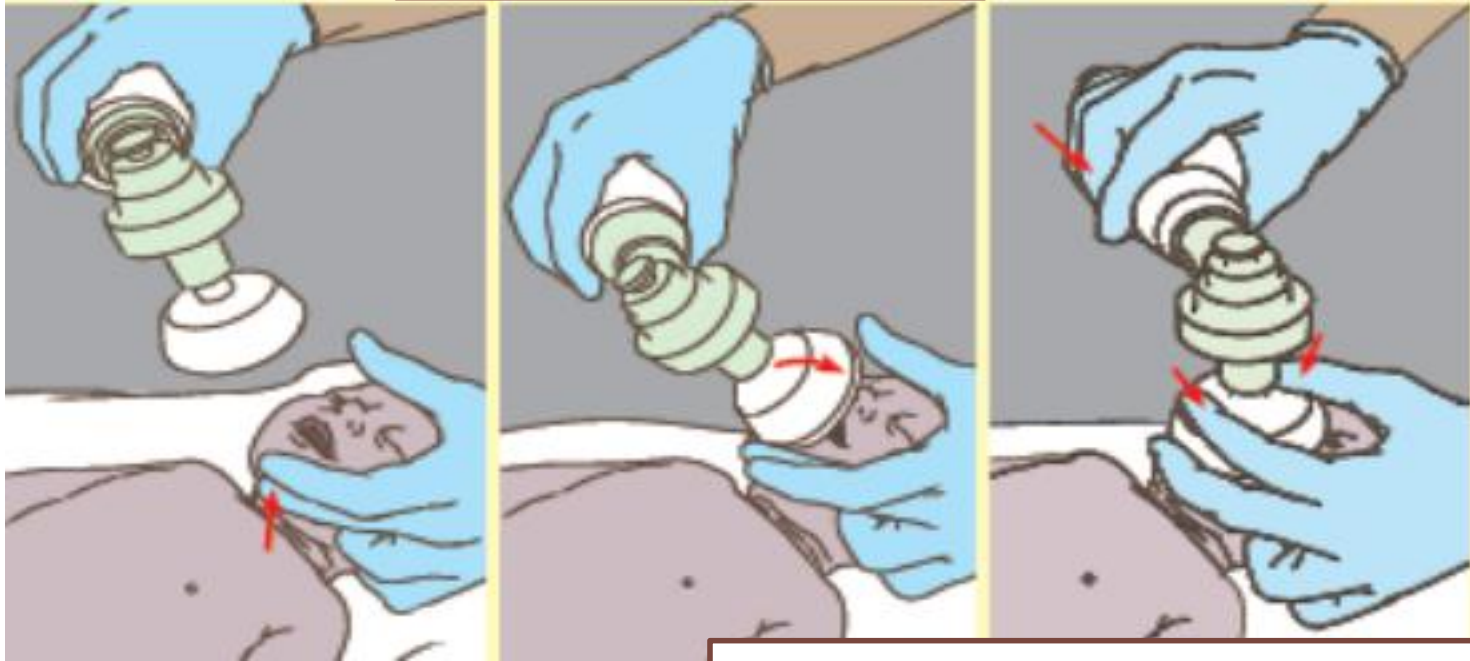
Initiate ventilation and continue ventilation at
30breaths/min for 60 seconds
(Person Two): Feel for HR

How to ventilate with bag and mask

Put head in neutral position

Position the mask on the face

Firm seal between the mask and the face



Squeeze bag to produce a gentle movement of the chest

Do not over-ventilate

Note 'C' & 'E' grip

Newborn resuscitation – no meconium

Initiate and continue ventilation at 30/min for 60 seconds
Making sure the chest rises

Feel for Heart Rate

Heart Rate > 60 / min

Continue ventilation for 1
minute

Reassess ABC

Newborn resuscitation – no meconium

Initiate and continue ventilation at 30/min for 60 seconds
Making sure chest rises

Feel for Heart Rate

Heart Rate < 60 / min

Give 1 ventilation
Then: Give 3 chest compressions
Give 3 compressions : 1 breath for
30 cycles in 1 minute

Reassess
ABC

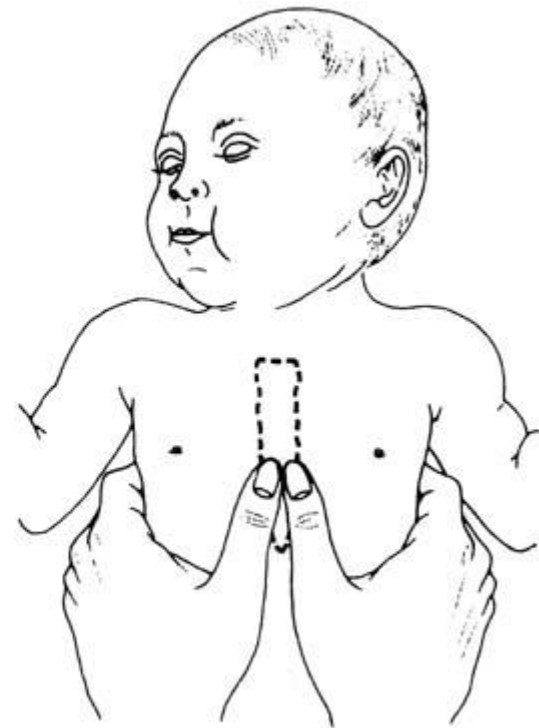
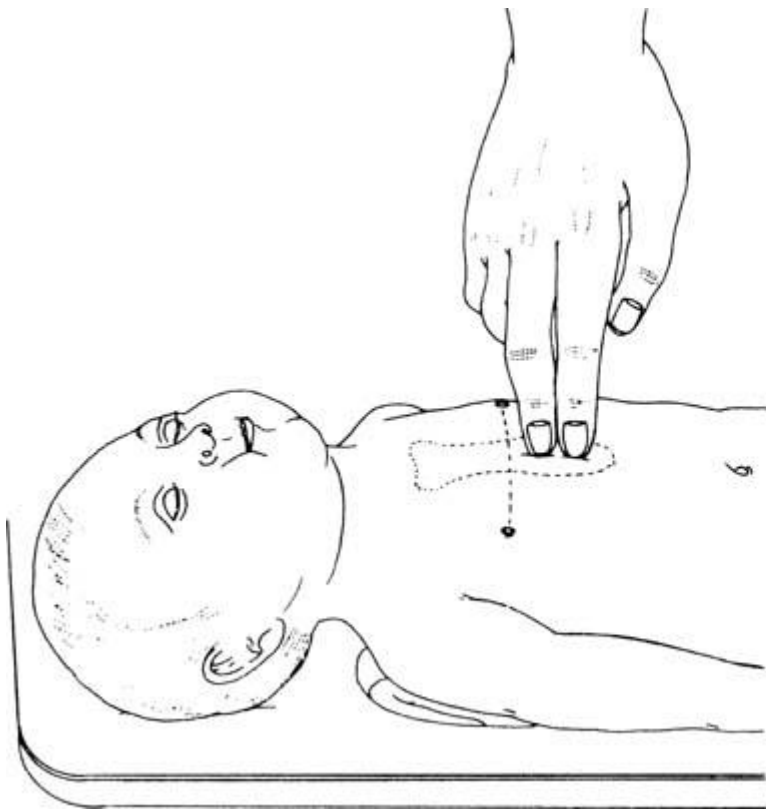
Alveoli before and after successful initiation of ventilation



The chest must rise with each BVM ventilation

Resuscitation – Step 4 - Circulation

- Compress over sternum 1 finger-breadth below nipple line, 1/3rd the depth of the chest



What about meconium?

- If the baby has **never taken a gasp / cried** then check the airway **before drying** and suction the oropharynx 'to where you can see' and **then dry the baby**
- If the baby has already cried then **do not suck** unless there is something in the airway
- Routine suction of the lower airway is not recommended
- If there is **no meconium** then the first action is **to dry the baby**

Oxygen during resuscitation

- Why oxygen is not needed in the first few minutes?
- Immediate resuscitation with oxygen can cause harm.
 - *About 1/4 of resuscitated babies may need oxygen after 4-5 minutes of resuscitation.*
- Oxygen blenders should ideally be used
- Titrate to achieve correct saturations for healthy term babies and pre-terms
- Priority is **ventilation** – do not stop resuscitation to look for oxygen.

Drugs during New born Resuscitation

- **Drugs that are not recommended**
 - Sodium bicarbonate / aminophylline / hydrocortisone / 50% dextrose!
- Where a 3rd helper is available, adrenaline may have a role during CPR (make sure CPR is effective)
 - Adrenaline dose is 0.1-0.3ml/kg given via central IV line

For the hospital providing advanced care -
Laryngoscope, ET tubes (sizes 2.0 to 4.0), Scissors and tape
Drugs-Adrenaline, IVF (Volume),

Post-resuscitation care

- Supplemental oxygen (based on adequacy of breathing)
- Check/communicate need for admission
- Appropriate feeding
- Vitamin K and TEO
- Appropriate Cord care with chlorhexidine
- PITC for HIV exposure

QUESTIONS?

Summary

- Be Prepared
- Dry and keep the newborn warm
- Correct management of Airway and Breathing will save most babies (***Make sure the chest moves***)