PREWAVED;- Birth Asphyxia bundle. Airway Management, and Ventilation

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MINISTRY OF HEALTH

BIRTH ASPHYXIA CARE BUNDLE

A practical bundle for safe birth asphyxia care.

THE WPREWAVED

WARMTH

03

- Dry the baby with sterile linen immediately after birth
- Keep the resuscitation area warm: 36.5°C-37.5°C
- Switch on the radiant warmer before delivery
- Keep the resuscitation kit within easy reach

Every baby deserves a safe start

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THE APREWAVED

AIRWAY

04

- Prepare suction equipment in the delivery room
- Ensure a functional oxygen source and pulse oximeter are available
- Correctly position the baby
- Connect oxygen to the resuscitation bag when needed

Every baby deserves a safe start

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THE VPREWAVED VENTILATE

05

- Start effective bag-and-mask ventilation promptly
- Follow the HBB+ / neonatal resuscitation algorithm
- Ventilate by endotracheal tube where possible at tertiary facilities
- Initiate delivery-room CPAP if there is respiratory distress or SpO, below 90%

Every baby deserves a safe start

INTERVENTIONS DONE TO REDUCE BIRTHASPHYXIA

- Evidence shows that training in neonatal resuscitation reduces deaths in newborns with intrapartum asphyxia by 30%
- Immediate basic care reduces intrapartum deaths by 10%.
- A study from China reported that the incidence of asphyxia reduced from 6.32% to 1.42% and mortality decreased from 0.76‰ to 0.19‰after a well-coordinated NRP programme over a period of 15 years .*Ariff S, Lee AC, Lawn J, et al. Global Burden,*

TRANSITION to extra-uterine life

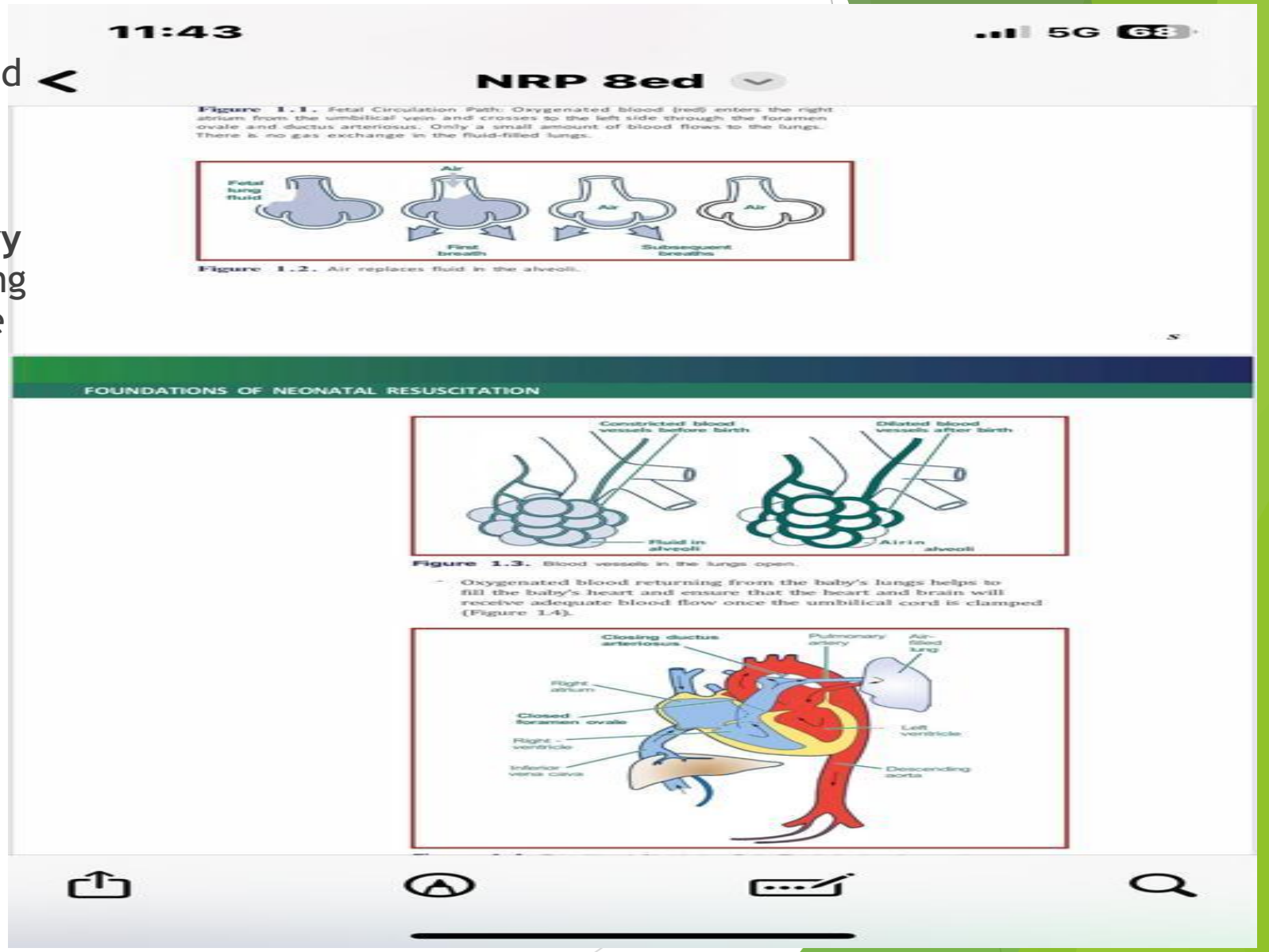
Fetal lungs **are filled with fluid** and not used for breathing, the body redirects blood via three primary shunts.

Ductus Arteriosus: connects the **pulmonary artery to the aorta**. It diverts the remaining blood away from the lungs directly into the systemic circulation

In utero there is high pulmonary vascular pressure.

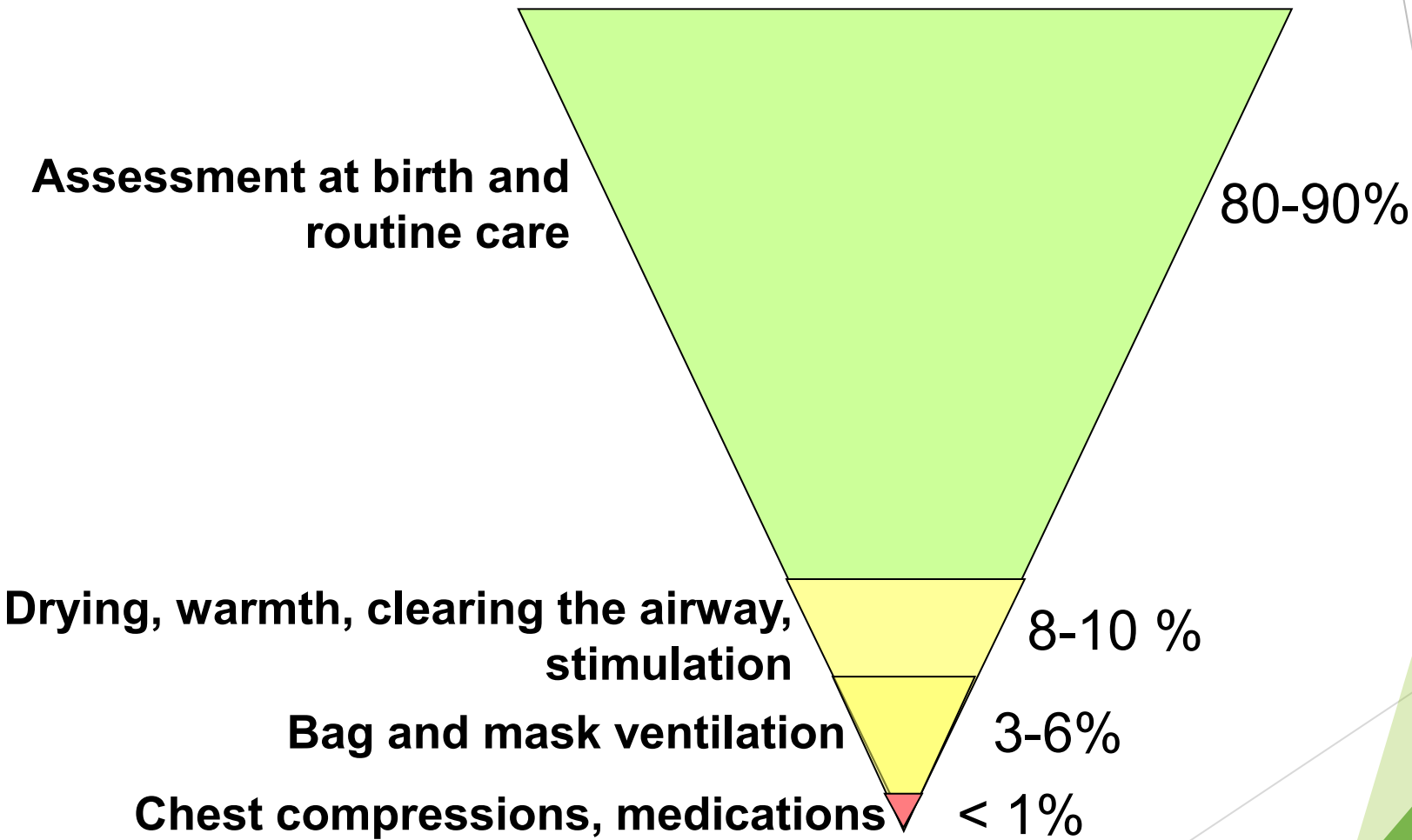
The First Breath:

- As the baby breathes, the lungs expand.
- This forces fluid out.
- Drastically dropping pulmonary vascular resistance (pressure in the lungs).
- Blood can now flow easily into the lungs to pick up oxygen.



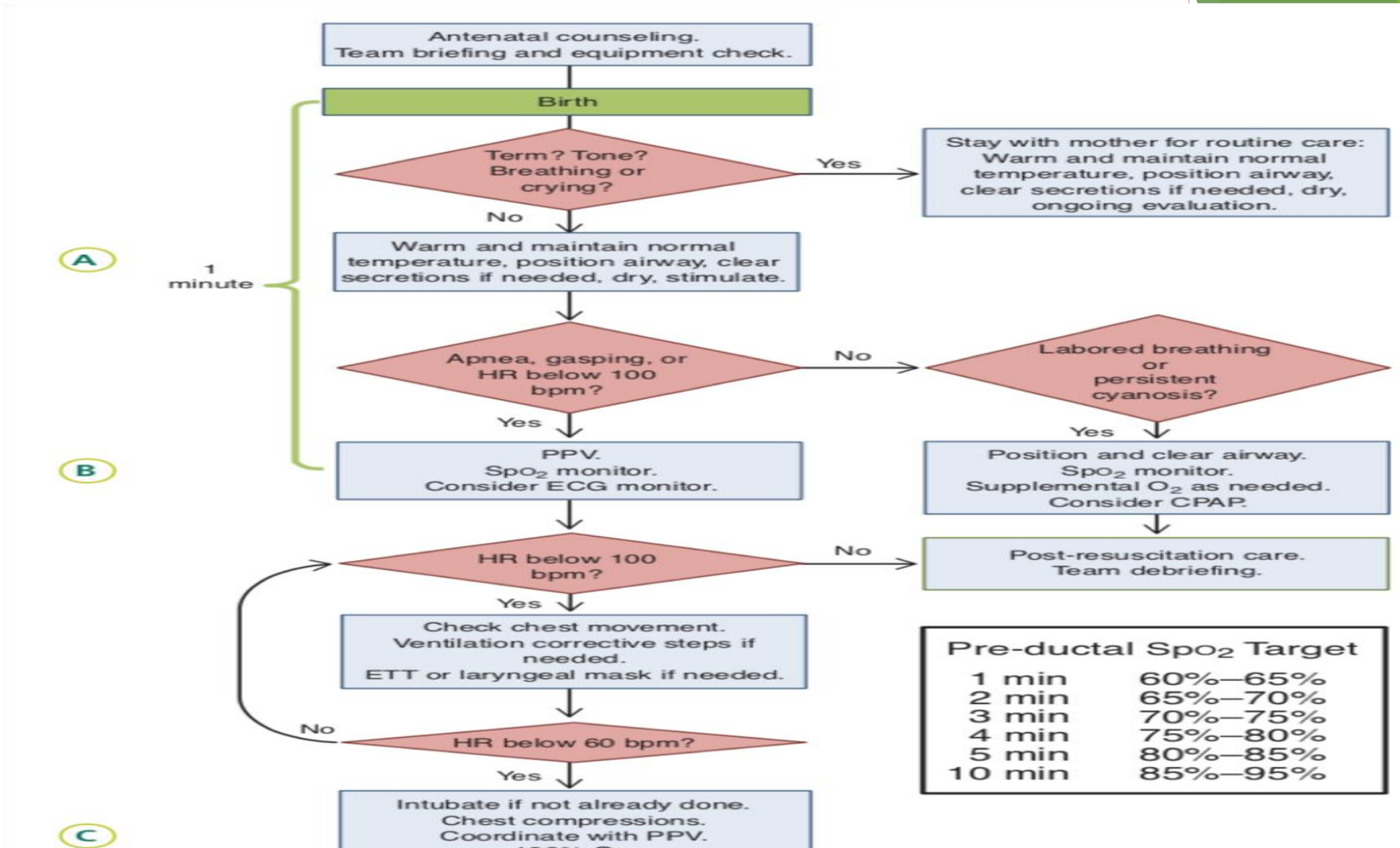
Do we have a designated skilled person for Neonatal resuscitation at every delivery ?

Interventions needed at birth



CARDINAL QUESTIONS AT BIRTH ?

- **What's the color?,**
- **Is the baby breathing?**
- **What is the tone?**
- **Whats the Gestational Age. ?**
- Other?, color of liquor, **meconium?** Maternalillness before delivery, bleeding before deliver?


Antenatal counseling.
Team briefing and equipment check.
Birth
Term? Tone? Breathing or crying?
Yes
Stay with mother for routine care: Warm and maintain normal temperature, position airway, clear secretions if needed, dry, ongoing evaluation.
No
A
1 minute
Warm and maintain normal temperature, position airway, clear secretions if needed, dry, stimulate.
Apnea, gasping, or HR below 100 bpm?
No
Labored breathing or persistent cyanosis?
Yes
B
PPV.
SpO2 monitor.
Consider ECG monitor.
Yes
Position and clear airway.
SpO2 monitor.
Supplemental O2 as needed.
Consider CPAP.
HR below 100 bpm?
No
Post-resuscitation care.
Team debriefing.
Yes
Check chest movement.
Ventilation corrective steps if needed.
ETT or laryngeal mask if needed.
No
HR below 60 bpm?
Yes
C
Intubate if not already done.
Chest compressions.
Coordinate with PPV.
Pre-ductal SpO2 Target
1 min 60%–65%
2 min 65%–70%
3 min 70%–75%
4 min 75%–80%
5 min 80%–85%
10 min 85%–95%

Interventions

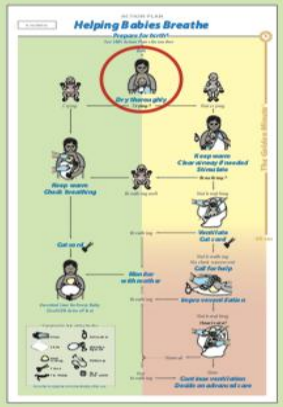
- **Warmth;**
  - Immediately after birth, a vigorous term newborn may be placed on the mother's chest or abdomen
  - Warmth will be maintained by drying the newborn's skin and maintaining ***direct skin-to-skin contact*** with the mother
  - **A non vigorous newborn** should be placed on a ***pre-warmed radiant heat*** source, the skin dried, and the wet linen removed , placed under a radiant warmer.

Interventions

- **Suction;**
  - Gentle oral and nasal suction should be ***reserved for babies who are having difficulty breathing***, who have secretions obstructing their airway, or who require positive-pressure ventilation.

- **Stimulation;**
  - The process of positioning and drying the newborn often provides sufficient stimulation to initiate spontaneous respirations.
  - If the newborn is not breathing, brief additional stimulation by rubbing the newborn's back, trunk, or extremities may be helpful.

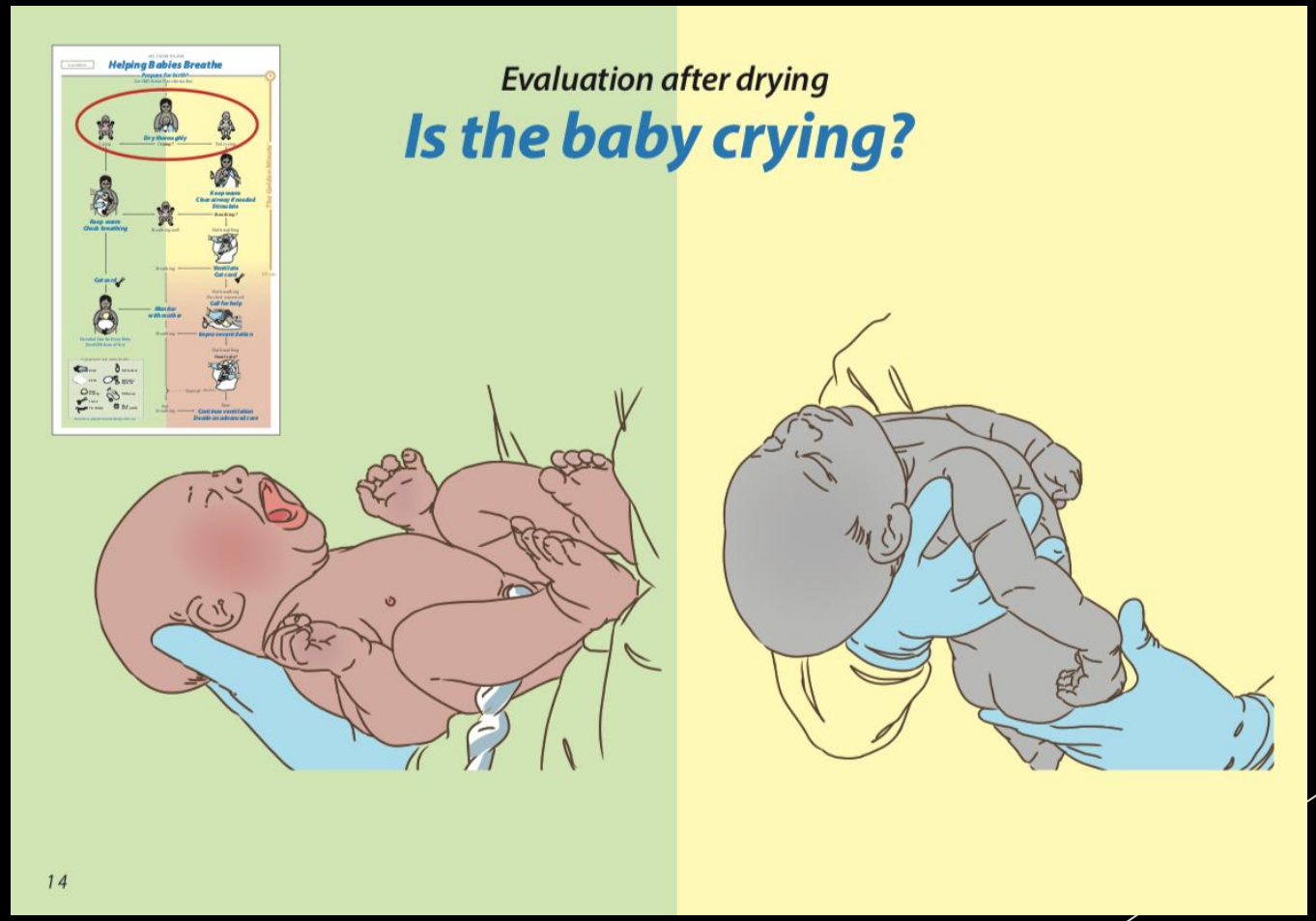
Stimulation, drying



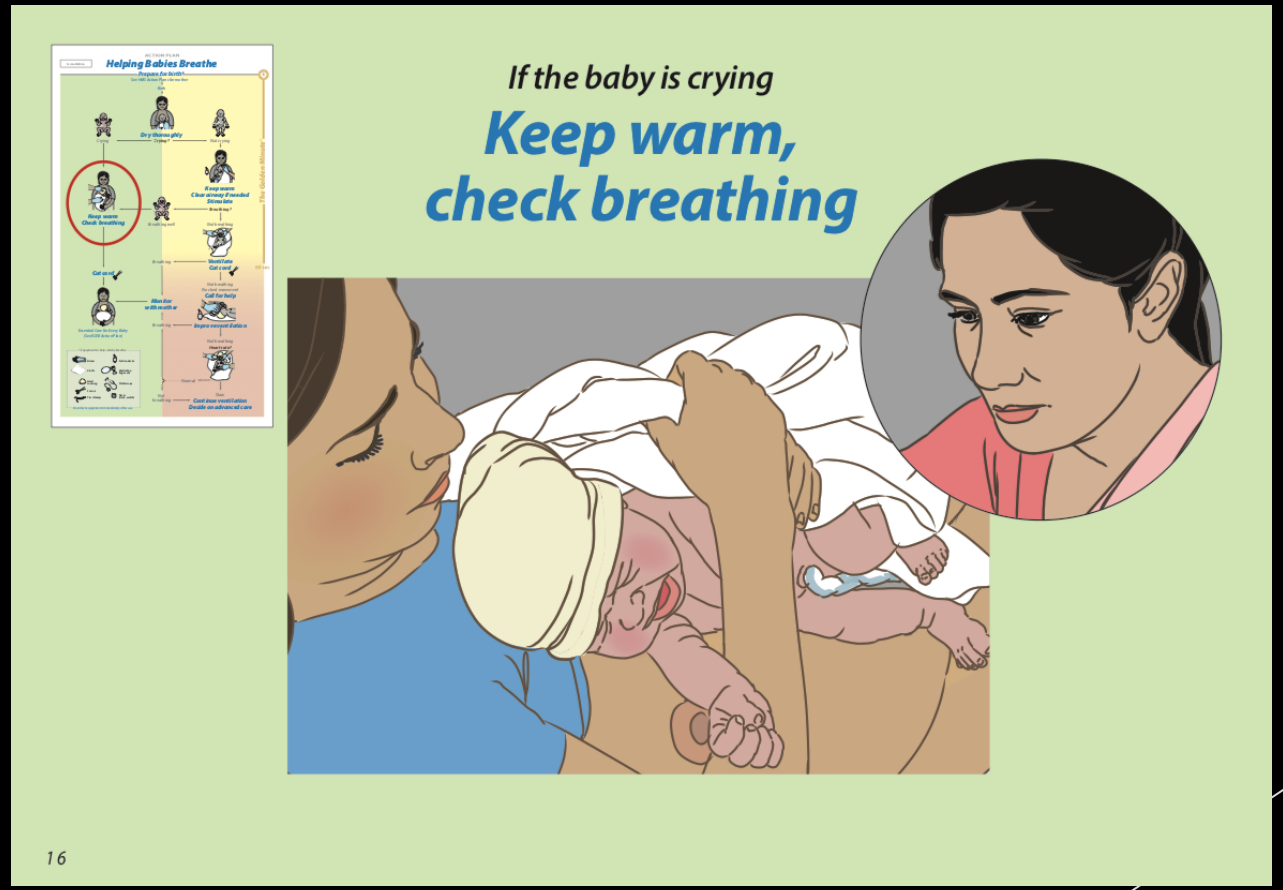
At birth

Dry thoroughly

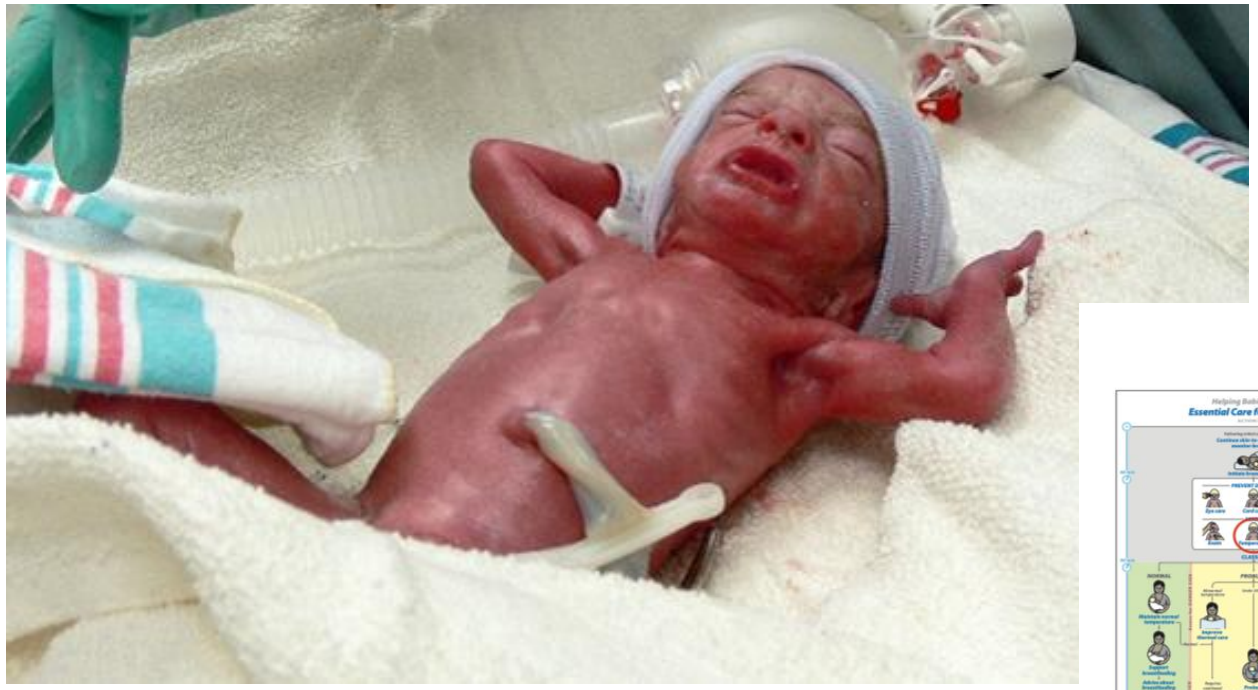
Assessing the breathing

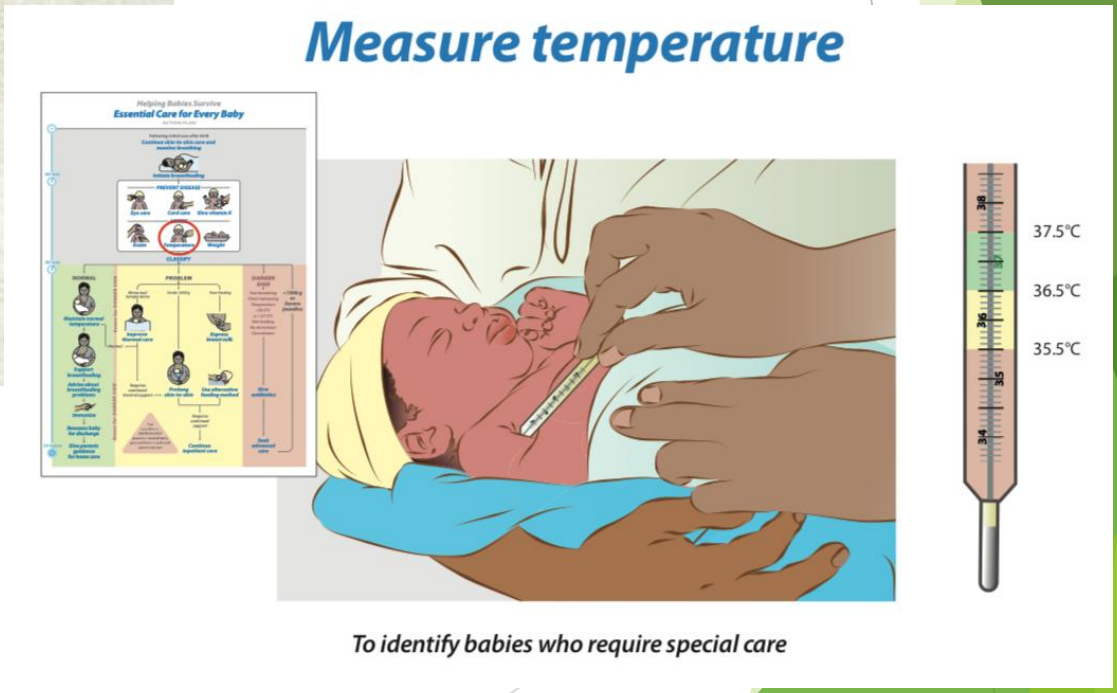


Maintain normothermia, observe breathing and colour

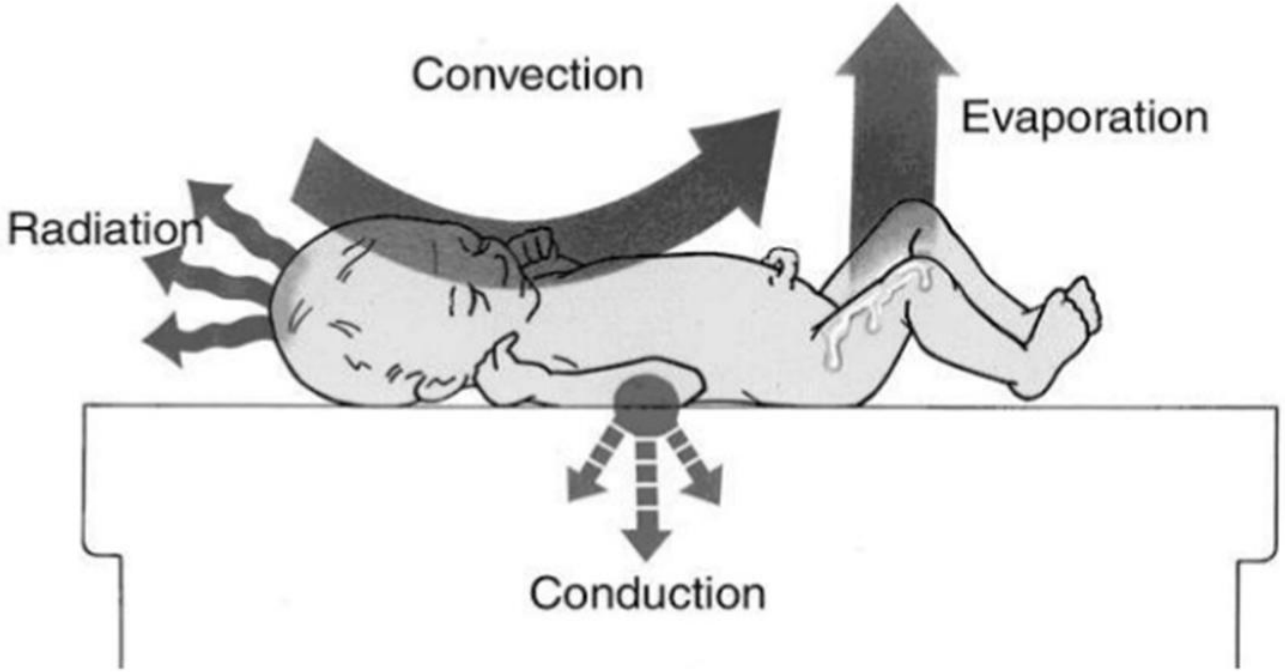


Thermal care & Warmth of the newborn in resuscitation & Transfer



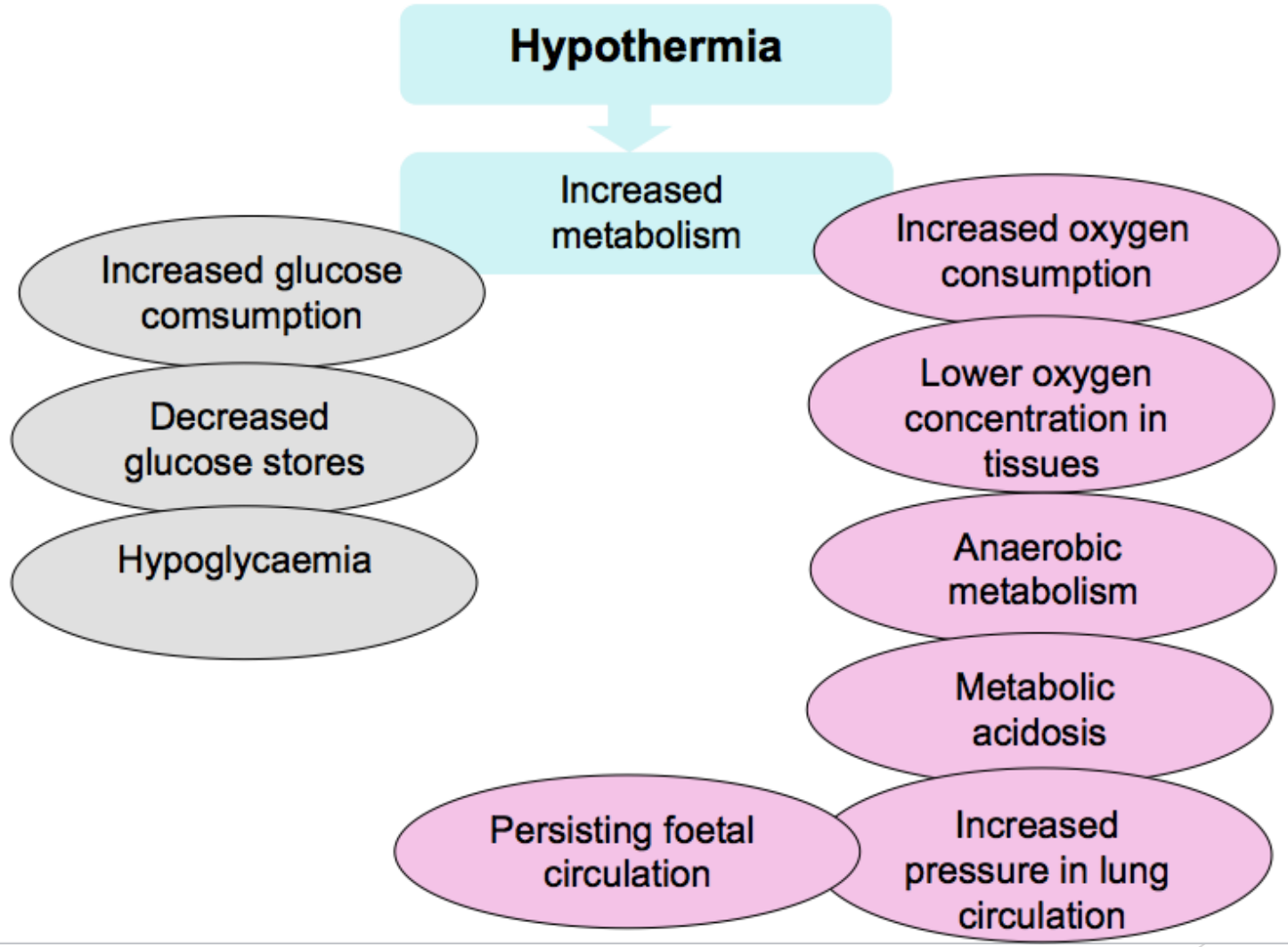


Modes of heat loss



- Always prepare warm sterile clothes to receive the baby.
- Have a warmer on before delivery of the baby.
- Do not place babies on cold surfaces for resuscitation.

WHY IS HYPOTHERMIA A PROBLEM?



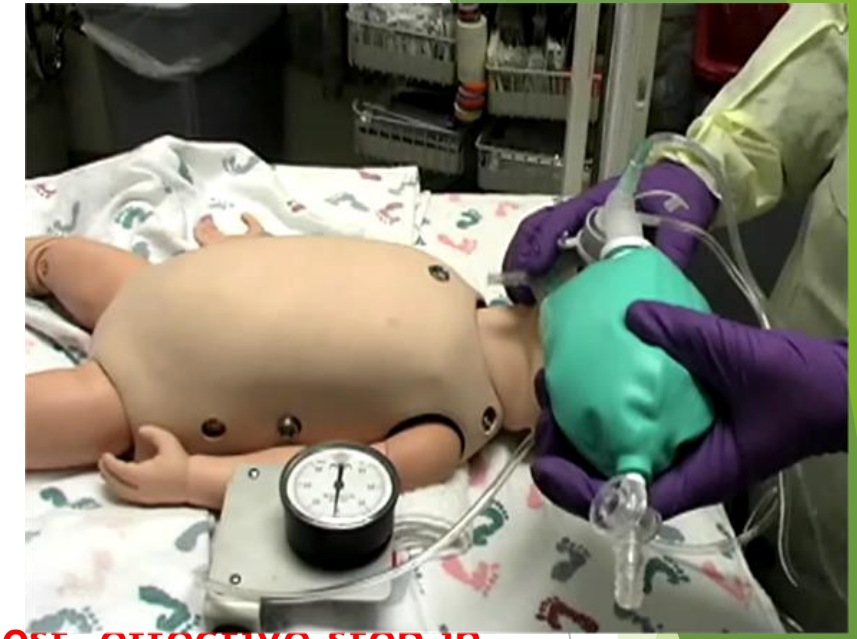
HOW TO KNOW IF A BABY NEEDS HELP?

- Unresponsive,
- Not breathing
- Only gasping
- Have a slow or absent heartbeat,
- Blue/pale (cyanotic) skin

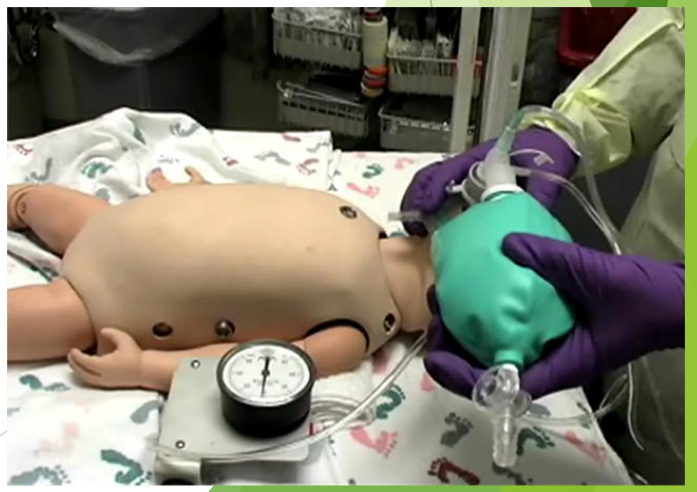
Positive Pressure ventilation

- Any newborn infant who does not initiate regular respiration, or who fails to respond
- **Do initial measures of drying, wrapping, and gentle stimulation,**

- **Should be given positive-pressure support. IMMEDIATELY; Noninvasively using a face mask and ambubag, or pressure-generating device**



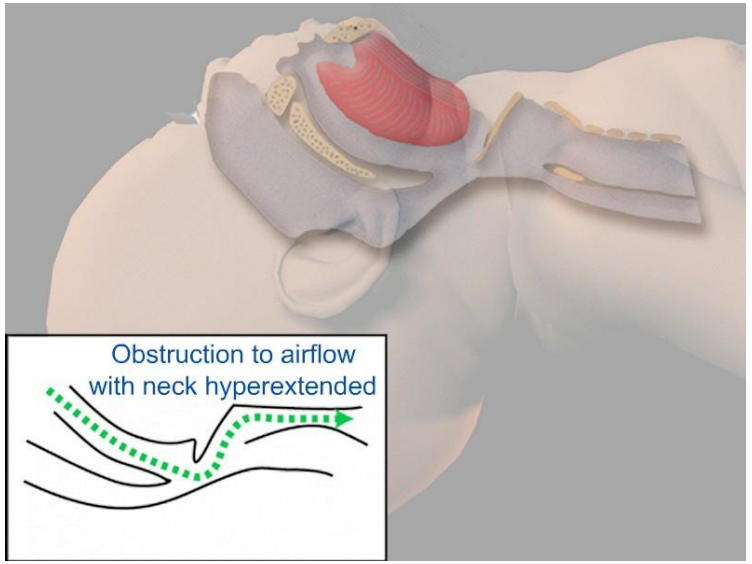
single most important and most effective step in cardiopulmonary resuscitation of the compromised infant

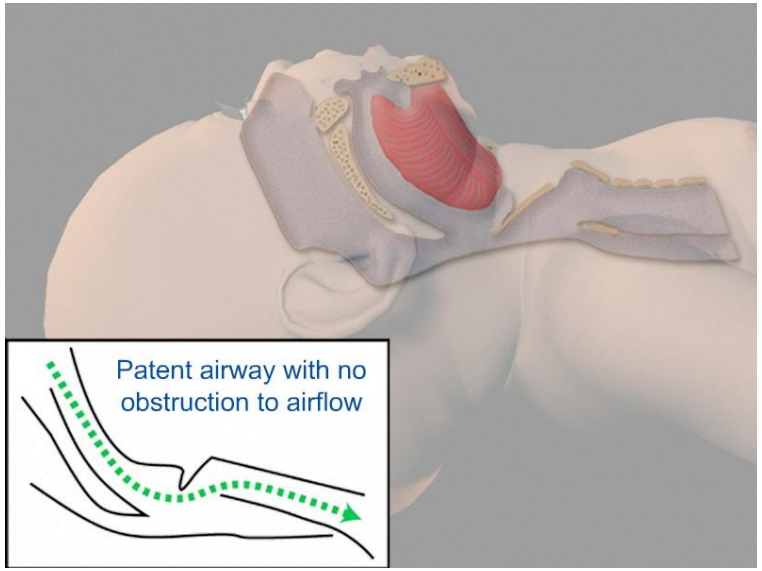


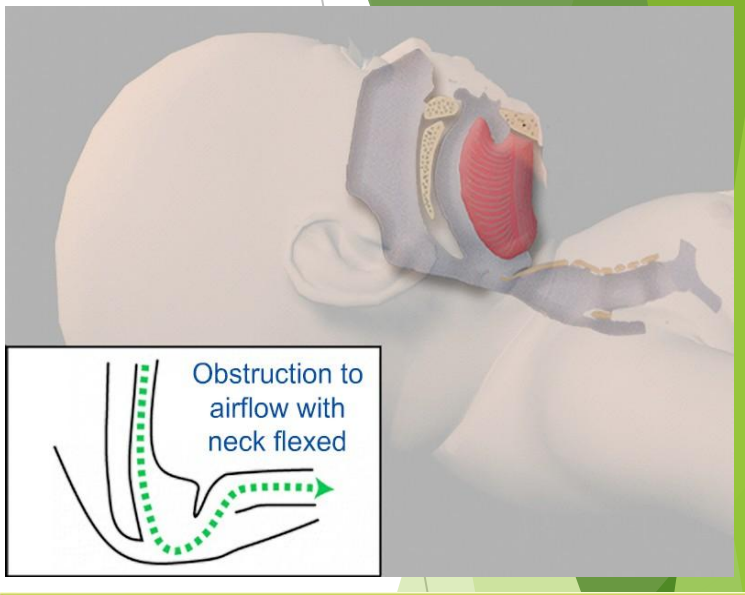
Interventions

- **Position;**
  - The infant should be ***placed supine with the head and neck in a neutral*** or slightly extended position “sniffing” position.
  - This position opens the baby’s airway, aligns the posterior pharynx and trachea, and allows unrestricted air movement

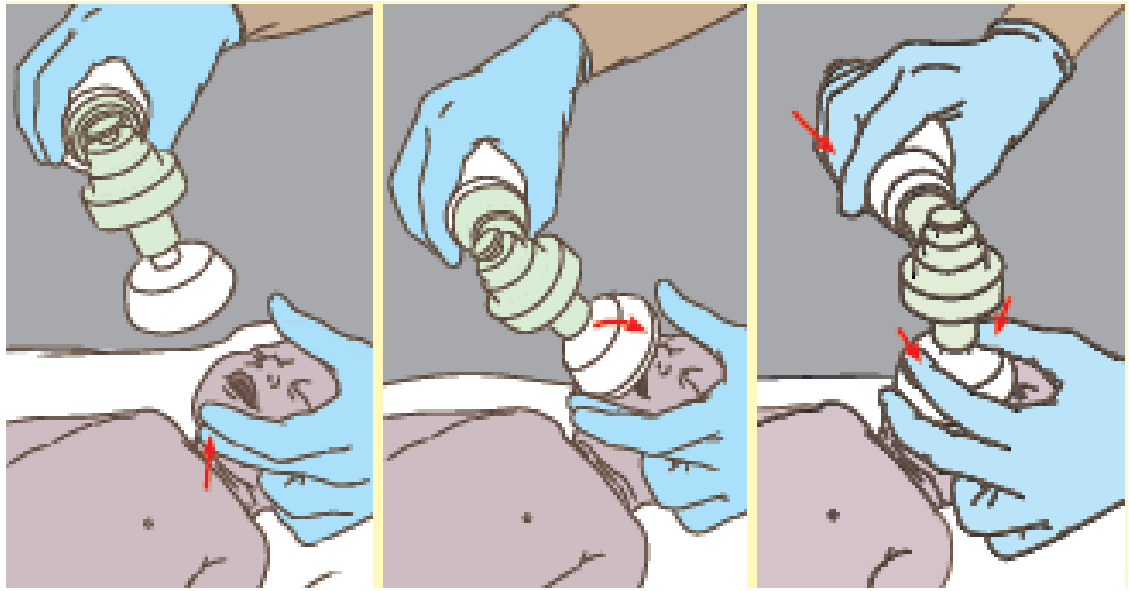
Opening the Airway







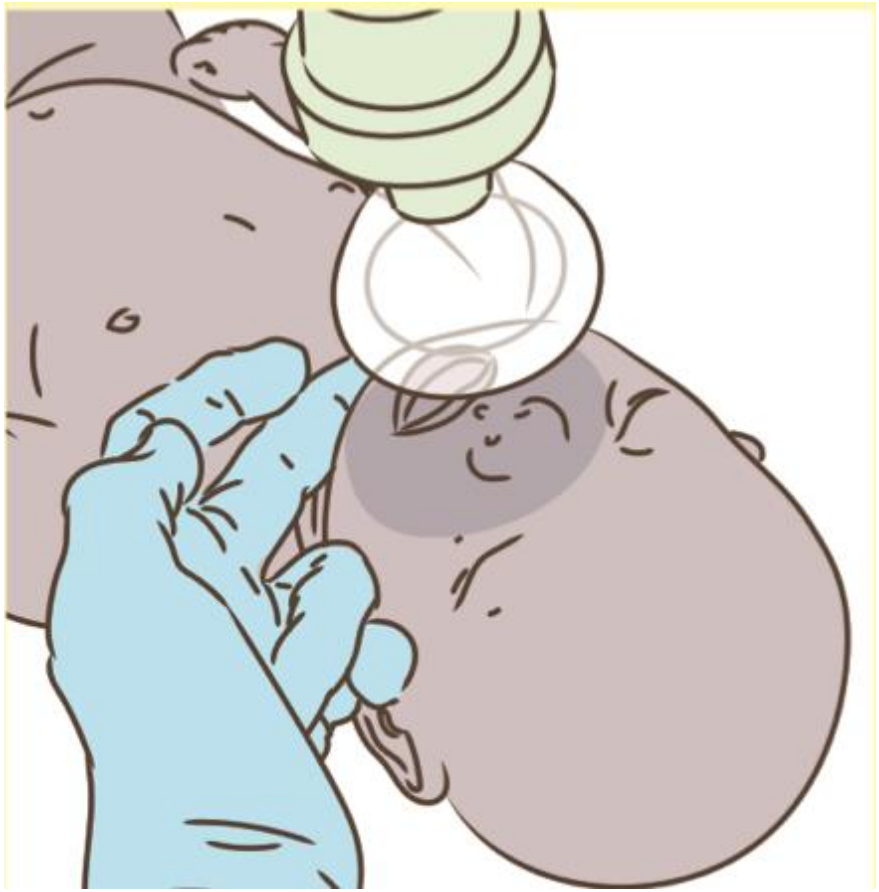
If the baby is not breathing



- Call for help
- Position the head slightly extended (neutral position)
- Position the mask on the face
- Make a firm seal between the mask and the face while squeezing the bag to produce a gentle movement of the chest
- Give 40-60 breaths per minute.
- **Rhythm Breathe , Two, three, squeeze as you say breathe, and release as you say two , three**
- Second person to assess heart rate

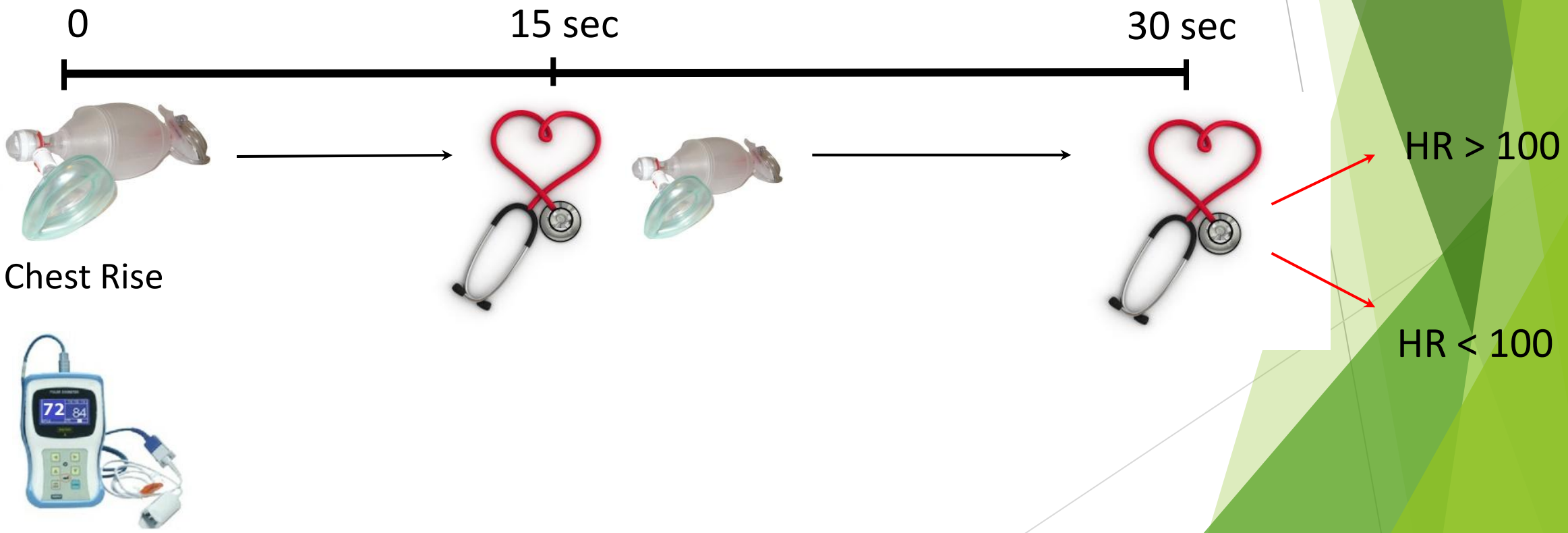
Positive pressure Ventilation

Assessing the response of ventilation



Adequate chest rise

Checking Heart Rate after Starting PPV



Oxygen and pressure

- How much oxygen?
  - >35 weeks gestation begin with room air
  - <35 weeks begin with oxygen connected to the Ambubag a minimum of 5litres per minute
- How much pressure?
  - PIP at 10-25 cm H2O, green zone) if labe
  - Too much pressure can rupture cause trauma

Important Points in the Neonatal Resuscitation Flow Diagram

- **The *most* important and effective action in neonatal resuscitation is to ventilate the baby's lungs**
- Effective positive-pressure ventilation results in rapid improvement of **heart rate TO ABOVE 100BPM**
- **If heart rate does not increase-**
  - **MR SOPA**

If heart rate does not increase; USE MR SOPA

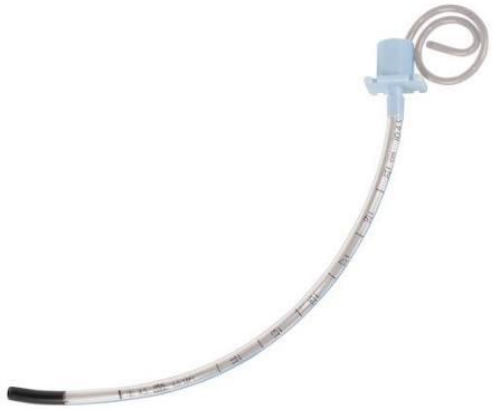
- **M - Mask Adjustment:**
  - ✓ Reapply the mask,
  - ✓ ensure the correct size, and
  - ✓ make a tight seal over the baby's mouth and nose.

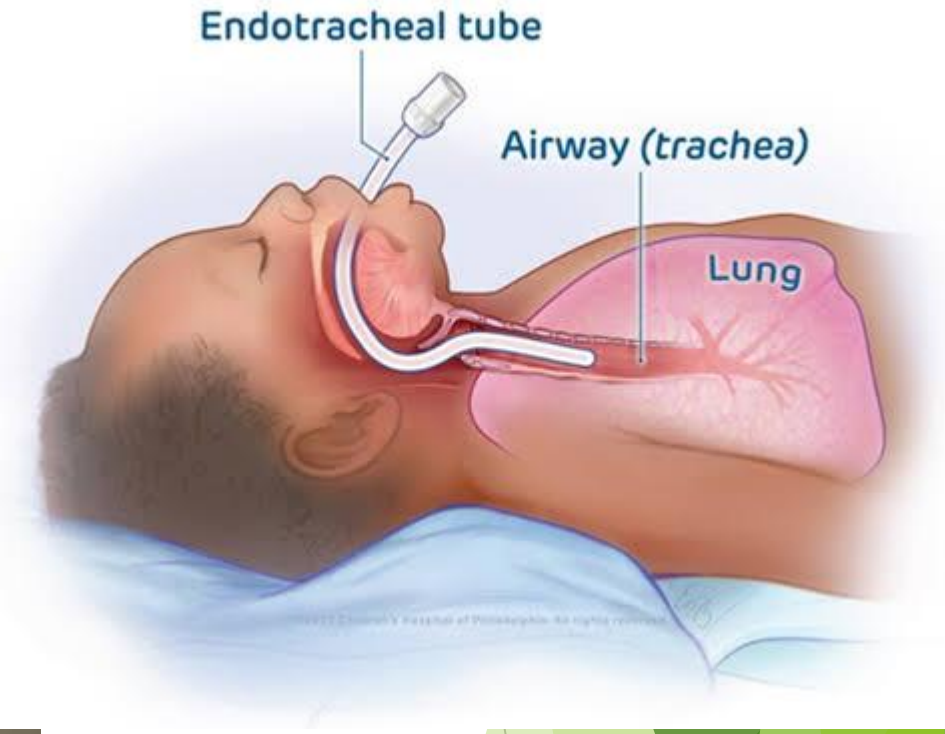
- **R - Reposition the Airway:**
  - ✓ Adjust the baby's head into a neutral
  - ✓ or "sniffing" position to open the airway.

If heart rate does not increase; USE MR SOPA

- **S - Suction Mouth and Nose:**
  - ✓ Clear secretions from the airway (mouth first, then nose).
- **O - Open the Mouth:**
  - ✓ Gently lift the jaw forward and slightly open the mouth.
- **P - Pressure Increase:**
  - ✓ Increase the peak inspiratory pressure (PIP)
  - ✓ to achieve adequate chest rise.
- **A - Alternative Airway:**
  - ✓ Insert a laryngeal mask airway (LMA) or endotracheal tube

ADJUNCTIVE AIRWAY





Take home

Be ready at all times to resuscitate

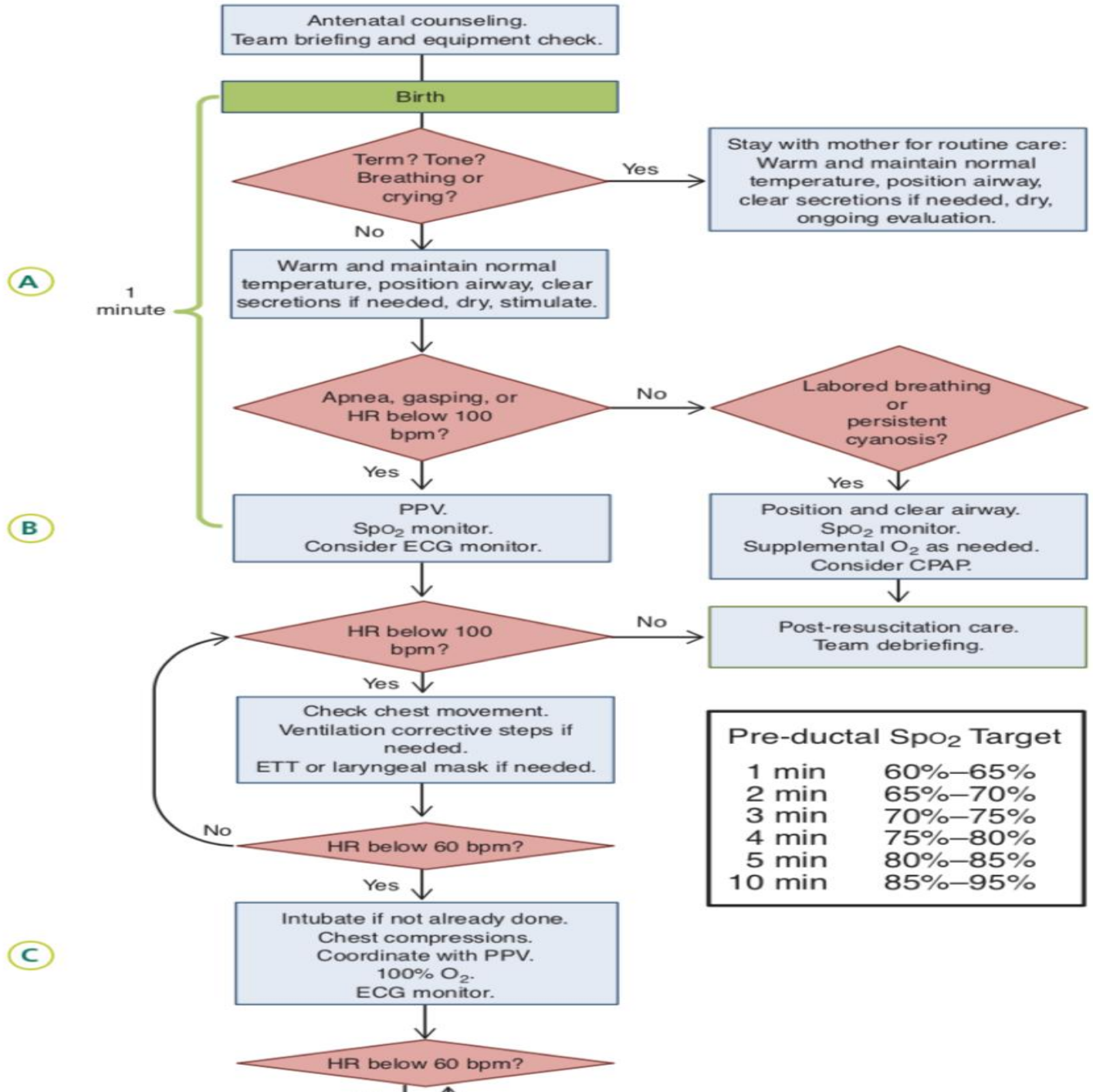
VENTILATION IS THE MOST EFFECTIVE , how
must be done by a skilled personnel, train
to retain skills.

Provide warmth at all times, distress , hypo
may arise and Apneas if no warmth

Always recheck MR SOPA ,

Please DONOT Rush to do chest compressio
gIVE DRUGS LIKE ADRENALINE AS LONG AS
Heart rate is above 60 BPM, continue to ve

Have an assistant to aid with continuous as



THANK YOU