

Prehospital Pediatric Care Course

Newborn Resuscitation

Lesson 7

Included in this lesson are:

- Overview of Newborn Resuscitation
- Urgent Maternal History
- Step by step routine care for the newborn
 - Care Prior to Delivery
 - Care Following Delivery
- Meconium presentation
- Case Scenario Review
- Lab Skill Practice
- Simulations

Urgent Maternal History

- Is the baby more than four weeks early?
- If the water has broken, was the fluid brownish or greenish in color?
- Are multiple births expected?
- Has the mother used any narcotic drugs recently?

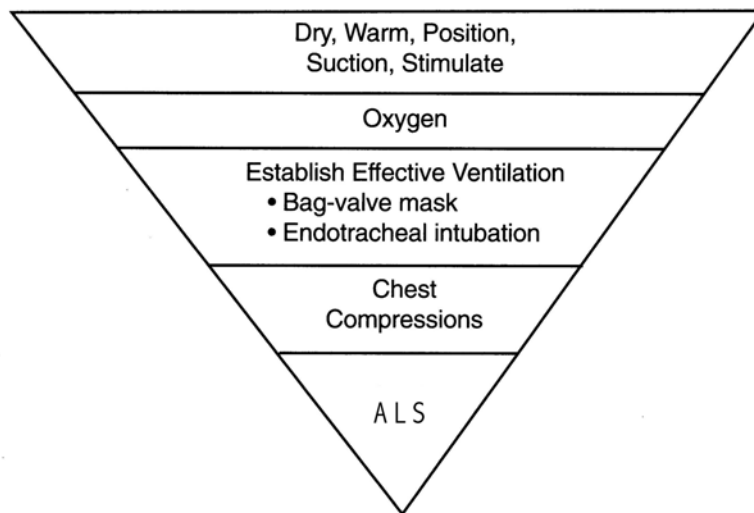
Care Prior to Delivery

As the head emerges from the birth canal:

- Check for umbilical cord wrapped around the neck.
- Attempt to unwrap it from around the neck.
- Clamp in two places and cut if unable to unwrap the cord.

- Suction the mouth with a bulb syringe, 2-3 times.
- Follow by suctioning the nose.

Inverted Pyramid of Newborn Resuscitation



- 1) Dry and warm
- 2) Position and suction
- 3) Gently stimulate
- 4) Supplemental oxygen
- 5) Assist ventilations
- 6) CPR
- 7) ALS intervention

Care Following Delivery

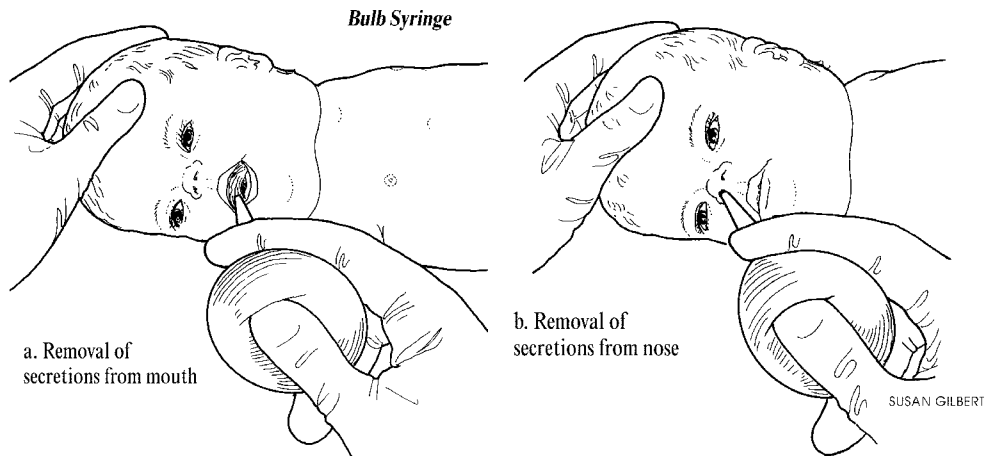
Dry and warm the baby quickly to prevent heat loss.

- Work quickly, but efficiently.
- Use gentle rubbing to dry.
- Dry thoroughly.
- Discard towels used for drying and wrap in a clean, dry towel or blanket.

- Prevent drafts.
- Warm the environment whenever possible.

Position and Suction

- Position the airway with the head slightly lower than the body.
 - Elevate the shoulders with a 1” pad.
 - Turn the infant’s head to the side.
 - Suction the mouth first with bulb syringe inserted 1 - 1.5 inch(es). Do this 2-3 times.
 - Follow by suctioning the nose with bulb syringe inserted 0.5 inch into the nostril.
- If the nose is suctioned before the mouth, the newborn may be stimulated to breathe in, and may inhale any fluid or secretions in the mouth.



What About the Cord?

- The first priorities are to dry, warm, suction and position the baby.
- The cord should be tightly clamped or tied in two places and cut between.
- Place first clamp or tie 8-10" from the baby.
- Place second clamp or tie 4 finger widths from the baby.
- Cut between when pulsations cease.

Gently Stimulate

Three acceptable methods:

Flick *one* finger against the newborn's heel.

Lightly slap the sole of the newborn's foot.

Gently rub the lower back.

If needed, repeat for 10-15 seconds only.

Never hold the baby upside down, slap the buttocks, squeeze, shake or immerse in hot or cold water.

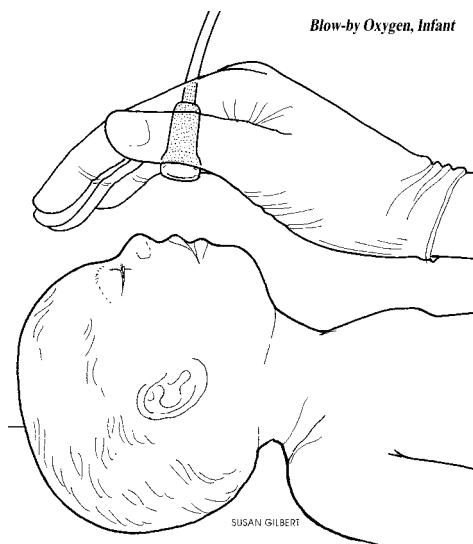
Provide Supplemental Oxygen

After gentle stimulation, assess the baby:

If breathing without assistance, but the baby has blue skin tones to the chest, abdomen and lips, provide supplemental oxygen.

Use oxygen tubing with liter flow at 6 lpm and place 0.5 inch from the newborn's nose.

Closely monitor breathing and check pulse.



When the newborn who is receiving supplemental oxygen:
remains blue after 30-60 seconds of supplemental oxygen

or

has a pulse less than 100/min.

Begin assisted ventilations at a rate of 60/min.

Assist Ventilations

If, after gentle stimulation the newborn

is not breathing

or

has gasping respirations:

Assist ventilations at a rate of 60/min.

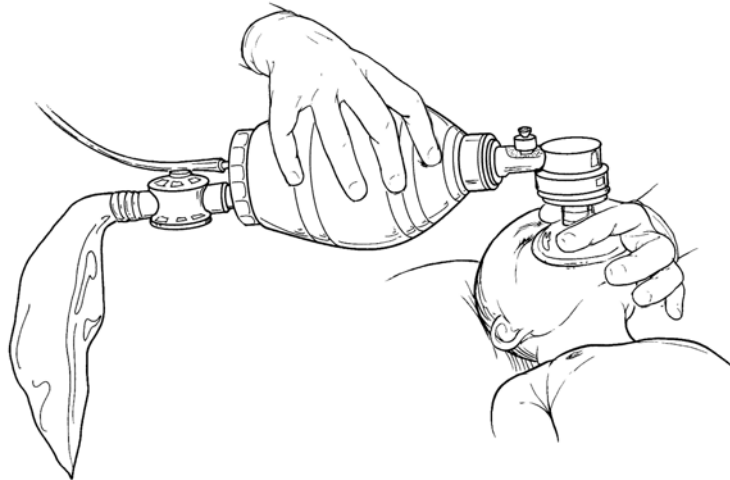
Use a BVM with snug fitting mask.

Attach oxygen source to reservoir.

Squeeze bag only enough to achieve chest rise.

After 30 seconds, assess breathing effort and pulse.

Continue assisted ventilations until the newborn is breathing 40-60/min, without assistance **and** has a sustained heart rate of at least 100/min.



Pulse is singularly the most reliable indicator of oxygenation and circulation in the newborn.

Normal pulse rate range is 120-180/min.

Pulse rate less than 100/min. indicates low blood oxygen.

Assessing the Pulse

Use the brachial pulse, or the base of the umbilical cord at the baby's abdomen.
If the pulse is at between 80-100/min, continue assisted ventilations.
If the pulse is absent or less than 80/min, begin chest compressions with assisted ventilations.

CPR

Compression to ventilation ratio is 3:1 at a rate of 90 compressions and 30 ventilations delivered per minute.

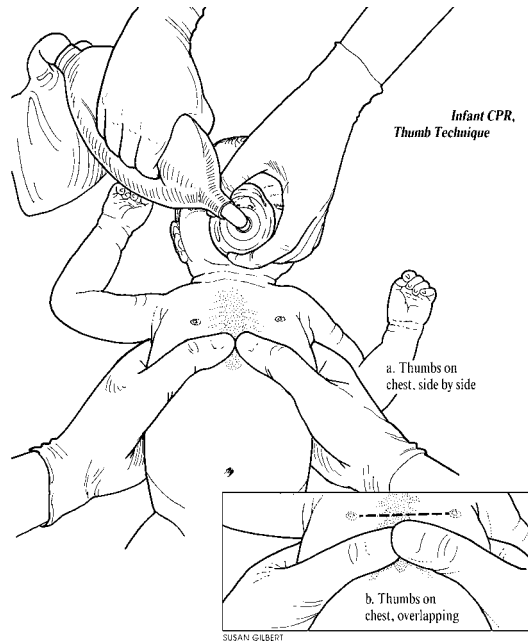
Two people are required to perform CPR.

Depress chest 0.5 to 0.75 inches.

Ventilate with BVM, maintaining airway positioning.

Continue chest compressions until the heart rate reaches 80/min.

Continue assisted ventilations until the heart rate is sustained at 100/min., and the child is breathing without assistance at 40-60/min.



ALS Interventions

ALS interventions include:

Intubation

Medications

Rarely are these needed, however, when necessary, these interventions are life saving.

Meconium Presentation

The first digestive waste of the newborn is called *meconium*.

Occasionally, meconium is discharged prior to birth as a result of a period of low blood oxygen.

If breathed in by the newborn, serious respiratory complications can occur.

EMTs can help prevent these complications by suctioning the baby as soon as the head emerges and again, immediately after delivery is complete.

During Transport

Pre-warm the transport vehicle and maintain a warm temperature.

Continuously monitor the baby's pulse.

Closely monitor breathing and skin tones.

Notify the hospital.

Case Scenario

You are dispatched to an OBS call with 'complications'. Police are on the scene, and they advise that the birth is imminent.

On arrival, you find a 39 y/o woman in active labor with crowning and strong contractions 2-3 minutes apart. The police officer tells you that the 'bag of waters' broke a few minutes ago

You and your partner begin to prepare for delivery.