

Emergency Delivery and Newborn Stabilization



Objectives

- Discuss triage of the laboring patient
- Outline the newborn resuscitation-oriented history
- Describe the steps for performing a vaginal delivery and the steps performed immediately post-delivery for every newborn
- Describe the steps in newborn resuscitation

23-year-old woman

- You are called to the scene of a 23-year-old woman in labor.
- ETA to scene: 5 minutes
- ETA from scene to nearest hospital with delivery service: 12 minutes

Review Concepts

Review en route:

- Triage of laboring patient
- Steps for a vaginal delivery
- Steps for immediate newborn management

Triage of the Laboring Patient

- Is this your first delivery?
 - If no, how long was the labor of the first delivery?
- Do you feel the “urge to push”?
 - If yes, delivery within 30-60 minutes
- Is the child’s head crowning?
 - If yes, delivery is imminent.

- This is the woman's second baby.
- She feels the urge to push.



Prepare for Delivery

Resuscitation oriented history:

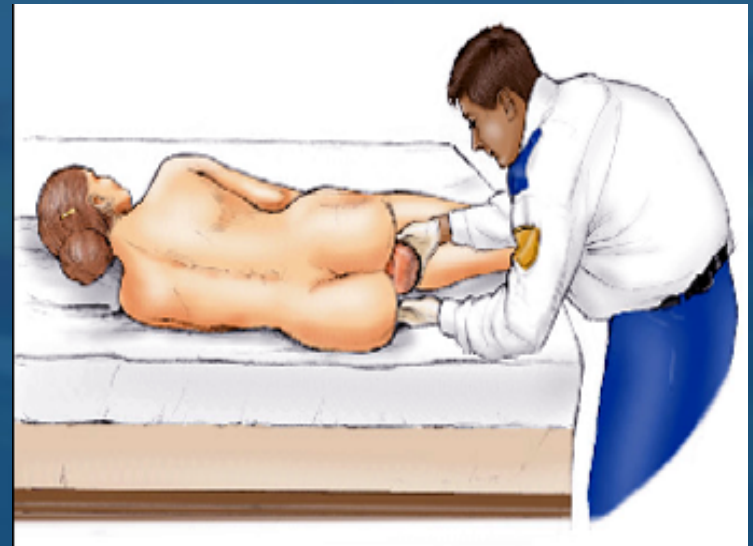
1. Are you having twins?
2. When are you due to deliver?
3. What color was the amniotic fluid?

Prepare for Delivery

- Prepare an area for the baby.
- Position the mother for vaginal delivery.



Supine Position



Sim's Position

Key Points for Vaginal Delivery

- Allow the mother to push the head out
- Reduce nuchal cord
 - (50-60% of deliveries)
- Refrain from pulling too hard
- Deliver the baby and keep the baby at level of the vaginal opening

Key Points for Vaginal Delivery

- Tie the cord in 2 places and cut the cord
- Suction the baby's mouth and nose
- Begin resuscitation of the baby as needed
- Delivery of placenta is non-emergent



- The baby is born limp and lifeless.
- No respiratory effort is noted.

What do you do now?

Immediate Management of the Newborn

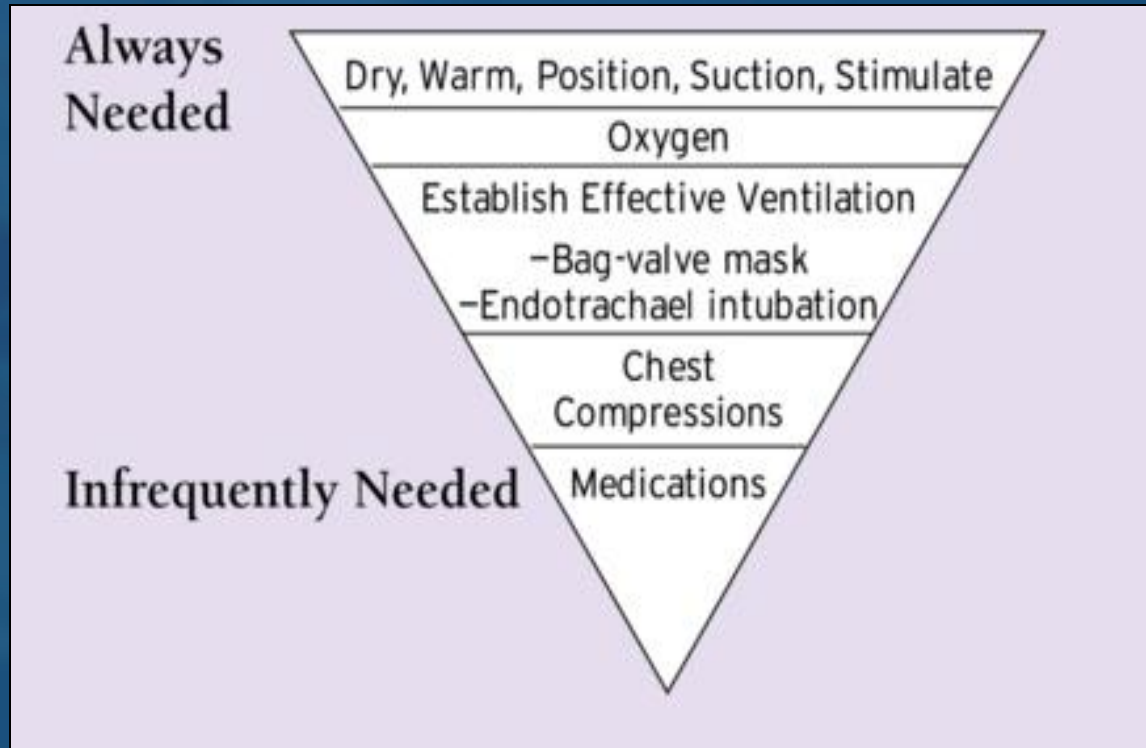
- Dry, warm, position, suction and stimulate the infant
- Clear the airway
- Assess breathing
- Assess heart rate
- Assess color



The infant remains apneic after the initial steps.

What do you do now?

Depressed Newborn Resuscitation



BVM in Newborns

- Index finger and thumb form a “C”
- Long finger is placed on the bony surface of the chin — do not push on the soft tissues
- The head is slightly extended on the neck — overextension results in obstruction



Depressed Newborn Resuscitation



- Ventilate at 40-60 times per minute
- After 30 seconds and heart rate < 60 beats/min, begin chest compressions
 - 3:1 ratio. Pause to deliver a breath.
 - 90 compressions and 30 breaths/min (120 “events” per minute)

Chest Compressions in the Newborn



Depressed Newborn Resuscitation



- After another 30 seconds and heart rate < 60 , beats/min, consider intubation
- Prepare epinephrine
 - Dose of IV/IO/ET epinephrine is 0.01 to 0.03 mg/kg or 0.1 to 0.3 ml/kg of the 1:10,000 solution

Special Circumstances: Meconium

- 12-14% at term
- Increased risk of respiratory distress
- Suction the mouth and nose before delivering the body



Special Circumstances: Shock



Shock Symptoms:

- Poor perfusion
- Weak pulses
- Poor response to resuscitation

Shock treatment:

- Rapid transport

Special Circumstances: Shock



- Assure adequate oxygenation and ventilation
- Obtain intravenous access:
 - Intravenous: 1st choice
 - Intraosseous: 2nd choice
 - Umbilical venous: if trained and equipped
- 10-20 ml/kg normal saline or Ringer's Lactate

Care of the Mother

- Monitor vital signs
- If signs of shock, place in shock position and perform uterine massage en route
 - Place one hand just above the mother's pubic bone
 - Use other hand to massage the uterus until it becomes firm





Care of the Mother

BLS management plus:

- If tachycardia is present, then place peripheral IV line and begin fluid resuscitation: 250-500 ml normal saline
- If greater than 500 ml of blood loss then fluid resuscitate 1 L normal saline

Stabilization for Transport

Discussion

The vigorous newborn:

No infant restraint seat available

- Place newborn in mother's arms
- Allow mother to breastfeed

Infant restraint seat available

- Secure newborn in rear-facing position restrained in seat
- Secure seat to ambulance
- Keep newborn warm!

Stabilization for Transport

The compromised newborn:

- Secure to backboard
- Provide airway management
- Keep newborn warm!
- Rapid transport



Stabilization for Transport



The compromised newborn:

- Secure to backboard
- Place on cardiac monitor
- Oxygen saturation monitor (90-100%)
- Keep newborn warm!
- Check glucose (40-60 mg%)

Conclusion

- Review the steps for vaginal delivery and newborn stabilization en route to scene.
- Proper triage decisions are vital.
- Childbirth is a natural act that usually needs only minimal intervention.
- In the depressed newborn, oxygenation and ventilation are the keys to resuscitation.