Childbirth

You Are the Emergency Medical Responder

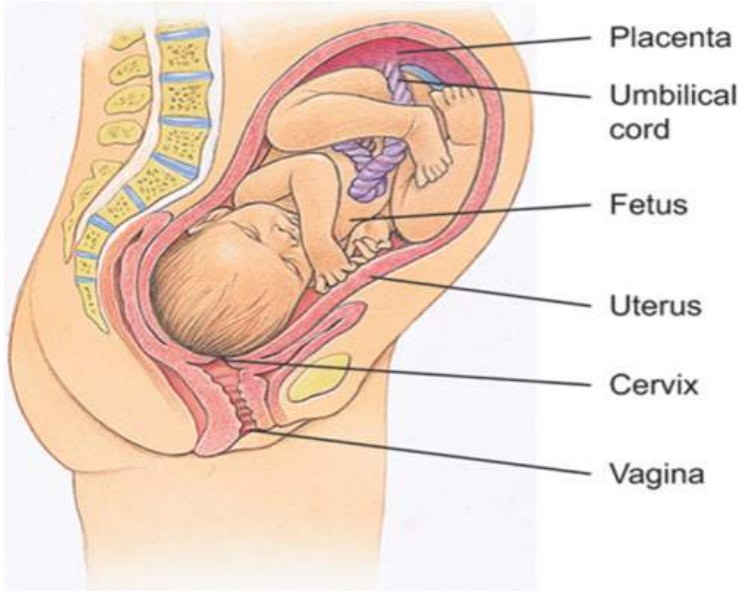
You are the lifeguard at a local pool and are working as the emergency medical responder (EMR) at that facility for the day. A young woman runs over to you and tells you that she thinks her older sister is in labor.

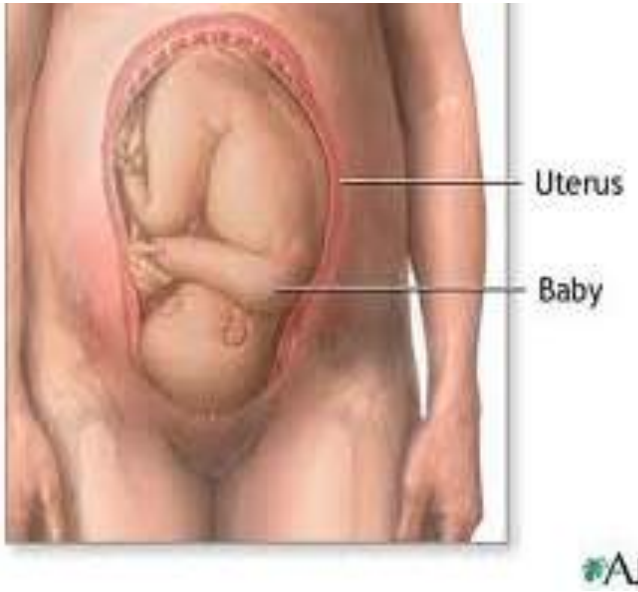
How do you respond?

What happens during childbirth?

Normal Pregnancy

- Full-term pregnancy spans 9-month period (38 weeks)
- Due date calculated as 40 weeks from the woman's last menstrual period
- Three trimesters, each about 3 months long



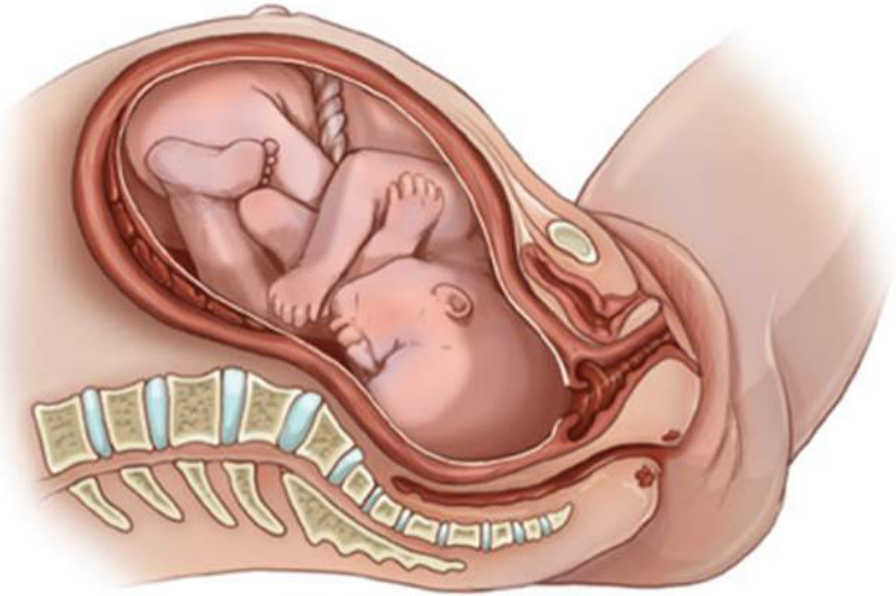


Normal Pregnancy

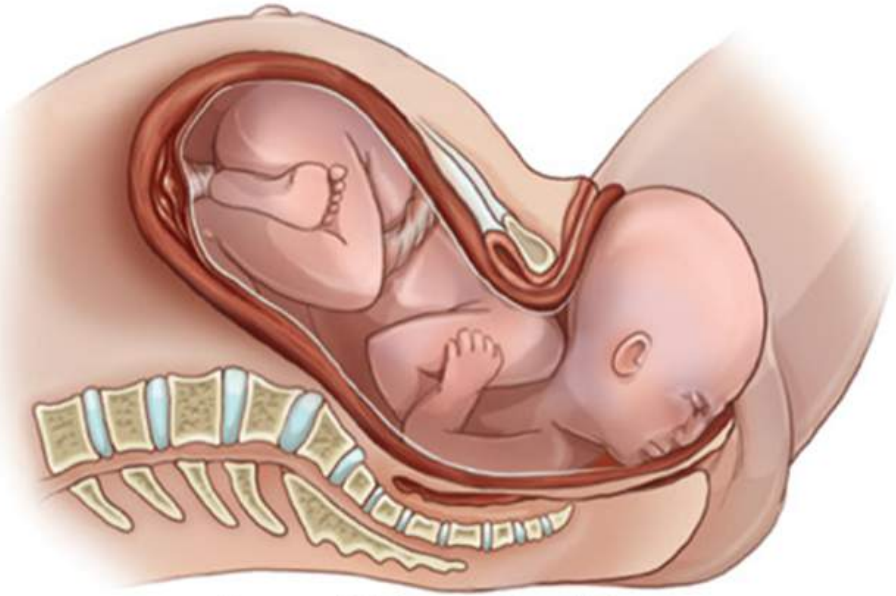
- First trimester: implantation and rapid embryo development
- Second trimester: feelings of being re-energized; beginning to "show" with woman's weight gain
- Third trimester: time of greatest fetal weight gain; expansion of woman's abdomen
- Pregnancy culminates in the birth process
- Labor begins with rhythmic contractions of the uterus
- For First-time mothers, Time between labor and delivery normally takes between 12 and 24 hours

Birth and Labor Process
Stages of Labor

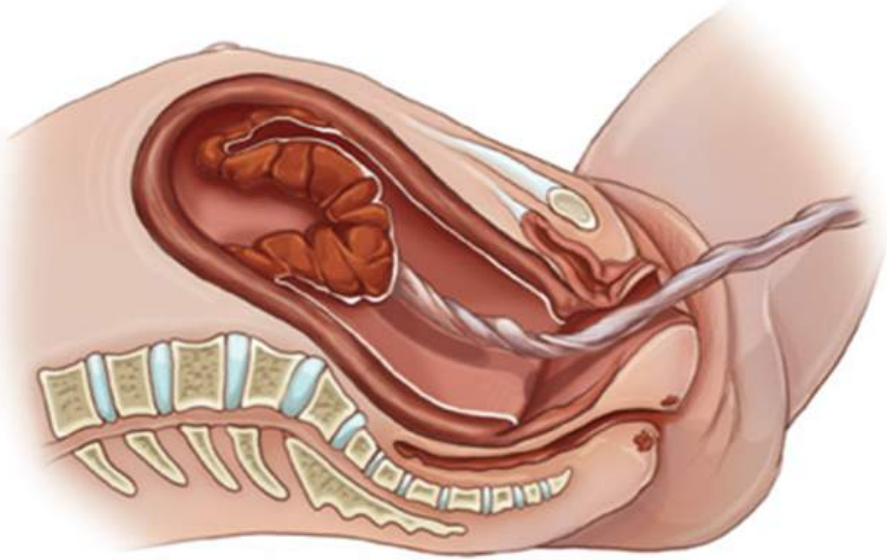
- First stage: Dilation
  - Time of first contraction until full cervical dilation
  - Release of amniotic fluid/mucous plug
- Second stage: Expulsion
  - Baby's movement through the canal and delivery
- Third stage: Placental delivery
  - Usually within 30 minutes of delivery
- Fourth stage: Stabilization
  - Recovery of mother; uterine contraction



First Stage: Dilation



Second Stage: Expulsion



Third Stage: Placental Delivery

Labor Assessment

- True versus false labor contractions
  - True contractions occur over regular intervals
  - Braxton-Hicks contractions
- Due date
- Expected complications
- Timing of contractions - feel mothers abdomen and time - length, duration, frequency
  - If 5 minutes apart, transport to medical facility
  - If 2 minutes apart, prepare for imminent delivery
  - Crowning

Labor Assessment (cont'd)

- To help determine how far along the woman is in the labor process, ask the following:
  - When is your due date?
  - Have you been under a physicians care?
  - Is this her first pregnancy?
  - Is there a chance of multiple births?
  - Has the amniotic sac ruptured?
  - Is there a bloody discharge?
  - Does she have an urge to bear down (move her bowels)?
  - DO NOT ALLOW the patient to go the bathroom
  - Is the baby crowning?

Activity

You arrive at the home of a pregnant woman who has called 9-1-1 because her "water broke" and she has been having contractions off and on for several hours. This is the woman's first pregnancy and she is at home alone.

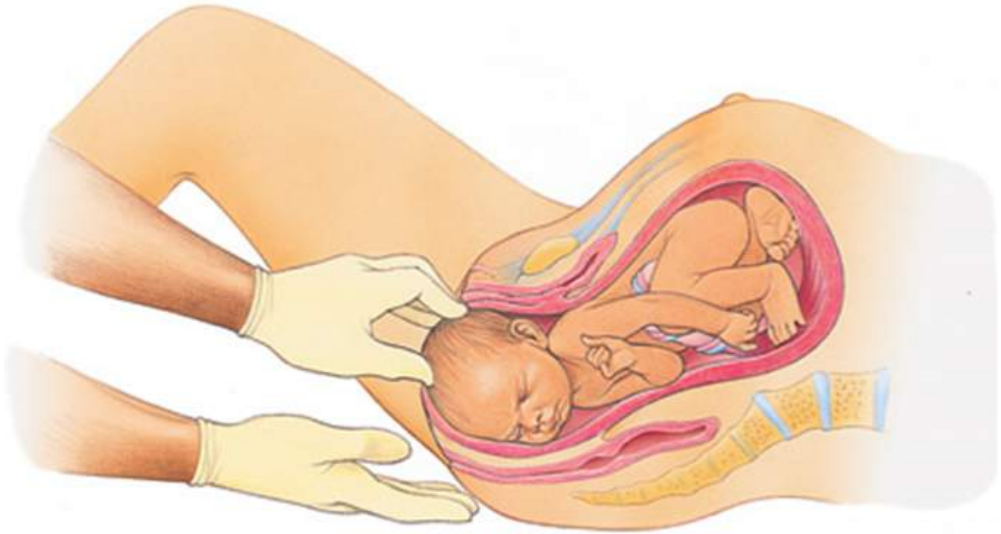
What information do you need to obtain about the woman to determine whether to transport the woman to a medical facility or prepare her for an imminent birth?

Signs of Imminent Birth

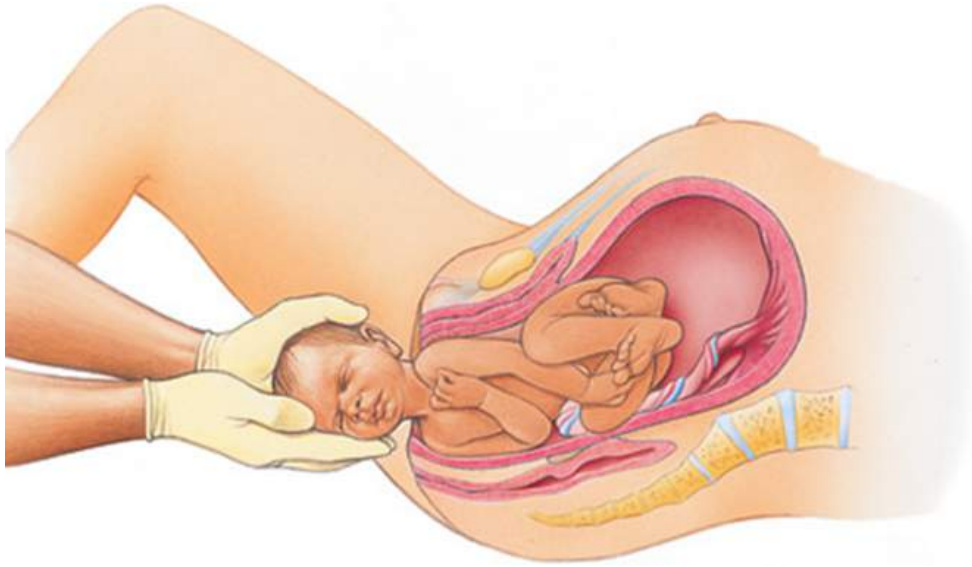
- Obstetric pack
- Have the mother breath slowly and deeply
- Intense contractions 2 minutes apart or less, lasting 60 to 90 seconds
- Very tight and hard abdomen
- Report of feeling infant's head moving down birth canal; feeling of the urge to defecate
- Crowning
- Mother with a strong urge to push

Steps for Imminent Birth with Crowning

- Mother on her back, head and upper back raised with knees drawn up and legs apart
- Apply light pressure on top of the baby's head
- Encourage woman to pant and stop pushing
- Puncture the amniotic sac if necessary
- Check for umbilical cord looping; gently slip it over the head or shoulders
- Guide one shoulder out at a time; do not pull
- Use a clean towel to receive or hold the baby
- Place baby on its side between mother and you
- Note the time of birth



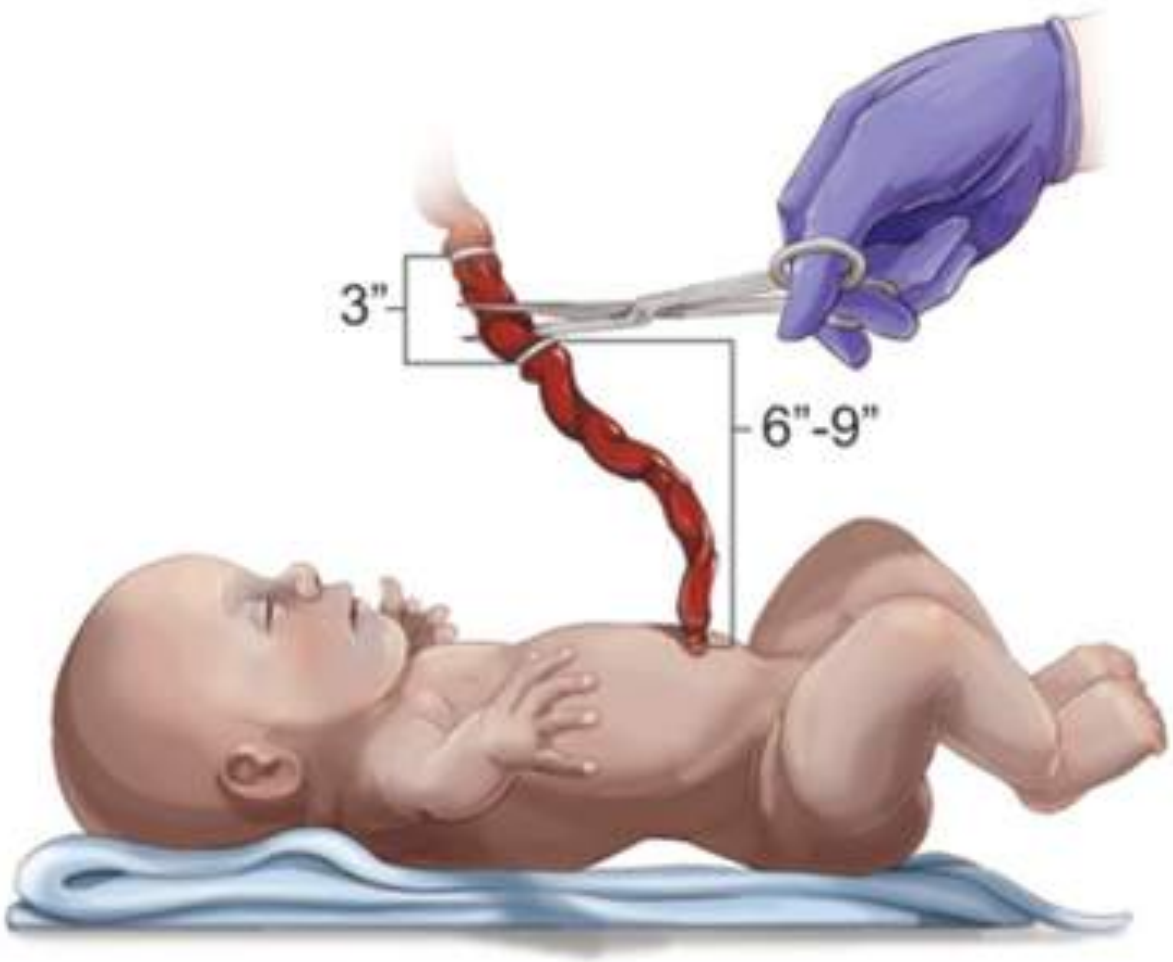
Place your hand lightly on the baby's head to encourage a gradual emergence and prevent a forceful birth.



Support the head as it emerges and the baby turns. Check to ensure the umbilical cord is not around the baby's neck.

Caring for the Newborn and Mother

- Clamp/tie umbilical cord
  - Stop pulsating – cut at least 6” from baby, 3” apart
- Support head during handling
- Clear mouth and nasal passages (suction mouth before nose)
- Keep the newborn infant warm and dry (to prevent heat loss)
- Assess APGAR score


3"
6"-9"

Childbirth Simulation

Normal Vaginal Birth

APGAR Score

- A – Appearance
- P – Pulse
- G – Grimace
- A – Activity
- R – Respiration

Sign	Score = 0	Score = 1	Score = 2
Heart Rate	Absent	Below 100 per minute	Above 100 per minute
Respiratory Effort	Absent	Weak, irregular, or gasping	Good, crying
Muscle Tone	Flaccid	Some flexion of arms and legs	Well flexed, or active movements of extremities
Reflex/Irritability	No response	Grimace or weak cry	Good cry
Color	Blue all over, or pale	Body pink, hands and feet blue	Pink all over

- 7 – 10 active, vigorous newborn
- 4 – 6 moderately depressed newborn; requires stimulation and oxygen
- 1 – 3 severely depressed newborn; requires intensive care

When to Begin Immediate Newborn Resuscitation

- Respirations fall to less than 30 per minute or the newborn is gasping or not breathing
- Pulse is less than 100 Beats per Minutes (bpm)
- Cyanosis persists around the chest and abdomen despite having administered emergency oxygen

Caring for the Newborn and Mother

Mother

- Placenta remains in uterus attached to the baby by the umbilical cord after delivery
- Uterine contractions usually expel the placenta within 10 minutes of delivery, usually within 30 minutes
- Additional vaginal bleeding occurs with placenta expulsion
- Continue to provide physical and emotional care
  - Keep clam, monitor vitals

Activity

You are called to an employee lounge at a local manufacturing plant because a pregnant woman is in labor and the newborn is crowning. Shortly after your arrival, the woman gives birth to a baby girl who appears to be smaller than normal. The baby does not cry spontaneously after birth.

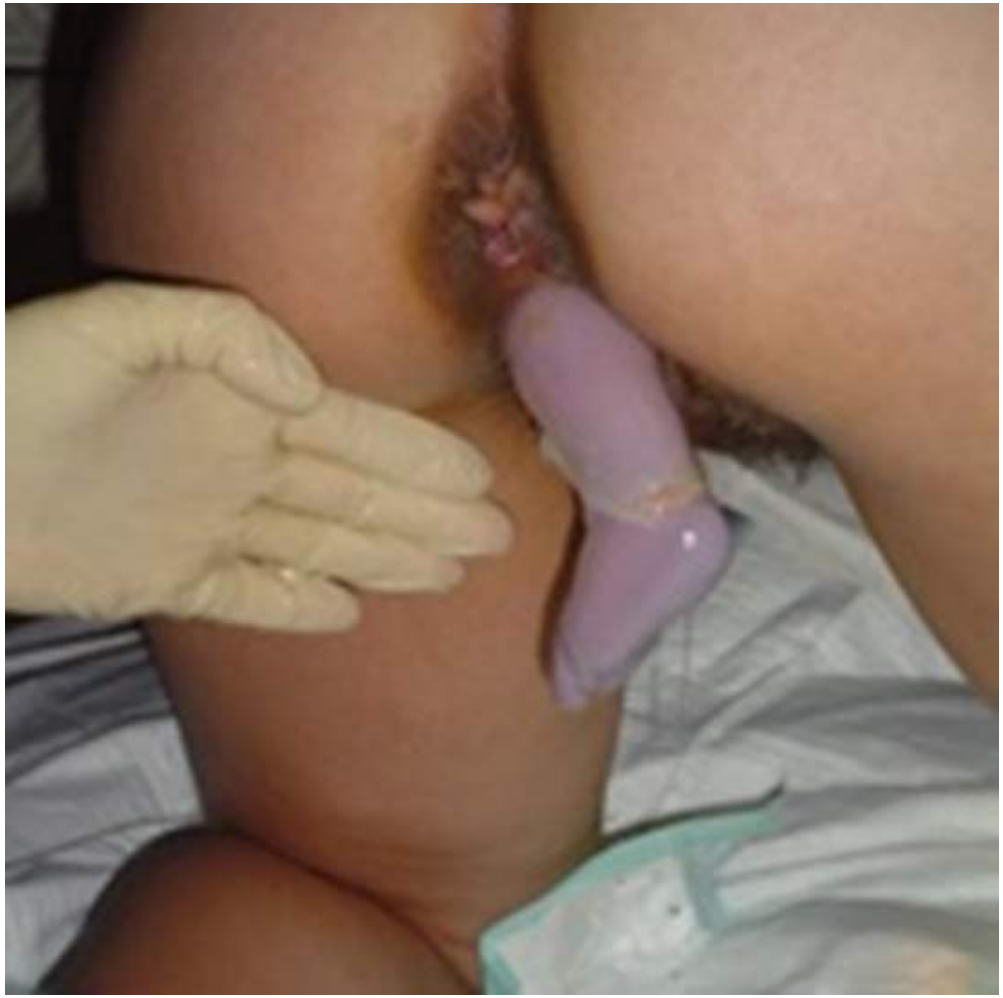
What actions would be appropriate?

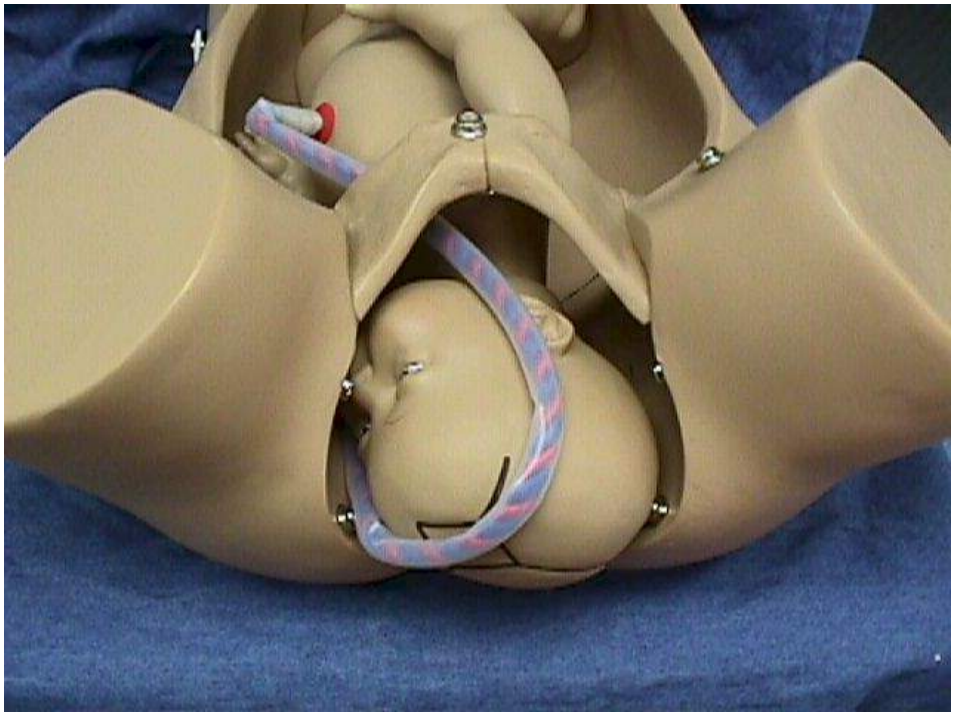
Complications During Pregnancy

- Complications require more advanced medical personnel
- Spontaneous abortion (miscarriage)
- Ectopic (tubal) pregnancy
- Pre-eclampsia (toxemia) and eclampsia (pregnancy-induced hypertension)
- Vaginal bleeding
- Trauma

Complications During Delivery

- Hemorrhage (postpartum hemorrhage)
- Prolapsed umbilical cord
- Breech birth
- Limb presentation
- Multiple births
- Premature birth
- Meconium aspiration

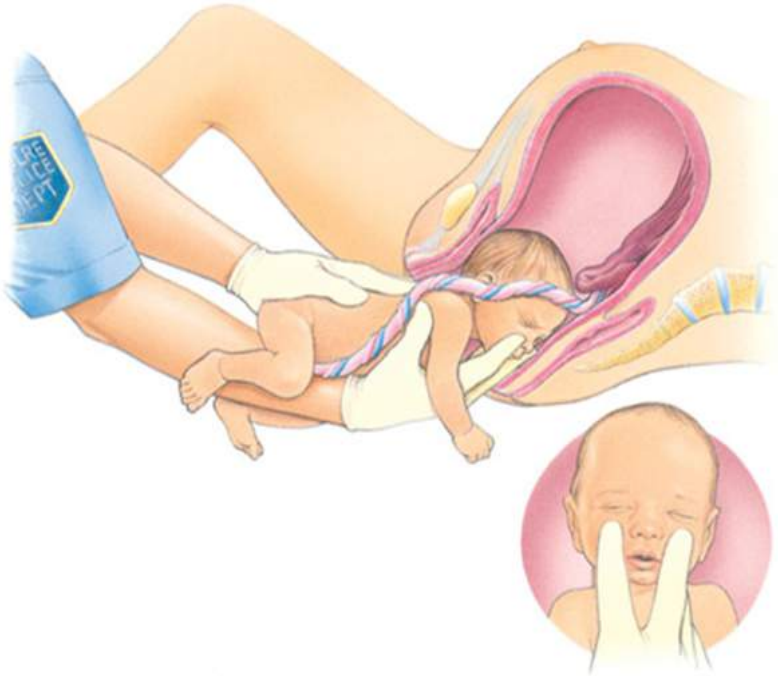




American Red Cross

Care for Complications

- Breech Birth



During a breech birth, position your index and middle fingers to allow air to enter the baby's mouth and nose

- Prolapsed cord or Limb presentation

- Place mother in a knee-chest position (stinkbug position)

You Are the Emergency Medical Responder

While approaching the young woman who is in labor, the sister tells you that the patient is 26 years old. The pregnant woman is yelling, "The baby is coming!" She tells you that this will be her fourth child.

What should you do?

Pediatrics

You Are the Emergency Medical Responder

You are working as the camp health officer at a local summer camp when a young girl approaches you complaining that she has a rash. She says that she is allergic to certain things and may have come into contact with something that has now given her hives.

Anatomical Differences

- Larger tongue that block airways
- Nose breathing (newborns and infants)
- Higher epiglottis
- Narrower trachea
- More rapid (2-3x) and shallower breathing

Age Groups

For the purpose of providing emergency medical care:

- Infants: younger than 1 year
- Children: between the ages of 1 and 12 years (1 to 8 years of age for AED)
- Adults: about 12 years or older

Child Development

- Infant: birth to 1 year
  - Inability to communicate; recognize faces
- Toddler: 1 to 3 years
  - "stranger danger;" fear of separation
- Preschooler: 3 to 5 years
  - Feel that bad things are caused by their behaviors
- School-age child: 6 to 12 years
  - Increased likelihood of cooperation; reassurance
- Adolescent: 13 to 18 years
  - Accurate information; modest, need for privacy

Pediatric Assessment
General Considerations

- Carefully observe without touching the child
- Observe for breathing, presence of blood, movement and general appearance
- Perform head-to-toe assessment unless child is agitated or upset, then perform toe-to-head assessment
- Observe scene from arrival; be alert for signs of other possible issues, such as child abuse or poisoning

Pediatric Assessment Triangle

- Initial assessment of child, take 15-30 seconds
- Appearance – crying, moving, talking
- Breathing – effort, noises
- Skin (circulation) – pale, cyanotic, bleeding

Sick / Not sick

Sick / Not sick

Assessment of Level of Consciousness

- AVPU scale – Level of Consciousness (LOC)
- Pupils response to light
- Exposure – keep child covered

SAMPLE History

- Ensure parent or caregiver cooperation
- Remain respectful and polite
- Ask questions requiring detailed answers
- Encourage child participation
- Allow for privacy for an older child or adolescent

SAMPLE History Components

- **S**ymptoms – fever, activity level
- **A**llergies – meds, food, environmental
- **M**edications – prescription, OTC
- **P**ertinent past medical history – occurred before
- **L**ast oral intake – anything unusual
- **E**vents leading up to injury or illness – what was going on when you first noticed

Care During a Physical Exam

- Crouch down to child's eye level
- Speak calmly and softly
- Maintain eye contact
- Be gentle; **never** lose your temper

Physical Exam Components

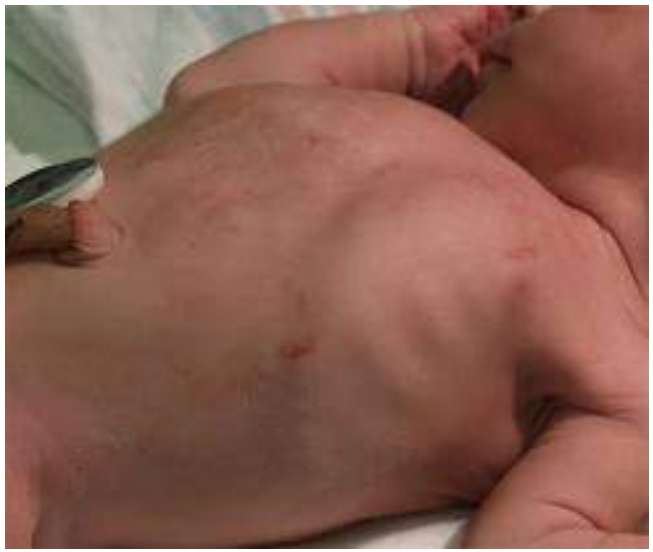
- Head: bruising or swelling
- Ears: drainage suggesting trauma or infection
- Mouth: loose teeth, odors or bleeding
- Neck: abnormal bruising
- Chest and back: bruises, injuries or rashes
- Extremities: deformities, swelling or pain on movement

Activity

You are called to the local playground to evaluate a 4-year-old child who has fallen backward off the steps of a slide. The child's mother states that her daughter was on the fourth step (of five) when she suddenly slipped and fell. The child is lying on her back and crying quietly.

Common Problems in Pediatric Patients: Airway Obstructions

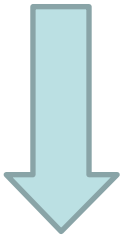
- Common emergency problem in children and infants
- Partial:
  - High-pitched noises, retractions, drooling
- Complete:
  - Inability to cough, cry; cyanosis, LOC
- Clear airway



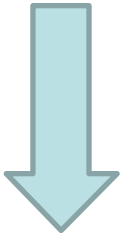
Anatomical Differences and Physiological Differences

- Larger tongue
- Smaller airway
- Shorter trachea
- Diaphragmatic breathing (older children and adolescents) – nothing pressing on abdomen
- Nose breathing (young children and infants)
- **Children compensate for a long time, then suddenly crash!**

Respiratory distress



Respiratory failure



Respiratory arrest

Pathophysiology

- Respiratory distress preceding respiratory arrest:
  - Infants - > 60 respiratory rate
  - Children - > 30 respiratory rate
  - Flaring of nostrils
  - Use of neck muscles
  - Cyanosis
  - Altered mental status
  - Grunting

Activity

You are called to the home of a young couple who called 9-1-1 because their 4 year old collapsed and started shaking. The parents say, "He was sitting on the floor playing with his toys, and then all of sudden he fell over and his whole body started making these strange jerky movements."

Common Respiratory Problems in Children

- Respiratory distress
- Croup – Upper airway virus; barking
  - Humidified oxygen; cool outside air
- Epiglottitis – bacterial infection
  - Keep clam, transport to hospital
- Asthma – constricting bronchioles
  - Wheezing; rescue medications
- Choking – partial or complete

- Cardiac emergencies are rare in children and infants
- Typically they are caused by a respiratory emergency
- Management: assisting with breathing, observing for signs of cardiac arrest, performing CPR and using an AED

Seizures

- Irregular electrical activity of the brain causing loss of body control
- Causes:
  - Febrile (most common) – high fever
  - Head trauma
  - Epilepsy or other seizure disorders
  - Low blood glucose
  - Poisoning
  - Hypoxia
  - Serious infections

- Prevent injury
- Protect airway
- Ensure open airway after seizure has ended

Fever

- Elevation in body temperature, typically indicating infection
- Management:
  - Gentle cooling
  - Removal of excess clothing
  - No ice water or alcohol baths
  - No aspirin or aspirin-containing products
    - Reye's Syndrome – affects the brain and other internal organs

Poisoning

- 5th leading cause of unintentional death in the United States
- Usually due to ingestion of household cleaning products, medications and small, solid objects like batteries, particularly the watch-sized batteries found in many children's toys

Shock

- The body's reaction to physical or emotional trauma, infection, vomiting or diarrhea (most common in children)
- Altered mental status is a strong indicator
- Management:
  - Laying the child flat
  - Constant monitoring of respiratory and circulatory status

Altered Mental Status

- Many possible causes
  - Low blood sugar, poisoning, seizures, infection
- Management:
  - Open airway
  - Emergency oxygen
  - Recovery position

Trauma

- Number one cause of death in children
- Many the result of motor-vehicle collisions leading to airway obstruction and bleeding
- Management:
  - Open airway
  - Bleeding control
  - Assessment of other body injuries
  - Comfort to the child and family

- Non-accidental trauma
  - Physical
  - Psychological
  - Sexual
- Example: shaken baby syndrome
- Legal obligation to report suspicion

Signs of Child Abuse

- Injury that does not fit description
- Cigarette burns, whip marks, or hand prints
- Fractures in children less than 2 years old
- Injuries in various stages of healing, especially bruises and burns
- Unexplained lacerations, especially to mouth, lips, and eyes
- Injuries to genitalia
- More injuries than are typical for child of same age
- Repeated calls to same address

Signs and Symptoms of Neglect

- Lack of adult supervision
- Malnourished appearance
- Unsafe living conditions
- Untreated chronic illness
- Untreated soft tissue injuries

Sudden Infant Death Syndrome
SIDS

- Occurs in infants younger than 1 year, most often between the ages of 4 weeks and 7 months
- Usually occurs during sleep
- No link to any disease
- Place infants to sleep on back or side
- Try to keep blankets and pillows out of crib
- Care for the child as you would other cardiac arrest victims

Apparent Life-Threatening Event
ALTE

- Occurs in infants younger than 1 year
- Signs include:
  - Apnea – pause in breathing
  - Change in color
  - Change in muscle tone
  - Coughing or gagging
- Usually linked to digestive, neurologic or respiratory health problems

Considerations for Children with Special Needs

- Additional health concerns
- Parents provide most information because they are the most familiar with the medical equipment used by the child
- Never make assumptions about a child's mental capacity if child is not able to express thoughts or words
- Always speak directly to the child

You Are the Emergency Medical Responder

As you continue to monitor the child's condition, you notice that the hives have spread beyond the affected area.

Geriatrics

You Are the Emergency Medical Responder

Your police unit responds to a scene where an elderly gentleman appears lost and disoriented. He does not know where he is, how he got there or how to get home. When you ask him what his name is, he cannot remember.

Physical and Mental Differences

- Decreased sensory sharpness and awareness
  - Vision, hearing, sense of touch/pain and taste/ smell
- Heart muscle thickening and arterial stiffening
- Decreased lung elasticity and airway shrinking
- Digestive tract stiffening
- Nervous system - cognitive impairment (memory loss): not a normal change
- Decreased bone density
- Other

Assessing and Caring for the Geriatric Patient

- Assess using same care procedures for an adult
- Speak with patient's family or caregivers to identify usual behavioral patterns
- Talk slowly and clearly at eye level and ensure that the patient understands
- Distinguish signs and symptoms of normal aging from those related to the emergency

Assessing and Caring for the Geriatric Patient (cont'd)

- Be alert that the patient may tire easily or may downplay symptoms
- Assessing a peripheral pulse may be difficult
- Work calmly, slowly and extra care
- Handle skin carefully
- Be aware of blood thinning medications
- Provide the appropriate care procedures

Dementia

- Chronic and irreversible cognitive impairment
- Alzheimer's disease: most common type of dementia
  - Putting up a social façade
  - Pacing or wandering
  - Rummaging or hoarding
  - Sundowning
  - Speaking nonsense
  - Exhibit depression, anger, or suspicion

Elder Abuse

- Physical and emotional abuse
- Neglect – intentional/unintentional
- Financial exploitation
- Abandonment
- Any combination of the above

Risk Factors for Elder Abuse

- Mental impairment
- Isolation of the patient and/or caregiver
- Inadequate living situation
- Inability to perform daily functions
- Frailty
- Family conflict
- Abuse or stress
- Poverty and financial stress

Signs of Possible Elder Abuse

- Patient who is frequently left alone
- History of emergency room visits
- Old and new injuries
- Repeated falls
- Unexplained skin problems or hair loss
- Inappropriate dress
- Poor hygiene
- Malnourishment
- Lack of energy or spirit

Activity

You are called to the home of an elderly woman who lives with her son and daughter-in-law in a small two-bedroom apartment. The son called 9-1-1 to report that his mother had fallen earlier when she was home alone. Upon arrival, you notice that the apartment is extremely cold and cluttered with old newspapers, dirty dishes and other items. The woman is sitting on the floor of the kitchen wearing only a cotton robe and slippers. She is holding her right arm near the wrist. When you ask her what happened, she hesitantly replies, "I fell." Your assessment reveals several areas of old bruises on her inner arms and legs.

You Are the Emergency Medical Responder

As you continue your care, the man begins to remember small bits of information but still does not remember where he lives or where he is. He becomes agitated at the help being provided, saying he does not need any help.

Special Needs Patients

You Are the Emergency Medical Responder

Your police unit responds to a scene where an elderly gentleman appears lost and disoriented. He does not know where he is, how he got there or how to get home. When you ask him what his name is, the gentleman stares at you and says, "What did you say?" Initially he cannot remember, but after repeating the question several times the patient begins to respond and remember small bits of information.

Special Needs Situations

- Mental illness
- Intellectual disabilities
- Visually impaired
- Deaf and hard of hearing
- Physically challenged
- Chronic diseases and disabilities

Types of Mental Illness

- Mood disorders
- Schizophrenia
- Anxiety disorders
- Eating disorders
- ADHD – Attention-Deficit/Hyperactivity Syndrome
- Autism
- Alzheimer's disease

Intellectual Disabilities

- Significantly below-average scores on tests of mental ability or intelligence
- Impaired ability to function in daily life
- Example: Down syndrome

Special Need Situations

- Visually impaired
  - Announce yourself as you approach
  - Reassure them, explain what you are doing
- Deaf and hard of hearing
  - May not be obvious
  - Face the patient, some can read lips
  - Write down questions
- Physically challenged
  - Help with the patient needs

Chronic Diseases and Disabilities

- Heart disease
- Diabetes
- Arthritis
- Cancer
- Cerebral palsy
- Cystic fibrosis
- Multiple sclerosis (MS)
- Muscular dystrophy
- Autism

Hospice Care

- Care provided to a terminally ill patient in the final 6 months of life
- Focus is on keeping the person comfortable and pain-free
- Also provides physical, emotional, social and spiritual comfort to the dying person – bereavement care

You Are the Emergency Medical Responder

As you continue your care, you suspect that the man has a hearing problem. He still does not remember where he lives or where he is. He becomes agitated at the help being provided, saying he does not need any help.