OKLAHOMA
PREHOSPITAL PEDIATRIC SUPPLEMENT
FOR
INFANTS AND CHILDREN MODULE
1994 EMT-BASIC CURRICULUM

EMSC
Emergency Medical Services for Children

U.S. Department of Health & Human Services
Public Health Service
HRSA
Health Resources & Services Administration

OKLAHOMA
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1994 EMT-BASIC CURRICULUM

Prepared by:

The EMSCRC Prehospital Task Force

John H. Stuemky, MD
Principal Investigator

Paul F. Marmen, EMT, BS, M.Ed.
EMSCRC Project Director

Harvey Conner, REMT-P
EMS Educator

James Morehead, BS, EMT-P
EMS Educator

John Westfall, AS, EMT
Information Specialist

Myrna Laughlin
Administrative Support

University of Oklahoma
Department of Pediatrics
Section of General Pediatrics
Children's Hospital of Oklahoma

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Oklahoma
Prehospital Pediatric Supplement
for
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1994 EMT-Basic

INTRODUCTION

In 1993, the Oklahoma State Department of Health EMS Division (OSDH-EMS) approved the addition of a Pediatric Supplement to the Emergency Medical Technician - Basic Core Curriculum. On September 14, 1995, OSDH-EMS approved the 1994 Department of Transportation Emergency Medical Technician - Basic Curriculum. The new curriculum contains **Module 6: Infants and Children**, OSDH-EMS and the Oklahoma EMS Advisory Council still recognized the need for additional Pediatric education for Emergency Medical Technicians in the state of Oklahoma.

This revision of the PAC's course is now called "**Emergency Medical Services for Children Pediatric Supplement".** We have included supplemental cognitive and psychomotor objectives in a format that will easily supplement the DOT curriculum as the instructor covers Module 6.

Completion of the EMT-Basic course in the state of Oklahoma, must include entire pediatric content: **DOT, Module 6 and EMSC Pediatric Supplement**.

Instructors will find this supplement, easy to follow, is user friendly, student centered and an excellent format for all future lesson plans you may develop. EMSC has included a **STUDENT OUTLINE** (Appendix D) that should be copied for each student to take notes of the presentation.

EMSC encourages all instructors to assess the supplement and provide us with feedback for future revisions and improvements of the supplement. EMSC is also a RESOURCE CENTER that can provide you with multiple resources you can use in your classrooms to reinforce this section. We hope you will utilize these resources frequently to enhance your teaching skills by providing current pediatric emergency care information.

Oklahoma Emergency Medical Services for Children
1994 EMT-Basic Pediatric Supplement

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Cognitive Objectives

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6-1.0B	Identify methods / mechanisms of injury prevention for Infants and Children.
6-1.2A	Identify two anatomic and physiologic differences between children and adults regarding skin and body surface.
6-1.3A	Identify four areas to consider when taking the child's history.
6-1.3B	Describe important factors in taking and interpreting vital signs. * Pulse * Respiration's * Blood Pressure * Temperature
6-1.3C	Identify a minimum of four significant differences between the adult and pediatric airway which affect ventilation.
6-1.5A	Evaluate the signs of respiratory insufficiency/failure in pediatric patients.
6-1.7A	Describe the four most common respiratory emergencies in children, the signs and symptoms, and management.
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6-1.13A	List the most common causes of trauma to children and most the frequent injuries to the child with multiple trauma.

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6-1.14C	Describe the signs and symptoms that indicate hypoperfusion (shock) in the child.
6-1.14D	List the characteristics of head injury with varying severity.
6-1.14E	Identify the early signs of increased intracranial pressure.
6-1.14F	Describe the assessment and management of a child with a suspected spinal cord injury.
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6-1.15B	Describe the range of injuries seen in physically and sexually abused children.
6-1.15C	Describe the procedures required by state law for reporting suspected child abuse

The following objectives do not correlate with an objective of the new curriculum. EMSC recommends introducing these objectives as *Medical Emergencies*.

6-1.ME-A	Describe the field management for meningitis and sepsis, including special precautions for both patient and field provider.
6-1.ME-B	Describe the physical signs and management for diabetic ketoacidosis (hyperglycemia) and hypoglycemia.
6-1.ME-C	List signs of distress in a child with congenital heart defect.
6-1.ME-D	Describe the appropriate Prehospital care of “special needs” infants and children.

Psychomotor Objectives

Objective Number	Content
6-1.27	Identify indications for airway management in the pediatric patient.
6-1.27A	Demonstrate the correct sequence in airway management for pediatric patients with respiratory insufficiency/failure.
6-1.27B	Demonstrate proficiency in sizing and placement of an oropharyngeal (OP) airway.
6-1.27C	Demonstrate the correct technique for sizing and placement of a nasopharyngeal (NP) airway.
6-1.28	Demonstrate the correct technique in utilizing the “Broselow Pediatric Emergency Tape”.

COGNITIVE OBJECTIVES

PREHOSPITAL PEDIATRIC SUPPLEMENT
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Objective # 6-1.0 Define Emergency Medical Services for Children (EMSC).

A. Definition: A program designed to reduce child and youth mortality and morbidity due to severe illness or trauma.

B. History: 1984 Legislation enacting the use of federal funds. Public Law (102-410)

C. Management (National): Maternal Child Health Bureau (MCHB). National Highway Traffic Safety Administration (NHTSA).

D. Management (Oklahoma): Oklahoma University Health Sciences Center Department of Pediatrics, Section of General Pediatrics, Children's Hospital of Oklahoma.

E. National Resource Centers: National Resource Center
111 Michigan Ave. N.W.
Washington, D.C. 20010-2970
www.ems-c.org

National EMSC Resource Alliance (NERA)
Research and Education Institute/Harbor-UCLA
1124 West Carson St.-Building N-7
Torrance, CA 90502

F. Oklahoma Resource Center: EMSCRC
Department of Pediatrics
Section of General Pediatrics
Room 1408 P.O. Box 26901
Children's Hospital of Oklahoma
Oklahoma City, OK 73190
(405) 271-3307 Fax (405) 271-8709
Web Page:w3.ouhsc.edu/emsc
e-mail: emsc@ouhsc.edu

G. Education and Training:

1. Prehospital Curricula
2. Pediatric Advanced Life Support
3. Emergency Pediatric Care Course
4. Injury Prevention Programs
5. Bystander Care Programs
6. Childcare Health and Safety courses
7. Pediatric education resource library
8. 1st Care Program
9. Instructional Outcome Statistics & Improvement resources.

Objective # 6-1.0A Discuss how an integrated EMSC system can affect patient outcome.

A. Integrated EMSC Systems:

The EMSC system affects the following areas:

1. Prevention
2. Prehospital Services
3. Emergency Departments
4. Intensive Care Units
5. Rehabilitation
6. Community Follow-up
7. Psychological Services
8. Sate Regulatory Agencies
9. Trauma Systems & Development

Affects on Patient Outcome:

1. Reduction and prevention of pediatric emergencies.
2. Reduction of pediatric death and disability.
3. Reduction of family and community negative impact from pediatric emergencies.

Objective # 6-1.0B Identify methods/mechanisms of Injury Prevention for Infants and Children.

Methods / Mechanisms:

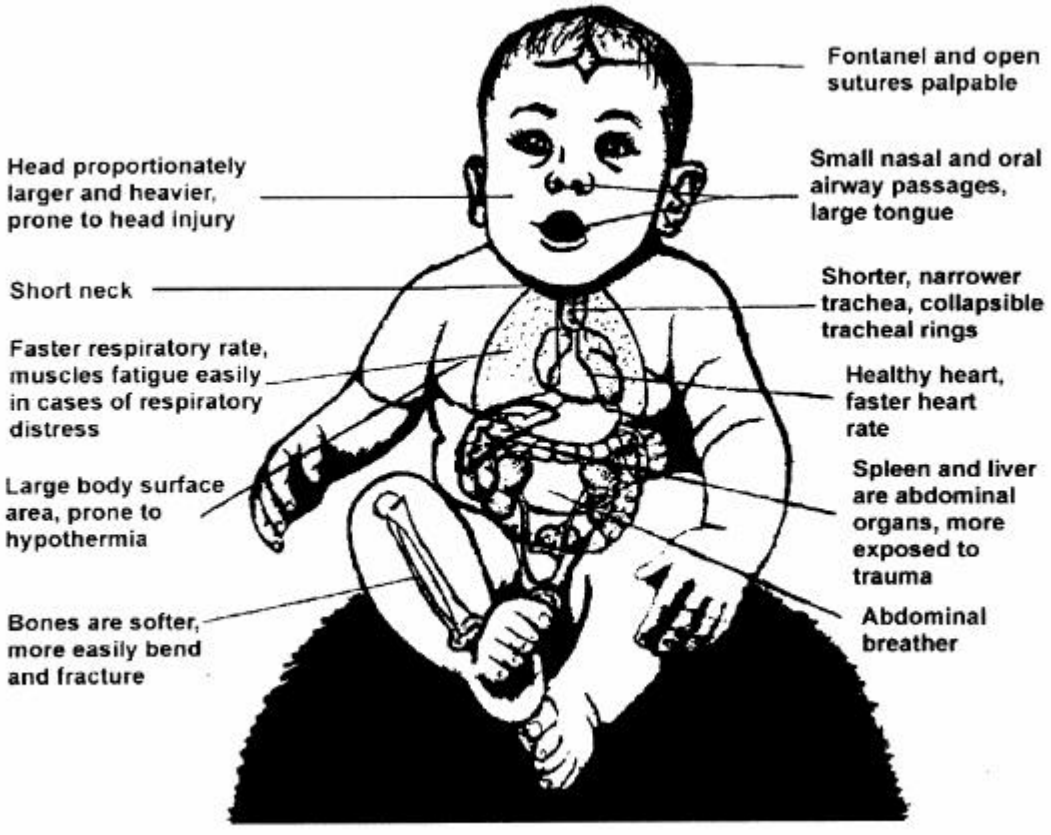
1. Training in first aid & CPR.
2. Require CPR certification for High School graduation / drivers license.
3. Bicycle Safety Courses
4. Injury Prevention programs taught in schools.
5. Data collection to determine injuries in your area.

Objective # 6-1.2A Identify two (2) anatomic and physiologic differences between children and adults regarding skin and body surface.

Skin and Body Surface Area:

1. Infants and young children are prone to hypothermia because their body surface area is larger in proportion to their body mass.
2. Their skin is thinner and contains less subcutaneous fat. The same exposure to burn injury will result in deeper burns than an adult would receive.
3. Newborns are further compromised because their temperature regulatory mechanisms are not well developed.
4. Effectiveness of resuscitation and drug therapy is greatly reduced in the hyperthermic child.
5. The head of an infant or young child accounts for approximately 20% of the total body surface.
6. Proportions of body surface area by body part change throughout childhood, assuming adult dimensions by about 10 years of age.

Figure 1.



Objective # 6-1.3A Identify four areas to consider when taking the child's history.

SPECIAL CONSIDERATIONS IN APPROACHING THE CHILD:

A. Taking the Child's History:

1. For the young child, it will usually be necessary to obtain the history from the parent or caregiver.
2. Elements of the pediatric history are the same as for adults with the addition of:
    a. Birth weight and possible history of problems during pregnancy.
    b. Child's estimated weight.

B. Enhancing Cooperation of the Child Without a Life Threatening Condition:

1. Permit the child a "transition phase;" to gain thier trust before doing the physical exam.
2. Project a calm friendly manner; get on the child's level.
3. Elicit the child's cooperation "Can you point with 1 finger where it hurts?"
4. If the child is uncooperative even with these measures, do not waste time attempting to complete the assessment as you already know much about the condition of the child and that the ABC's are intact.

C. General Guidelines for the Exam:

1. Remain calm and display calmness throughout your approach by using a toe to head approach is less threatening to the child without a life threatening injury.
2. Examine the infant or young child without suspected C-spine injury in the parent's arms or on the caregivers lap.
3. Take advantage of any opportunities the child presents (example, when the child cries it is possible to make many of your important assessments).
    a. Color and moistness of the mouth.
    b. Presence of tears for hydration status.
    c. Breath sounds as the child inspires.

Objective # 6-1.3B Describe the important factors in taking and interpreting vital signs.

- *** Pulse**
- *** Respiration**
- *** Blood Pressure**
- *** Temperature**

Vital signs in the pediatric patient are age dependent (see table).

Table 1.

VITAL SIGNS FOR INFANTS & CHILDREN

Age	Weight kg	Heart Rate	Resp. Rate	BP (Sys)
6 mo	7	90-150	24-36	70-110
3 yr.	15	80-120	20-26	80-120
10 yr.	30	60-90	16-20	90-120
14 yr.	50	60-90	14-20	90-140

A. Pulse:
(see Table 1)

1. Brachial, carotid, or radial depending in size and age of child.
2. Rate increase can occur due to anxiety, pain, fear and fever. Hypothermia can decrease rates.
3. It is important to monitor pulse for at least 30 seconds, or a full minute is preferable.
4. Rate can decrease from normal secondary to hypothermic, cardiac pathology and certain medications.

B. Respiration's:
(see Table 1)

1. **Observe** respiratory rate before beginning exam.
2. Increases can occur as described in # 2 of pulse above.
3. Observe for the following:
   a. tachypnea, bradypnea, or periods of apnea, hyperpnea, and hypopnea.
   b. retractions
   c. nasal flaring
   d. use of accessory muscles of respiration
   e. expiratory grunting, wheezing
   f. crackles, inspiratory wheezing

C. Blood Pressure:
(see Table 1)

1. Formula used to approximate the lower limit of systolic blood pressure by age in children over 2 years of age: 70 + (2 x age in years)
2. The diastolic pressure is 2/3 of the systolic, Median systolic blood pressure in children over 2 years: 90 + (2 x age in years)
3. Blood pressure cuff size can affect accuracy of readings. Appropriate sized BP cuff bladder covers one-half to two-thirds of the child's upper arm.

D. Temperature:

1. Rectal temperature > 38° C (100.4° F) in infants < 2-3 months of age.
2. Rectal temperature > 40° C (104° F) in infants 3- 24 months of age with no localized signs of infection (i.e., cold, cough).
3. Rectal temperature < 36° C (96.8° F).
4. Toxic appearing (looks ill) febrile child of any age.
5. Tympanic temperature: Follow local medical control direction on the indications, use, and interpretations of data.

E. Pulse Oximetry:

Placement of Pulse Oximetry is in proximity to central circulation will have increased or decreased accuracy. Placement is recommended on the earlobe rather than the finger. If oxygen saturation is less than 95%, supplemental oxygen should be administered. Monitor.

Remember other gases such as carbon monoxide bind with hemoglobin much more readily than oxygen. In the event of possible exposure to these agents, the pulse oximeter reading is of no value.

Objective # 6-1.3C Identify a minimum of four significant differences between the adult and pediatric airway which affect ventilation.

Differences Between Adult and Pediatric Airways:

1. Occiput is more prominent in a child.
2. Tongue of child is larger and more anterior.
3. Epiglottis of child is "U" shaped, floppier, and protrudes into the larygopharynx more than in an adult.
4. Trachea in children is shorter and more flexible than an adults:
    a. Infant = 4-5 cm
    b. Child = 8 cm
5. Tracheal rings of child are less well developed.
6. Smallest diameter of airway is at the cricoid ring in infants and children < 8 years of age (in adults, it is at the vocal cords).
7. Larynx of child is more anterior and cephalad (higher toward the head).
8. Vocal cords of child are shorter and concave.
9. Tidal volume of child is dependent on diaphragmatic movement.

Objective # 6-1.5A Evaluate the signs of respiratory insufficiency/failure in pediatric patients.

A. Definition:

1. Inadequate elimination of carbon dioxide (hypoventilation).
2. Inadequate oxygenation of blood (hypoxemia).

B. Early signs and symptoms:

1. Respiratory rate too slow or fast (Table 1).
    a. Tachypnea (rate age dependent).
    b. Bradypnea (rate age dependent).
2. Tachycardia (rate age dependent).
3. Behavioral changes:
    a. Combativeness.
    b. Restlessness.
    c. Anxiety.
    d. Fear
    e. Confusion
4. Nasal flaring, use of accessory muscles.

C. Late signs:

1. Apnea.
2. Cyanosis.
3. Altered level of consciousness (ALOC)

4. Bradycardia: definition
0 - 1 year: HR < 80/min.
> 1 year: HR < 60/min.
5. Cardiopulmonary arrest.

D. Factors predisposing pediatric patients to respiratory distress/failure:

1.Complete or severe partial upper airway obstruction may be caused by epiglottitis, foreign body obstruction, croup.

Signs and symptoms**:**
- Stridor
- Absent breath sounds

2.Complete and/or severe partial lower airway obstruction. May be caused by asthma bronchiolitis, foreign body aspiration, toxic gas inhalation.

Signs and symptoms:
- Wheezes
- Rales
- Tachypnea

3. **Lung disease.** Includes pneumonia, CHF, near drowning.

Signs and symptoms:
- Rales (wet lungs)

4. **Other possible causes of respiratory problems:**
- Trauma
- Neurological Injuries/Illnesses
- Dehydration
- Metabolic derangement

Objective # 6-1.7A Describe the four most common respiratory emergencies in children, the signs and symptoms, and management.

I. EMERGENCY RESPIRATORY CONDITIONS

Overview:

Most common respiratory disorders:
1. Asthma
2. Bronchiolitis
3. Croup
4. Epiglottitis
5. Foreign body obstruction

II. ASTHMA

Definition: Chronic recurrent lower airway disease with episodic attacks of bronchial constriction.
1. Edema
2. Increased secretion of thick mucus from the bronchial glands
3. Spasm of the bronchioles and bronchi
4. Decreased size of bronchiole and mucus causing a lower airway obstruction

A. Assessment:

Signs and symptoms:
1. Respiratory signs-tachypnea, SOB, intercostal retractions, possible positioning to use accessory muscles.
2. Coughing episodes which may trigger vomiting.
3. Color - pale or mottled; lips may be a deep, dark red, which progresses to cyanosis as hypoxemia increases.
4. Mental status - apprehensive and confused.
5. Breath sounds - prolonged expiratory respiratory phase, and generalized inspiratory and expiratory wheezing.

B. Historical Data:

Same as for adult with addition of: *"How concerned are parents about this attack in relation to others?"*

C. Management:

1. Assess and monitor ABC's.
2. Administer high-flow, high concentration O_2 (humidified if possible).
3. Maintain the airway; be alert for possibility of emesis.
4. If child has an inhaler or bronchodilator, assist administration with parent or child as directed by protocol.
5. Be prepared for ventilatory failure.
6. Transport to appropriate facility in the Transport Position of Comfort if not contraindicated.

III. BRONCHIOLITIS

Definition: An infection of the lower respiratory tract.

A. Assessment:

Signs and symptoms:

1. Acute respiratory distress with difficulty breathing.
    a. tachypnea
    b. retractions
    c. cyanosis
2. Fever and cough.
3. Inspiratory and expiratory wheezing.

B. Management:

1. Assess and monitor ABC's.
2. Clear nasal passage and maintain airway.
3. Administer high flow, high concentration 0_2 by mask.
4. Be prepared to assist with ventilation.
5. Transport to appropriate facility in the Transport Position of Comfort if not contraindicated..

IV. CROUP

Definition: An upper respiratory viral infection - Swelling and inflammation of larynx, subglottic tissue, and occasionally the trachea and bronchi.

A. Assessment:

Signs and symptoms:

1. Signs of respiratory distress: nasal flaring, retractions, tachycardia, tachypnea, pallor/cyanosis.
2. Hoarse cry or voice.
3. Seal-like barking cough.
4. Inspiratory stridor, expiratory stridor in severe cases.
5. Low grade fever.

B. Historical Data:

1. All pertinent history with addition of: Does the child have any difficulty swallowing fluids? Is the child drooling?
2. Commonly occurs in children between 6 months and 3 years.
3. More common in the spring and fall.
4. Usually follows cold symptoms by 2-3 days.

C. Management:

1. BLS Management:
    a. Assess and monitor ABC's.
    b. Administer high flow, high concentration 0_2 with face mask, if child won't tolerate - use flow by.
    c. Do NOT agitate with excessive physical exam or handling.

d. Do NOT attempt to visualize the mouth and throat or use any instrument in the airway.
e. Be prepared for respiratory arrest and assist ventilation.
f. Transport to appropriate facility and Allow the child to remain in position of comfort.
g. Position of Comfort if not contraindicated.

V. EPIGLOTTITIS

Definition: Bacterial infection localized in the epiglottis, usually caused by hemophilus influenza, type B (H-flu).

A. Assessment:

Signs and symptoms:
1. Child will look very sick and have a high fever.
2. Sitting in tripod position.
3. May be holding mouth open with tongue slightly protruding.
4. Child has sore throat and refuses to swallow, drooling.

B. Historical Data:

1. Same with addition of:
   a. Does the child have fever? How high? How sudden?
   b. Does the child have a sore throat? Will they swallow?
2. Acute swelling occurs above the glottis that may cause complete obstruction of the airway.
3. Commonly affects children between 3-6 years of age but can occur in older and younger children.
4. Onset is sudden and progression of respiratory distress and airway obstruction is rapid.
5. Child may awaken with high fever, difficulty breathing, sore throat, and difficulty swallowing. **This is a medical emergency.**

C. Management:

BLS Management:
1. Assess and monitor ABC's.
2. Do NOT manipulate the airway. Avoid insertion of any object into the mouth.
3. Do NOT make the child lie down, the swollen epiglottis may fall back and obstruct the airway.
4. Administer high-flow, high-concentration oxygen. Have parent approach child with face mask, if not tolerated give 0_2 by flow-by.

5. Minimize handling to prevent agitation and crying.
6. Transport immediately to an appropriate facility in the Position of Comfort if not contraindicated .
7. If airway obstruction occurs during transport:
    a. Administer positive pressure ventilation.
    b. Be prepared for gastric distention.
    c. Perform CPR if needed.

Objective # 6-1.8A Differentiate between mild, moderate, and severe dehydration.

DEHYDRATION

A. Definition:

1. An acute loss of bodily fluids from:
    a. Fever
    b. Vomitting and Diarrhea
    c. Diabetic ketoacidosis
    d. Trauma
2. Water accounts for a large percentage of total body weight (75% in infants, 60% in children and adults).
    * *Infants are more susceptible to dehydration due to % of fluid.*

B. Assessment:

1. Historical data: SAMPLE
    * *Addition of: "How many diaper changes in the last 4-6 hours?*
    Check fontanelle for depression
2. Classification by degree of dehydration:
    a. Mild:
    Physical signs of dehydration are barely identifiable.
    b. Moderate:
    Dehydration becomes symptomatic with poor skin color and turgor. Dry mucous membranes, decreased urine output and increased thirst and no tears.
    c. Severe:
    Child is in danger of life threatening hypovolemic shock.

C. Management:

1. Mild or moderate dehydration:
    a. Monitor ABC's frequently
    b.Administer high flow oxygen (humidified)
    c. Transport to appropriate facility.

2. Severe dehydration:
    1. Monitor ABC's.
    2. Administer high-flow O_2.
    3. Prepare to administer CPR for circulatory collapse and respiratory arrest.
    4. Transport to appropriate facility.

Objective # 6-1.11A Describe the management of Infants and Children with Altered Internal Thermal Regulation of the body.

THEMAL REGULATORY CAPABILITIES

A. Hyperthermic Conditions

1. Fever is a hyperthermic condition that is the body's response to infection or from alteration in the brain's ability to regulate body temperature.
    a. Fever may be a protective response.
    b. Certain drugs toxicity (ASA, atropine, antihistamines) may cause hyperthermia.
    c. A temperature > or = 103° F (39.6° C) is cause for concern.
    d. Febrile Seizures can occur at 103° F- 105° F in children 6 months to 5 years
2. Hyperthermia may result from environmental (natural or man-made) temperature exposure.
    a. Rise in core body temperature increases O_2 demand and metabolic acidosis.
    b. It stresses the cardiac and respiratory systems evidenced by respiratory fatigue results causing respiratory failure.

B. Assessment:

1. ABCDE
2. Note the child's response to fever as one indication of the seriousness of the child's illness.

C. Management:

1. Fever
    a. Oxygen as required.
    b. Monitor ABC's and vital signs repeatedly.
    c. Remove heavy clothing.
    b. Cooling techniques.
    c. Comfort and positioning.
    e. Transport
2. Hyperthermia:
    a. Monitor ABC's and vital signs frequently.

b. Administer high-flow O_2.
c. Promote rapid cooling by removing clothes, placing in a cooler environment.
d. Transport to appropriate facility

A. Hypothermic Conditions:

1. Hypothermia is when the a core body temperature is equal to or below 95° F (35° C)
   a. A larger ratio of body surface area than adults.
   b. Temperature regulating mechanism lack complete development.
   c. Newborns have less body fat for insulation.
2. Causes of hypothermia:
   a. Prolonged exposure to below normal temperatures.
   b. Metabolic abnormalities from drugs, alcohol, hypoglycemia, etc.
   c. CNS Trauma to temperature regulating area of the brain.
   d. Infection (septic shock)
   e. Initial cooling of extremities concluding with torso (Note: Abdomen last area to get cold!)
3. Physiologic Responses to Hypothermia:
   a. Increased muscle rigidity and higher metabolic rate.
   b. Shivering
   c. Slowing CNS response.
   d. Decreased respiratory/cardiovascular response.

C. Assessment:

1. SAMPLE
2. ABCDE
3. Length of exposure.
4. Ingestion of any drugs or alcohol.
5. Environment.

D. Management:

1. Mild Hyperthermia:
   a. Move to warmer environment.
   b. Remove any wet clothing.
   c. Give warm fluids orally if child is alert.
2. Moderate/Severe Hyperthermia:
   a. ABCDE
   b. High-flow O_2 warmed and humidified
   c. Assist with ventilation if necessary
   d. Perform CPR as indicated.

e. Avoid rubbing extremities to warm
f. Prevent further injury to cold
g. Transport to appropriate facility.
(NOTE: Never rub exposed areas to warm!)

Objective # 6-1.13A List the most common causes of trauma to the child and most frequent injuries to the child with multiple trauma.

PROFILE OF THE INJURED CHILD:

Etiology:

1. Injuries are the major cause of death in children 1-14 years of age.
   a. Leading cases of death associated with pediatric trauma:
      1. motor vehicles 43.8%
      2. burns 14.9%
      3. drowning 14.6%
      4. aspiration 3.4%
      5. firearms 3.0%
      6. falls 2.0%
2. In cases of multi-system trauma, the frequency of injury to major body parts is:
   a. head 48%
   b. extremities 32%
   c. abdomen 11%
   d. chest 9%

Objective # 6-1.14A Describe the steps of the Initial Assessment-Trauma patient. Demonstrate the use of the Pediatric Trauma Score system.

INITIAL ASSESSMENT - TRAUMA PRIORITIES:

NOTE: Conscious children will evaluate your approach by reading your expressions, voice, manners. Remain calm. The child's life may depend on it.

A. Initial Assessment-Trauma:
(See Pediatric Trauma Score)

1. Assess the pediatric patient using the "ABCDE" approach to detect all life threatening injuries.
   a. Airway with stabilization of C-spine
   b. Breathing (ventilation)
   c. Circulation (shock)
   d. Disability (level of consciousness)
   e. Exposure (examine and provide thermoregulation) and emotional support
2. Children with traumatic injuries die of hypoxia and hypoperfusion, secondary to specific injuries.

3. Begin initial trauma assessment.
(Begin focused trauma assessment only after life threatening injuries and conditions have been managed)

B. Airway Assessment with Control of the C-Spine:

1. Look, listen and feel. The child who is crying or talking has an open airway.

** Trauma victims often have internal injuries with potential for respiratory failure and shock.*

2. To open the airway, use the chin lift or jaw thrust
   a. Remember that obstruction can easily be caused in the young child by hyperextending the infant's neck.
   b. Maintain the C-spine with in-line stabilization, keeping the head in the neutral or sniffing position.
3. BLS management of the airway:
   a. Control and stabilize the C-spine in neutral alignment.
   b. Open or secure the airway using the most simple and least invasive maneuver:
      1. Position the child.
      2. Suction with a DeLee or Yankauer apparatus. Head injured children are at risk for post-traumatic seizures and vomiting.
      3. Use an oral airway in the unconscious child.

C. Breathing:

1. Place your face close to the child's and as you feel for the child's exhalation:
   a. Observe the rise and fall of the chest, and in the infants abdomen.
   b. Note the color of the mucous membranes and skin.
   c. Note audible sounds with respiration, such as stridor, bubbling, wheezing, or grunting.
2. Bare the chest and inspect for evidence of injury or visible respiratory effort:
   a. Note any retractions, bulging, deformity, discoloration and bruising.
   b. Note the symmetry of chest excursion and the coordination between the chest and abdomen.

**chest expansion should be symmetric.*

   c. Auscultate the chest for breath sounds.

** note the symmetry and strength of breath sounds, air exchange, and any other sounds such as wheezing.*

d. Count the respiratory rate:
    1. Rates <20 breaths/min. in a small child may indicate chest muscle fatigue (ventilatory failure).
    2. Rates >60 breaths/min. indicate oxygen hunger.

e. Lightly palpate the neck for crepitus, subcutaneous emphysema, or tracheal deviation.

3. Common chest wounds in children:
    a. Blunt trauma leading to pneumothorax or hemothorax.
    b. Penetrating chest injuries are not common, but may occur, leading to an open pneumothorax or tension pneumothorax.
    c. Rib fractures rarely occur due to the flexibility of the rib cage.
4. BLS airway management:
    a. Provide mouth mask ventilations required or BVM.
    b. Administer high-concentration, high-flow oxygen using bag valve mask (BVM) at age specific rate (see Table 1).
    c. Cover open chest wounds immediately with a petroleum gauze dressing or cellophane taped on four sides:
        1. Release the dressing to release pressure dressing if tension pneumothorax develops.
        2. Continuously reassess breathing.
    e. Transport to appropriate facility.

D. Circulation:

1. Check for circulatory perfusion:
    a. Capillary refill is one of the best indicators of perfusion or the presence of early shock in children.
        * *if longer than 2 seconds, hypoperfusion or hypothermia is present. Also consider temperature of location as it may effect cap refill.*
    b. Observe presence and quality of a brachial or radial pulse.
    c. Assess skin color and temperature:
        1. Skin appears mottled if the child is hypotensive.
        2. Pale and clammy skin may indicate shock.
        3. Cyanosis is not an indicator of shock but of poor oxygenation of blood.

d. Listen to heart sounds at the apex for distinct "lub-dub" or any indication of muffled tones. Muffled heart sounds in a child with rapidly deteriorating status may indicate pericardial tamponade.

e. Take blood pressure:

1. If the systolic pressure is less than 70, the child may have lost a significant amount of volume (20-25%).

2. An infant's systolic pressure may be normally less than 70, so correlate with other signs of hypoperfusion.

2. Shock is a generalized state of poor oxygen tissue perfusion at the level of the cells, often resulting from decreased circulating volume.

a. The amount of bleeding from internal injuries is difficult to detect, maintain a high level of suspicion high.

b. To detect the site of internal bleeding, identify other associated signs:

1. Intracranial-neurologic signs such as altered level of consciousness and impaired motor function. Bleeding into the skull may produce shock in infants.

2. Intrathoracic - increasing dyspnea and diminished breath sounds on one or both sides.

3. Intra abdominal – rigid abdominal distention.

c. Signs of compensated shock:

1. Tachycardia - a sustained rate > 130/min. is, in general a good indicator for infants and children.

d. Signs of decompensated shock.

1. Weak central pulses

2. Decrease in systolic blood pressure below 70.

3. Decreased level of consciousness.

e. Control external bleeding:

1. Direct pressure or a pressure dressing over the site.

2. Use your whole hand to place pressure over a scalp laceration in case there is a skull fracture underneath.

3. Elevate the extremity if indicated.

4. Place pressure over a pulse point between the heart and the bleeding site if bleeding is uncontrolled by elevation and direct pressure.

f. Administer high-flow, high concentration oxygen.
g. Place child in Trendelenburg position.
h. Keep child warm.
i. Apply PASG according to protocol if an appropriate size is available. Do not inflate the abdominal compartment.
j. Perform CPR as indicated, per AHA pediatric standards.
k. Transport immediately.

E. Disability

1. AVPU, with appropriate modifications for age, is a good screening tool for determining level of consciousness.
   a. Alert - moving spontaneously, verbal, or crying.
   b. Verbal response - responding to verbal stimuli, either appropriately or inappropriately.
   c. Pain response - responding to painful stimuli only.
   d. Unresponsive to any stimuli, comatose.
   NOTE: See Pediatric Trauma Score CNS area.
2. The Glasgow Coma Scale (GCS): (Table 2.)
   * *provides a standardized quantifiable evaluation of mental status with appropriate modifications for age*
3. BLS and management for altered mental status:
   a. Administer high-concentration, high-flow oxygen.
   b. Hyperventilate at a rate five to ten breaths faster than the child's normal respiratory rate.
   c. Elevate the head and upper body as a unit (reverseTrendelenburg) maintaining immobilization of the spine unless shock is present.
   d. Observe and prepare for a seizure.

F. Exposure:

Protect the child from hypothermia by minimizing exposure of the skin surface to the environment during ABCDE assessment and management.

G. Points to Remember:

1. The entire initial survey to this point should take no more than one minute unless major intervention is required.

2. Quickly complete the entire assessment to learn the full extent of the child's problems. Do not get side tracked with lengthy interventions.
3. At this point you should know whether the child has serious multiple system trauma or not.
    a. If serious multiple system conditions are present, provide the necessary treatment, immobilize, and transport rapidly to the appropriate hospital.
    b. Continue with examination and treatment of life threatening injuries en route to the hospital.
4. Contact medical control and inform them of the status of the child so they are prepared.

Objective # 6-1.14B Describe the Focused assessment of the pediatric trauma patient.

FOCUSED TRAUMA ASSESSMENT

A. Focused Trauma Assessment Guidelines:

Performed in cases of major trauma only after life threatening injuries are stabilized.
    a. Do not delay in the field to do the focused assessment.
    b. If performed, it should be done while en route to the hospital.
    c. Repeat the primary survey frequently; the child's status can change quickly.

B. Essential Components of the Trauma Assessment:

1. Continue obtaining the child's history and **Focused** collecting more details.
2. Perform a head to toe examination to identify any additional injuries.
3. Head and neck:
    a. Inspect the child's head, noting:
        1. Appropriate overall shape to face.
        2. Signs associated with a basilar skull fracture.
            a. Raccoon sign - any bruising around the eyes.
            b. Blood or clear fluid drainage from the ears or nose.
            c. Battle sign-bruising or blue discoloration below or behind the ears.
    b. Palpate the infant's fontanelle for tense bulging; may indicate increased ICP.

c. Observe for spontaneous eye opening.
d. Note if eye movements are coordinated, follow object, or are nonfocusing.
e. Check pupils for size, shape, and reaction to light.

4. Reassess neurologic status. If the child is conscious and old enough to talk, assess verbal responsiveness.
   * *determine if the child is too afraid to respond.*
5. Back:
   * *log roll to place child on back board; inspect and palpate the back and spine.*
6. Chest - assessment completed during the primary assessment.
7. Abdomen:
   a. Palpate, noting any guarding, tenderness, pain, or rigidity.
   b. Inspect for bruising, abrasions, lacerations, or distention.
   c. Check the femoral areas, noting swelling or hematoma and presence of pulses.
   d. Palpate pelvic girdle for tenderness or instability.
   e. Inspect genitalia and perineal areas for hematoma. Blood at the urethra and ecchymosis of the perineum may indicate bladder rupture or pelvic fracture.
8. Extremities:
   a. Inspect and palpate each extremity, noting:
      1. Obvious deformity, swelling, and open wounds with or without exposed bone.
      2. Vascular status distal to the injury by checking:
         a. Presence of a pulse.
         b. Color and temperature of the extremity.
         c. Capillary refill time.
      3. Loss of sensation, pain or tenderness on palpation or motion.
      4. If joint is involved, don't want patient to move site.
      5. Asymmetry to extremities or improper alignment.

b. Persistent pain after immobilization may indicate compartment syndrome:

1. Pressure within the closed space of a muscle increases to the point where the blood supply to the muscle is blocked.
2. Pressure may be caused by hemorrhage, swelling of tissues, or a tight tourniquet-like dressing.
3. Requires emergency surgery.
4. Distal pulses are diminished or absent on assessment and capillary refill time will be delayed in the affected extremity.

9. BLS Management:

a. Continue to assess and manage ABC's and transport patient.

b. Remember concerns about exposure and hypothermia.

c. Provide psychological support to the family by:

1. Communicating events.
2. Involving family in transport of child if possible.
3. Explaining procedure.
4. Touching, which establishes trust.

d. Record all findings:

* *provides legal record and ensures continuity of care.*

Objective 6-1.14C Describe the signs and symptoms that indicate hypoperfusion (shock) in the child.

SHOCK OCCURS WHEN THE CARDIOVASCULAR SYSTEM FAILS TO MAINTAIN BLOOD FLOW TO ORGANS EITHER BY DEFICIENCY IN BLOOD VOLUME OR AN EXPANDED CAPACITY OF THE VASCULAR SYSTEM.

A. History

1. Respiratory illness.
2. Fluid or Blood loss.
3. Decreased fluid intake.
4. Congenital Heart Disease.

B. Sings and Symptoms

1. Mental status:
    a. Weak to absent cough, suck, or gag reflex.
    b. Decreased response to pain.
    c. Weak muscle tone.
    d. Lethargy.
    e. Increased effort of breathing.
2. Respiratory:
    a. Use of accessory muscles of respirations.
    b. Severe reactions.
    c. Grunting.
    d. Cyanosis despite oxygenation.
3. Circulatory:
    a. Delayed capillary refill > 2 seconds.
    b. Cool/cold skin temperature.
    c. Weak thready, or absent peripheral pulses.
    d. Hypotention (late sign).

Objective 6-1.14D List the characteristics of head injury with varying severity.

HEAD INJURIES

A. Epidemiology:

1. Head injury is a significant cause of morbidity and mortality:
    a. Up to 75% of multiple trauma victims have a head injury.
    b. Traumatic brain injury is responsible for 30% of all deaths due to trauma.
2. Children are particularly susceptible to head injury:
    a. They have a higher center of gravity, a greater proportion of body mass is in the upper trunk and head.

b. Musculoskeletal structures of the neck are not as strong as an adult's.

c. Heavier head and upper body causes children to lead head first in any fall or decelerating injury.

B. Anatomy and Physiology:

1. The skull is an enclosed space containing brain tissue, cerebral fluid, and blood, which occupy the space in balance.

a. A child's head is proportionately larger in contrast to body size than an adult's.

b. A significantly larger blood flow goes to the head and brain, and scalp is highly vascular.

c. The bones of the skull are thinner and softer than the adults.

1. In an accelerating-decelerating injury, the child might strike the back of the head, causing the immediate impact of the brain on the skull at the injury site.

2. The brain then bounces inward and the frontal lobes of the brain strike the front of the skull.

b. Injury to the brain commonly results in swelling or hemorrhage.

1. Causes an increase in intracranial pressure and swelling (diffuse cerebral edema) occurs within the confined space of the skull.

2. Young children under 2 years of age can accommodate somegradual swelling as the sutures, not yet fused, can separate in a protective response to the injury.

C. Types of Head Injury:

1. Fractures:

a. Linear skull fracture occurs along a suture line.

b. Depressed skull fracture results from a significant force and causes bruising or laceration of brain tissue underneath the depression.

c. Compound skull fracture is an open fracture, either linear or depressed, under a scalp laceration.

2. Brain injuries:

a. Concussion is a violent shaking or jarring of the brain which results in transient loss of consciousness.

b. Contusion is a severe bruising of the brain with hemorrhage and swelling, generally associated with altered level of consciousness.

c. Hemorrhage:
    1. Epidural-meningeal artery bleeding between the skull and dura.
    2. Subdural-laceration of the vein network between the dura and surface of the brain.
    3. Intracerebral-result of brain laceration.

3. Assessment:
    a. Historical data:
        1. Mechanism of injury.
        2. Circumstances surrounding the injury.
        3. Loss of consciousness, disorientation.
    b. Signs and symptoms:
        1. Alert or altered mental status.
        2. If signs of hypovolemic shock are present, look for other associated injuries and history. (If the patient is an infant with open fontanelle and sutures, the head may have expanded enough from blood pooling to cause hypovolemic shock.)
        3. Basilar skull fracture:
            a. Battle sign
            b. Raccoon eyes
            c. Cerebrospinal fluid leaking from nose to ears
    c. Always protect the cervical spine if you suspect head trauma.
    d. Cranial nerve functioning:
        1. Observe symmetry of facial features when the infant is crying and when quiet.
        2. Sucking and swallowing should be coordinated. No difficulty with feeding should be present.
        3. Check pupillary response to light
    e. Pain sensation:
        1. There is a generalized response in infants under 3 months, such as crying, and moving all extremities.
        2. Infants older than 3 months will withdraw from a painful stimulus applied to an extremity.
    f. Asess airway for teeth, blood, mucus; loss of jaw continuity.
    g. Orientation and mental status.
    h. Palpate the skull for instability or depressions, or bleeding.

i. Note any drainage from nose or ears.

Objective # 6-1.14E Identify the early signs of increased intracranial pressure.

A. Early Signs of ICP:

1. Blood pressure elevated, decreasing heart rate (bradycardia), Cheyne-Stokes respirations.
2. Responsive to pain.
3. Possible demonstration of decorticate or decerebrate posturing.
4. Bulging fontanelle, irritability, listlessness.
5. Altered mental status and three signs of Cushing's Reflex (widening pulse pressure, decreasing heart rate, and abnormal respiratory rate) in children.

B. Late Signs of Increased Intracranial Pressure:

1. Increase in systolic blood pressure while heart rate and respiratory continue to decrease.
2. Fixed and dilated pupils.
3. Flaccid and unresponsive to pain.
4. BLS management:
    a. Assess and monitor ABC's.
    b. If facial injury is present, protect the airway, suction carefully, and remove broken teeth.
    c. If signs of basilar skull fracture are present, do not insert a nasogastric tube, nasopharyngeal airway, or suction catheter into the nose.
    d. Stabilize and immobilize the cervical spine.
    e. Maintain the airway of the unconscious child with jaw thrust and oral airway.
    f. Hyperventilate the child with high-flow, high-concentration oxygen using a BVM at a rate at least 5 breaths per minute faster than the child's usual respiratory rate.
    g. Cover scalp lacerations and apply pressure to stop bleeding, using your entire hand over areas of suspected skull fracture.
    h. Apply saline-soaked gauze to open skull fractures.
    i. Adequate perfusion to the brain must be maintained even with increased ICP, so seek ALS support to manage any associated hypovolemic shock with fluid resuscitation.
    j. Transport immediately.

Objective # 6-1.14F Describe the assessment and management of a child with a suspected spinal cord injury.

SPINAL CORD INJURY

A. Epidemiology:

1. Major causes:
    a. Falls
    b. MVA
    c. Sports injuries
2. Occurs in approximately 1% of all injured children; 18% of children injured in a motor vehicle crash.
3. It is not as common in children as in adults.

B. Anatomy and Physiology:

Physiologic differences in a child's spinal cord are present until eight years of age.

1. There is greater mobility in the cervical spine of a young child because vertebrae are wedge shaped.
2. Because head is heavier, greater stress is placed on the spinal cord in flexion-extension injuries.
3. Fulcrum of neck motion occurs much higher in children (at C2-3 level), leading to more common injuries at the C1, C1, and C3 levels.
4. Neck muscles of an infant are not well developed enough to compensate for the force of some injuries.

C. Types of Injury:

1. Cervical spine:
    a. Assessment:
        1. Always assume a cervical spine injury when any head injury is suspected.
        2. Focused survey-assess for spontaneous and purposeful movement of extremities, sensation in extremities.
        3. Pain in neck on palpation should raise suspicion to a potential cervical spine injury.
    b. BLS and management:
        1. Immediately stabilize cervical spine while performing the primary survey.
        2. Immobilize on backboard. Use a small pad or towel under the shoulders of young children to maintain cervical spine alignment to compensate for large occiput of head.
2. Lumbar spine:
    a. Assessment:

1. In cases of MVA, determine isolated use of lap belt (note car safety seat or shoulder harness).
2. Inspect for abrasion and bruising or laceration in shape of lap belt across the abdomen, CX, and neck.
3. Check for altered sensation and movement in lower extremities and upper extremities.

b. BLS and management:

1. After monitoring the ABC's, place the child on a backboard and immobilize the entire spine.
2. Recognize potential for hypovolemic shock from abdominal organ injury, repeatedly assess for early signs, and intervene according to protocol.

Objective # 6-1.15A Describe between physical, sexual, and physiological maltreatment and neglect.

OVERVIEW

Definition: Child abuse is harm or threatened harm to a child's health or welfare.

Types of Abuse:
1. Physical.
2. Sexual.
3. Physiological maltreatment.

Neglect: Includes failing to provide adequate nutrition, clothing, hygiene, shelter, medical care, or emotional requirements.

A. Description of the Problem:

1. Child abuse is a complex health and social problem.
   * *1 million reported cases per year.*
   * *It occurs in all socioeconomic groups.*
2. It is estimated that 1-3% of children in the United States are abused or neglected.
   * *Approximately 2,000-5,000 children die each year in the U.S. from injuries resulting from abuse.*
   * *In infants under 6 months of age, physical abuse is a major cause of death, second only to SIDS.*

B. Psychosocial Contributors The abusive situation is usually precipitated by a crisis.

to Child Abuse:

1. It is usually associated with a long series of caregiver frustrations or an inability to cope with life's daily problems.
2. The child may have characteristics that place them at high risk for abuse.
    a. Chronically ill
    b. Premature infant
    c. Physically, or mentally challenged
    d. Hyperactive and difficult to manage

Objective # 6-1.15B Describe the range of injuries seen in physical, sexual, and physiological maltreatment and neglect.

A. Physical abuse:

1. Physical abuse involves trauma, to the soft tissue, skeleton, central nervous system, abdominal organs, or teeth which has been inflected on the child with the intent to overpower and harm with violence.
2. Trauma inflicted by battering, burns, shaking, blunt objects, binding and gagging, twisting extremities, and exposure to chemicals.
3. Patterns of physical abuse:
    a. Burns:
        1. Small, round burns or scars, often from cigarettes.
        2. Glove or stocking burns from immersion of hands or feet in hot water; no splash marks.
        3. Demarcated burns in the shape of the object, i.e., iron.
    b. Battering:
        1. Slap marks in the shape of a hand.
        2. Welts showing the shape of the instrument used (electrical cords, ropes).
        3. Bruises in various stages of healing.
        5. Suspicious sites for bruises are the upper arms, trunk, upper anterior legs, sides of face, ears, neck, genitalia, and buttocks.
    c. Shaken Baby Syndrome:
        1. Baby is shaken in frustration and then thrown down.
        2. Bruising and torn blood vessels are caused as the brain stretches and bounces on each side of the skull, resulting increased intracranial pressure (ICP) (see 6.1.14E)

3. Signs:
    a. May see no physical marks on baby.
    b. May have signs of ICP.
    c. Baby may appear to be a SIDS victim, but true cause of death will be determined at autopsy.
    d. Miscellaneous patterns:
        1. Human bite marks.
        2. Marks indicating the child was bound and gagged.
        3. Fractures noted by poor limb alignment or willingness to use an extremity. May be numerous fractures on X-rays.

B. Sexual Abuse:

1. These sexual contacts may include sexual assault or physical force, not only intercourse:
    a. Fondling
    b. Sodomy (with or without instumentatioin)
    c. Exhibitionism
    d. Child pornography and prostitution
2. Signs of sexual usually abuse are subtle.
3. Overt signs of sexual abuse may include but are not limited to:
    a. Disheveled appearance
    b. Bruising of the genitalia.
    c. Lacerations indicating vaginal or anal penetration.
    d. Semen on clothing or body.
    e. Discharge from the vagina or penis, indicating possible STD.
    f. Excessive unexplained genito-rectal bleeding

C. Psycological Maltreatment:

1. Emotional abuse involves failure of the parents to provide the child with support necessary for the development of a sound personality.
2. This may occur by intimidation, subtle or overt rejection, threats, or excessive criticism.
3. This is the most difficult and often goes unidentified.

D. Neglect:

1. Neglect is the endangerment to the health and/or life of a child from failure to provide and maintain the nessecary requirements to sustain a healthy life to include adequate;
    a. Hygiene
    b. Nutrition
    c. Potection
    d. Shelter
    e. Supervision
2. Signs of neglect:
    a. Disshelved or lack of approprite clothes.
    b. Poor or no hygiene.
    c. Poorly nourished, including weight, mental status.
    d. Inappropriate or no shelter from the environment.
    e. Clinical condition of child medically more serious than normal for medical problems.
    f. Obvious sores and lesions in various stages of healing from insect or animal bites.

Objective # 6-1.15C Describe the legal requirement for reporting suspected child abuse.

I. REPORTING SUSPECTED ABUSE

A legal obligation by satute exist for any person to report suspicion of abuse. A report of suspected abuse is confidential and only a request for an investigation. If additional incidents of abuse occur after the initial report has been made, make another request for investigation. If transportation to the hospital is imminent, report suspicions to the hospital personnel. Notify the Department of Human Services county office, local law enforcement, or call the Child Abuse Hotline at 1-800-522-3511. This number is answered 24 hours a day. In OK County call (405) 841-0800.

A. Vital History Includes:

1. How and when did the incident occur?
2. Who was with the child or found the child and did anyone witness the event?
3. What is the subject incedent?
4. Has the child been moved from the scene?
5. Are there other noticeable injuries that the guardian or care provider doesn't account for?
6. Was the incident due to environment and developmental challenges of the child?
7. Do your findings differ with the history provided?
8. Does history provide remain constant or become contradictory with further questioning?

B. Documentation Guidelines:

1. Document only what was described , heard, or encountered according to fact without embelishment or hearse of others.
    a. Use correct sentence structure, and direct quotations. Do not summarize.
    b. Include any discrepancies and contradictions noted in stories of everyone present at the scene.
2. Record the child's physical condition, injuries , etc. as any case.
    a. Describe injuries by appearance, shape color, size location, and stage of healing.
    b. Draw pictures of shapes of injuries and their location on the body.
3. Describe the scene and the setting where the child was examined if different.
4. Record the caregivers and childs behavior and any interaction with each other.

C. Oklahoma State Law Handout (See Appendix A)

II. REACTION OF THE EMS PROVIDERS

It is common for EMT's and paramedics to have strong emotional reactions to child abuse cases, such as anger, frustration, disbelief, and horror.

1. These emotions feelings can get in the way of care, and require self restraint.

2. Remember you are the child's safety advocate.

3. The best way to help the child is to remove them from the situation and take them to the hospital. Display of non-concerted neutrality is required for this to be accomplished successfully.

The following objectives do not correlate with an objective of the new curriculum. EMSC recommends introducing these objectives as *Medical Emergencies.*

Objective # 6-1.ME-A Describe the management for seizures, meningitis and sepsis, including special precautions or requirements.

I. SEIZURES

A. Definition:

Abnormal bursts of electrical discharge in the brain causing exaggerated excessive body movements and altered mental status. Common cause includes:

a. Fever
b. Epilepsy and/or failure to take anti-seizure medicine.
c. Inflammation of the brain (meningitis, encephalitis).
d. Trauma
e. Metabolic disorders (low blood sugar, poisoning).

B. Assessment:

1. Historical data:
   * *Same as for adult with addition of:*
   Behavior during seizure.
2. Signs and symptoms:
   * *Same as for adult with addition of:*
     a. Lip smacking, eye blinking, staring.
     b. Sleepiness following seizure.
3. Status epilepticus:
   a. Prolonged episode 2 minutes without Post-Ictal state.
   b. MEDICAL EMERGENCY.

C. Management:

1. Monitor ABC's.
2. Maintain the airway with jaw thrust and careful suctioning as needed.
3. Do NOT use bit block or oral airway.
4. Administer high-flow O_2 via non-rebreather mask.
5. Protect child from further injury. (Do not restrain during episode and move objects away from child)
6. Immobilize C-spine if injury to head and neck.
7. Transport immediately. (No lights or sirens as they may trigger episodic reaction).

II. MENINGITIS

A. Definition: Bacterial or viral infection of the layers surrounding the meningeal covering of the brain and spinal cord.

a. Bacterial/Viral meningitis can be life threatening unless treated with antibiotics.

b. Usually follows an upper respiratory infection, including tonsillitis or an ear infection.

B. Etiology:

1. Approximately 38,000 cases in children per year.
2. Different bacteria at different ages.

C. Assessment:

1. Historical data:
   * *Same as for illness*
2. Symptoms vary with age.
   a. Acute onset.
   b. Common symptoms to all ages:
      1. Fever; however, newborns may have no fever.
      2. Child appears ill.
      3. Child does not want to be touched or held.
      4. Septic shock possible

D. Management:

1. Management:
2. Monitor ABC's and vital sign frequently.
3. Administer high-flow O_2.
4. Initiate CPR if indicated.
5. Take seizure precautions.
6. Transport immediately.
7. Special precautions if you suspect bacterial/viral meningococcal meningitis is suspected (the child has purpura):
   a. Wear gown, gloves, goggles, and mask throughout patient contact.
   b. Clean ambulance and equipment thoroughly with 10% bleach solution then antibacterial cleanser.

III. SEPSIS AND SEPTIC SHOCK

A. Definition:

1. *Sepsis* - bacterial infection of the blood stream, usually a complication of another infection, often associated with meningitis.

   * *Newborns are at high risk; their immune systems are not well developed.*

2. *Septic shock* - LIFE THREATENING complication of sepsis, shock caused by bacterial toxins cause neurogenic relaxation of blood vessels and pooling of blood in the extremities.

B. Assessment:

1. Historical data
2. Signs and symptoms of sepsis:
    a. Fever (may not be present in infants under 2 months).
    b. Respiratory distress
    c. Vomiting, diarrhea, abdominal distention
    d. Poor sucking and feeding
    e. Pallor, mottled skin or cyanosis
    f. Neurologic signs:
        1. Irritability, altered mental status.
        2. Possible seizures.
    g. Signs of increased intracranial pressure.
3. Signs of septic shock resemble those of hypovolemic shock.
    a. Acute onset.
    b. May result in death in few hours.

C. Management:

1. Monitor ABC's and vital signs frequently
2. Administer high-flow O_2, assist with ventilation as necessary.
    c. Prepare for respiratory and cardiac arrest.
    d. Transport immediately and notify receiving hospital.
    e. MEDICAL EMERGENCY.

Objective # 6-1.ME-B Describe the assessment and management for diabetic ketoacidosis (hyperglycemia) and hypoglycemia.

I. DIABETIC KETOACIDOSIS AND HYPERGLYCEMIA

A. Definitions:

1. Hyperglycemia is a high concentration of glucose in the blood, resulting from a chronic metabolic condition (diabetes mellitus) in which the pancreas does not produce sufficient insulin for the body to properly utilize glucose.
2. Ketoacidosis occurs when the cells cannot use glucose for energy and the body attempts to break down fats to use as energy.

** Results in an excess of organic acids, ketones, which are a by-product of fat.*

B. Assessment:

1. Historical data
2. Signs and symptoms are progressive if the insulin dosage is not adjusted.
    a. Early stage:
        1. Increased thirst (polydipsia)
        2. Increased urine output (polyuria)
        3. Polyphagia
3. Weight loss
    b. Acute stage:
        1. Signs of dehydration.
        2. Tachypnea and hyperventilation.
        3. Fruity breath odor (acetone odor).
        4. Weakness, abdominal pain, generalized aches.
        5. Loss of appetite, nausea and vomiting.
    c. Pre-comatose stage - ketoacidosis:
        1. Altered mental status.
        2. Signs of dehydration.
        3. Increased respiratory and heart rates.
        4. Nausea, vomiting, abdominal pain.
    d. Comatose stage:
        1. Kussmaul respirations
        2. Increased Tachycardia with a thready pulse, weak pulse.
        3. Hypotension.
        4. Rigid abdomen

C. Management:

1. Monitor ABC's and vital signs; check blood glucose level, if available.
2. Protect the airway, to include preventing aspiration.
3. Administer high-flow O_2.
4. Transport to appropriate facility.

II. HYPOGLYCEMIA

A. Definition:

A low glucose < 80 level occurring in known diabetics and newborns can result in neurological diffuculties.

B. Assessment:

1. Historical data:
    a. Known diabetic?
    b. Any juices or sugars given?

c. Any difference in recent insulin dosages or medication?

2. Signs and symptoms:
   a. Mild hypoglycemia - hunger, weakness, tachypnea, tachycardia.
   b. Moderate hypoglycemia – same as mild with altered mental status, seizure, excessive sweating.

C. Management:

1. Monitor ABC's and vital signs frequenly.
2. Perform blood glucose test when available.
3. Give fluids with sugar or glucose paste orally if child is conscious, able to swallow and blood sugar is confirmed.
4. Transport immediately to appropriate facility..

Objective # 6-1.ME-C List signs of stress in a child with congenital heart defect.

CONGENITAL HEART DISEASE

A. Definition:

Birth defect(s) in the heart or its adjacent blood vessel(s) where the blood is permitted to mix in both circulatory pathways (unoxygenated blood to the lungs and oxygenated blood to the body).

* *When blood from both two circulatory pathways mix, hypoxemia usually results.*

B. Assessment:

1. Historical data:
   a. Parents generally know of a heart defect.
   b. What is the child's usual color?
2. Signs and symptoms:

Child in need of care generally develops respiratory distress associated with an acute illness, congestive heart failure, or a "cyanotic episode(s)".

* *Difficulty breathing, tachycardia, altered mental status, cool, moist skin, easily tired and irritable.*

C. Management:

1. Monitor ABC's and vital signs.
2. Maintain airway.
3. Administer high-flow O_2.
4. Assist ventilation as needed.
5. For a cyanotic spell, place the child in the fetal (knee-chest position.
6. CPR if necessary
7. Transport immediately and contact medical control.

Objective # 6-1.ME-D Describe the appropriate Prehospital care for" special needs" infants and children.

CHILDREN DEPENDENT ON HIGH-TECHNOLOGY EQUIPMENT

Children are now cared for at home by their parents with highly sophisticated equipment for a variety of chronic or terminal illnesses.

1. **Premature babies with chronic lung disease.**
2. **Advanced cystic fibrosis.**
3. **Chronic diarrhea.**
4. **Heart defects who get fatigued sucking a bottle.**
5. **Equipment found in the home includes:**
    a. **Ventilators, suction equipment, O_2.**
    b. **IV infusion pumps, feeding pumps.**

A. Reasons Why EMS is Activated:

1. Parents have been taught to manage their child's condition and treat most common emergencies.
2. Called in crisis.
    a. Severe respiratory distress or respiratory failure.
    b. Equipment malfunction.

B. BLS Management:

1. Monitor ABC's frequently.
2. Support the efforts of parents who may already be providing emergency care such as CPR. It is not always necessary to take over for them.
3. In cases of 02 equipment malfunction, transfer patient to to your equipment.
4. Provide transport to the appropriate facility.

PSYCHOMOTOR OBJECTIVES

Objective # 6-1.27 Identify indications for basic airway management in the pediatric patient.

INDICATIONS FOR BASIC AIRWAY MANAGEMENT

A. Medical:

1. Cardiopulmonary arrest.
2. Respiratory arrest.
3. Non-purposeful or no response to pain AND
respiratory rate > 60/min.
respiratory rate < 12/min.
4. Airway obstruction.

B. Trauma:

1. Traumatic full arrest.
2. Traumatic respiratory arrest.
3. Head trauma with no purposeful response to pain or unresponsive.

Objective # 6-1.27A Demonstrate the correct sequence in airway management for pediatric patients with respiratory insufficiency/failure.

A. Assess patient:

Perform airway assessment:

a. Observe of work of breathing, accessory muscle use, respiratory rate, mental status.
b. Auscultation of chest at 3rd intercostal space, mid-axillary line.

B. Manage early respiratory insufficiency / failure:

1. Assure airway is open.
2. Position of comfort.
3. Provide supplemental oxygen.
4. Give nothing by mouth.
5. Transport.

1. Head and jaw position.
2. BLS obstructed airway maneuvers:
   a. Back blows and chest thrusts < 1 year.
   b. Abdominal thrusts (Heimlich) > 1 year.
3. O_2 by mask/nasal cannula.
4. Oropharyngeal/nasopharyngeal airway.
5. Bag-valve-mask (BVM) ventilation.

Objective # 6-1.27B Demonstrate proficiency in sizing and placement of an oropharyngeal (OP) airway.

A. Indications for insertion of OP airway:

1. Assessment of respiratory insufficiency.
2. Assessment of respiratory failure.

B. Contraindications to of OP airway:

1. Conscious or semi conscious patients with gag **insertion** reflex.
2. Unconscious patient who may have ingested a caustic or petroleum based product.

INSERTION OF OP AIRWAY:

1. Determine the appropriate size of airway:
    a. Use Broselow Tape.
    b. Measure on patient.
        1. Place OP airway next to face with the flange at the level of the central incisors, and the bite block segment parallel to the hard palate.
        2. The tip of the appropriate size OP airway should reach the angle of the jaw.
2. Position patient's airway.

A. Medical:

1. Head tilt/chin lift. Degree of extension of the head varies - infants and toddlers: neutral sniffing position.
2. May use towel under the shoulders.
3. Hyperextension should be avoided as it may cause airway obstruction.

B. Trauma:

Jaw thrust with in-line spinal stabilization.

1. Open patient's mouth by applying thumb pressure on chin.
2. Insert OP airway:
    a. Depress tongue with a tongue blade (if available).
    b. Place OP airway down into mouth until flange rests against lips.
    c. If tongue blade is not available, point the OP airway tip toward the roof of the mouth to depress tongue, then insert OP airway until flange is against lips; gently rotate 180° into position. Flange should be resting against lips.

C. Complications of incorrect OP airway size:	1. If OP airway is too small, the tongue may be pushed back into pharynx obstructing the airway. 2. If OP airway is too large it may obstruct the larynx.
D. Complete OP airway insertion procedure:	1. Reassess airway, reposition if necessary. 2. Dispose of, and/or clean contaminated equipment using approved technique.

Objective # 6-1.27C Demonstrate the correct technique for sizing and placement of a nasopharyngeal (NP) airway.

Indications for sizing and placing NP airway:

1. Assessment of respiratory insufficiency.
2. Assessment of respiratory failure.

Contraindications to use of NP airway:

1. Patients < 1 year of age.
2. Nasal obstruction.
3. Potential basilar skull fracture.
4. Major nasofacial trauma.

PREPARATION FOR INSERTION OF NP AIRWAY

A. Medical:

1. Head tilt/chin lift
(Degree of extension of the head varies: Infants and toddlers: neutral sniffing position).
2. May use towel under the shoulders.
3. Hyperextension should be avoided as it may cause airway obstruction.

B. Trauma:

Jaw thrust with in-line spinal stabilization.

Sizing and placing NP airway:

1. Select the appropriate size of NP airway:
    a. Diameter: outside of NP airway should not be larger than diameter of nares.
    b. Length: place NP airway next to face, measure from tip of the nose to tragus of the ear (the tragus is the small cartilaginous projection in front of the opening of the ear).
2. Adjust movable flange (if present) up or down as necessary to provide appropriate length.

NP airway insertion:

1. Lubricate NP airway with water-soluble lubricant
2. Insert airway:
    Right naris:
    a. Insert with bevel towards septum (center of nose).
    b. Advance tip directed along floor of nasal cavity.
    c. Advance until flange is seated against outside of nostril - tip should be in the nasopharynx.

Left naris:

a. Insert airway upside down with bevel towards septum.

b. Advance tip directed along floor of nasal cavity.

c. Rotate tube 180° after inserting airway approximately 1 inch.

3. Caution should be used as insertion of the NP airway may lacerate adenoidal tissue or mucosa, causing bleeding into the posterior pharynx or trachea.
4. No blanching of nares should occur after insertion.
5. Reassess airway after insertion.

Complete procedure: Dispose of, and/or clean contaminated equipment using approved technique.

Complications of nasopharyngeal airway insertion:

1. Small diameter airways may become obstructed by mucus, blood, vomitus or the soft tissues of the pharynx.
2. If airway is too long may cause vagal stimulation or enter esophagus causing gastric distention.
4. Airway may precipitate layrngospasm and vomiting in responsive patients.

Objective # 6-1.28 Demonstrate the correct technique for utilizing the "Broselow Pediactric Emergency Tape".

Preparation:

1. Place patient in supine position.
2. Remove tape from package and unfold.

Procedure:

1. Place tape next to patient, ensuring that side "A" or the multi-colored side is facing up.

2. Place the red end of the tape even with the top of the patient's head.

3. Place the edge of one hand on the red end.

4. Starting from the head, run the edge of the free hand down the tape.

5. Stop hand even with the heel of the foot.(**If the child is larger than the tape, refer to the appropriate adult technique.**)

6. Verbalize the color or letter block on the edge of the tape and weight range where the free hand has stopped.

7. Use the selected color or letter block to identify the appropriate size of equipment.

APPENDIX A
Oklahoma State Law
Regarding Child Abuse

OKLAHOMA STATE LAW RELATING TO THE REPORTING OF SUSPICION OF CHILD ABUSE OR NEGLECT

846. Mandatory reporting of physical abuse of children - Every physician or surgeon, including doctors of medicine and dentistry, licensed osteopathic physicians, residents and interns, examining, attending or treating a child under the age of eighteen (18) years and every registered nurse examining, attending or treating such a child in the absence of a physician or surgeon, and every other person having reason to believe that a child under the age of (18) years has had physical injury or injuries inflicted upon him or her by other than accidental means where the injury appears to have been caused as a result of physical abuse or neglect, shall report the matter promptly to the county office of the Department of Institutions, Social and Rehabilitative Services in the county wherein the suspected injury occurred. Provided it shall be a misdemeanor for any person to knowingly and willfully fail to promptly report any incident as provided above. If the report is not made in writing in the first instance, it shall be reduced to writing by the maker thereof as soon as may be after it is initially made by telephone or otherwise and shall contain the names and addresses of the child and his or her parents or other persons responsible for his or her care, the child's age, the nature and extent of the child's injuries, including any evidence of previous injuries, and any other information that the maker of the report believes might be helpful in establishing the cause of the injuries and the identity of the person or persons responsible therefor if such information or any part thereof is known to the person making the report.

The county office receiving any report as herein provided shall immediately investigate said report and forward its findings to the district attorney's office in the county wherein the suspected injury occurred together with its recommendation as to disposition. In addition, a copy of the findings shall be sent to the Child Welfare Division of the Department of Institutions, Social and Rehabilitative Services which shall be responsible for maintaining a permanent central registry, suitably cross-indexed, of all such reported findings. Any information contained in the central registry shall be available to any county office and to any district attorney's office or public law enforcement agency investigating a report of suspected child abuse or neglect. The Department of Institutions, Social and Rehabilitative Services may promulgate rules and regulations in furtherance of the provisions of this section.

All records concerning child abuse shall be confidential and shall be open to inspection only to persons duly authorized by the State or United States in connection with the performance of their official duties. It shall be unlawful and a misdemeanor for the Commission, or any employee working under the direction of the Department of Institutions, Social and Rehabilitative Services or any other public officer or employee to furnish or permit to be taken off the records any information therein contained for commercial, political or any other unauthorized purpose.

No provision of this section shall be construed to mean that a child has been abused or neglected because said child's parent, guardian or custodian in good faith selects and depends upon spiritual means or prayer for the treatment or cure of disease or remedial care of such child.

847. Immunity from civil or criminal liability. Any person participating in good faith in the making of a report pursuant to this act shall have immunity from any liability, civil or criminal, that might otherwise be incurred or imposed. Any such participant shall have the same immunity with respect to participation in any judicial proceeding resulting from such report.

848. Admissibility of evidence. In any proceeding resulting from a report made pursuant to this act or in any proceeding where such a report or any contents thereof are sought to be introduced in evidence, such report or contents or any other fact or facts related thereto or the condition of the child who is the subject of the report shall not be excluded on the ground that the matter is or may be the subject of a physician- patient privilege or similar privilege or rule against diclosure.

Appendix A

CHECK LIST FOR DETECTION OF POSSIBLE
ABUSE OR CHILDHOOD INJURY

THE CHILD

History

1. An unexplained injury in a young child: especially a fracture in a child under two years of age.
2. An accident history which does not adequately account for the child's injury.
3. An accident history inconsistent with the developmental age of the child.
4. History of a previous accident, easy bruising or frequent falling in a young child.
5. X-ray evidence of unsuspected skeletal trauma.
6. Alleged self-injury in a small baby.
7. Delay in seeking medical care for a significant injury.

Observations

1. Failure to thrive (height and/or weight in less than 3rd percentile).
2. Developmental retardation.
3. Evidence of disturbed parent-child interaction: lack of attachment of child to mother and inappropriate maternal empathy.

Physical Examination

1. Skin and Subcutaneous tissue- (a) Cradle cap, diaper rash, uncleanliness and other evidence of unconcern or unawareness of infant's needs; (b) Cigarette burns, bite marks, grab marks, belt lashes; (c) Ecchymoses, hematomas, abrasions and lacerations unusual for the child's developmental age; (d) Injury of external genitalia; (e) Marks on neck from strangling by hands or rope; (f) External ears traumatized by pinching, twisting, and pulling; (g) Unusual skin rashes which defy dermatological diagnosis; (h) Burns, particularly of the soles of the feet and buttock.
2. Skeletal system- (a) Tenderness, swelling and limitation of motion of an extremity; (b) Periosteal thickening: (c) Deformities of long bones.
3. Head- (a) Cephalhematomas; (b) Biparietal bossing suggesting subdural hematomas; (c) Irregularities of contour resulting from skull fractures; (d) Signs of intracranial trauma.
4. Eyes- (a) Subconjunctival hemorrhages; (b) Traumatic cataracts; (c) Retinal hemorrhages: (d) Papiledema.
5. Ears- (a) Ruptured ear drums from blows to the head.
6. Face- (a) Periorbital ecchymoses; (b) Displaced nasal cartilage; (c) Bleeding from nasal septum; (d) Fractures of the mandible.
7. Mouth- (a) Lacerated frenulum of upper lip; (b) Loosened or missing teeth; (c) Burns of lip and tongue.
8. Chest- (a) Deformity of chest and limitation of motion due to fractured ribs; (b) Subcutaneous emphysema; (c) Hemothorax.
9. Abdomen- (a) Signs of peritoneal irritation from ruptured organs; (b) Abdominal masses from hematomas.
10. Central nervous system- (a) Lower motor neurone paralysis from spinal cord injury; (b) Upper motor neurone paralysis from intracranial injury (c) Neurologic signs varying with location and extent of injury.

THE FAMILY

History

1. Documented history of previous neglect and/or abuse of the patient or another child.
2. A confession of abuse occurs rarely; it may be for the purpose of protecting someone else, frequently a guilty family member.
3. Reports of witnessed abuse are not always reliable.

APPENDIX A (continued)
DETECTION OF BABIES AT HIGH RISK FOR NEGLECT

The following comments will concentrate on overt signs of inadequate parenting. Those high-risk factors can be uncovered without probing questions. Common sense and observations will do. (The silent side of this problem, namely, mothers who really do not like their babies but take adequate care of them anyway, will be ignored in this discussion.) The potential for neglect and abuse correlates better with the findings of a cluster of these signs than of an isolated factor. Most of these factors increase the risk for neglect. However, child abuse and child neglect may be a continuum. Although the majority of cases of child neglect will not evolve into physical abuse, presence of a father who is a known sociopath and any form of harsh discipline.

PRENATAL DATA- Parents' true feelings are less hidden during prenatal visits, and some high-risk factors are apparent even before the baby is born. (1) A mother denies the pregnancy; she may avoid prenatal care until late in the third trimester, present in labor or claim that she did not know she was pregnant. (2) A pregnant woman has sought or attempted abortion unsuccessfully. (3) A mother has agreed to relinquish her baby for adoption (but changes her mind after the child is born.) (4) "Nesting" behavior or home preparation for the forthcoming baby is present. (5) An unwed mother-to-be has recently been abandoned by her family or the baby's father. (6) A mother is drug-addicted or alcoholic and unable to take care of herself or a child. (7) A parent has injured a previous child or had a child temporarily removed because of neglect. (8) The father has a known criminal record for assault or a previous psychiatric diagnosis of sociopath.

DELIVERY ROOM OBSERVATIONS: - The delivery room affords a direct impression of a mother-baby interaction. Immediately after birth the nursing staff should be asked to record the following observations: (1) How does the mother look? (2) What does the mother say? (3) What does the mother do?

Smiling, elation, eye-to-eye contact, acceptance of the baby's sex and appearance and a positive response to his vigorous cry are all early signs of attachment.

NURSERY OBSERVATIONS - The following information can be noted in the newborn nursery by the physician or nurses on duty there. (1) Claiming behavior should be observed before the mother is discharged. It can be normal for a mother to feel that the baby is not hers for a few hours or days; however, if she does not accept the baby as "hers," as evidenced by naming him, wanting to hold him and wanting to feed him by 3 days of age, a serious delay in maternal attachment has occurred and requires evaluation. (2) The mother may consider the child a disappointment, as evidenced by her disparaging comments that he is "ugly," "diseased" or "defective." This situation is especially dangerous if, in truth, the child does not have any of these problems. Most mothers consider their normal newborn infant to be beautiful. (3) The high-risk mother may be revolted by the child's odor, drooling, regurgitation or stools. (4) Postpartum depression occurring on approximately the second or third day after delivery-manifested by crying, anxiety and confusion-may be a serious sign. Sometimes the depression is due to a rapid fall-off in maternal estrogen. More commonly it is due to the fact that the mother is overwhelmed by the demands placed upon her by the new baby, whom she has discovered she does not really want. (5) If the mother goes home before the baby is discharged and then reduces her visiting time, she may not have experienced maternal attachment. This is especially likely to happen to prematures who have a long stay in the hospital. A recent study revealed that visits of fewer than three times in a given 2-week period meant that problems were forthcoming. A reluctance on the part of the mother to take the baby home once he is ready is another reason for concern. (6) The mother who demonstrates her lack of impulse control by spanking the baby or becoming furious at him when he is barely 3 days old is extremely dangerous.

OFFICE OBSERVATIONS- Pediatricians have been assessing the following risk factors for many decades. (1) Some mothers do not pick up their babies while receiving medical care. They leave them lying almost unnoticed on the examining table. (2) Some mothers hold their babies like packages. They let their heads dangle without support or handle them roughly. They avoid body contact by holding them far out on their knee. (3) Some mothers rock their babies but the action is mechanical. They do not smile at them, make eye contact with them; talk to them, sing to them or cuddle them. (4) Some mothers return repeatedly to the physician for minor complaints that cannot be verified. Often such a mother will go to the local emergency room rather than to the

office. Although she is complaining about the child's symptoms, she may be worrying about her ability to cope with him.

Stress Factors

1. Frequent pregnancies with several children of pre-school age.
2. Prematurity.
3. Out-of-wedlock pregnancies.
4. Physically or psychologically absent fathers.
5. Economic stress.
6. Retardation of responsible caretakers.
7. History of alcohol or drug abuse. (The above may or may not be balanced by adequate support systems.)

Special Factors

1. Autocratic child care practices, using physical punishment as a disciplinary measure.
2. Unrealistic expectations for the child to develop regularity in eating and sleeping patterns, early toilet training and correct table manners.

(Check List as modified from Gregg, G.S.; Physician, Child Abuse Reporting Law, and Injured Child. Clin. Pediat., 7:720-725, 1968.)

TREATMENT OF CHILD ABUSE AND NEGLECT GUIDELINES FOR INITIAL MANAGEMENT

1. Hospitalize suspected case.
2. Treat child's injuries or malnutrition.
3. Obtain necessary laboratory tests.
4. Elicit detailed facts concerning injury.
5. Obtain consultation with child abuse specialist within 24 hours if diagnosis in doubt.
6. Tell parents the diagnosis and need to report it.
7. Examine all siblings within 12 hours.
8. Maintain helping approach to parents.
9. Involve the mother in child's hospital care.
10. Report to Child Protective Agency by phone within 24 hours.
11. Refer parents who need crisis psychotherapy.
12. Attend dispositional conference.
13. Provide expert medical testimony for cases going to court.
14. Provide follow-up of physical status.
15. Make sure that the Child Protective Agency is providing psychological follow-up and treatment.

CURRENT PROBLEMS IN PEDIATRICS

"The Pediatrician's Role in Child Abuse and Neglect" by Barton D. Schmitt and C. Henry Kempe, Vol. V, No. 5, March, 1975.

PHYSICAL FINDINGS- Certain physical findings reveal the value of the child to his mother. Hygiene neglect is manifested by an unwashed, smelly baby with long dirty fingernails. Cradle cap sometimes is indicative, but it may be due to unwarranted fear that one should not wash the baby's "soft spot." Uncontrolled diaper rash may result form infrequent diaper changes. If the hair is worn off the back of the head, the baby is probably lying in one position for extended periods of time.

PATTERN OF DISCIPLINE- The mother's comments regarding when and how she disciplines her child can tell a great deal about the child's risk for injuries in the name of discipline. (1) Some mothers talk about disciplining

their baby at a very early age and make it very clear that they do not want a spoiled child. They often try to teach him things that are beyond his capacity before he is 1 year of age. (2) The child may be hit in the waiting room for almost everything he does. (3) The mother may be overheard to threaten her child with "your father will whip you when you get home." (4) The mother may mention the fact that she disciplines her child with a blunt instrument such as a paddle or a belt. (5) If the child states that "he doesn't even care if he is spanked," the discipline enforcement at home is probably our of control. (6) The child is at risk if he is considered very difficult as evidenced by being labeled "Mean," "bad" or "impossible." Some of these children are punished on a daily basis "just because they are bad" rather than because of any specific misbehavior.

HOMICIDAL THREATS- Incipient battering is implied if the mother states, "If someone doesn't do something, I'm going to hurt that child." Parents do not say things like this lightly. The mother is revealing that she is losing control. This is a psychiatric emergency-far from the mother who says, "Some days I could strangle him." When asked, "How close have you come to doing this?", she quickly responds that it is only a feeling she had and she could never strike her child. The true homicidal threat requires that the child be hospitalized for his protection and that the mother have immediate psychiatric help. She may readily agree to voluntary placement of the child in a foster home. A serious error is to tell a mother who wants to place her child to go home and try a new disciplinary approach. The baby may return dead.

CHILD ABUSE AND NEGLECT STATISTICS

10 cases of Abuse/1000 Live Births
38 Reports/100,000 Population/Year
760 Known Deaths/Year

1/3 of Cases Under 6 Months of Age
1/3 of Cases 6 Months-3 Years of Age
1/3 of Cases Over 3 Years of Age

CHILD ABUSE AND NEGLECT SPECTRUM

1. Physical abuse
2. Nutritional neglect (failure to thrive)
3. Drug abuse
4. Medical care neglect
5. Sexual abuse
6. Emotional abuse
7. Safety neglect

CHILDREN AT RISK

1. Males
2. Premature
3. Adopted- Foster- Step
4. Chronic Illnesses
5. Fundamentalists
6. Military
7. Poor

CURRENT PROBLEMS IN PEDIATRICS

"The Pediatrician's Role in Child Abuse and Neglect" by Barton D. Schmitt and c. Henry Kempe, Vo. V, No. 5, March, 1975.

APPENDIX B
Prehospital Pediatric Equipment List
BLS/ALS Units

OKLAHOMA EMERGENCY MEDICAL SERVICES FOR CHILDREN PROJECT

Pediatric Minimum Equipment List

FACT SHEET

The attached equipment list, prepared by the EMS-C Prehospital Care Task Force, was reviewed and approved by the Oklahoma State Department of Health, Emergency Medical Services Advisory Council on October 2, 1992. In December, 1992, the Commissioner of Health, approved this equipment recommendation. In 1993, this pediatric prehospital minimum equipment list, was added to the current EMS Rules and Regulations under Section 3:10; 640-3-23, Equipment for ground Transportation Vehicles, pending legislative approval.

Prehospital pediatric emergency equipment has not been a priority of prehospital care providers in the past. Our examination of the current requirements for the state of Oklahoma identified a lack of pediatric equipment. After examining other standards for pediatric prehospital care equipment the attached list was devised. Standards examined in the development of our list were:

Los Angeles Pediatric Society
California EMS-C Project
National EMS for Children Projects Education Task Group
Pediatric ALS Equipment Recommendations
Maine EMS-C Pediatric Ambulance Equipment List
Recommendations by the ACEP Policy Statement of October, 1991

The Oklahoma EMS-C Project recommended that the entire list be incorporated into the current EMS rules and regulations. Many of the items identified on the attached list are currently being carried as standard equipment by many EMS providers. It is our hope that these additions will assure that correct equipment is available to provide optimal services to pediatric patients. Those individuals responsible for using the equipment will be encouraged to seek and maintain an acceptable knowledge base for equipment use.

OKALHOMA
EMERGENCY MEDICAL SERVICES FOR CHILDREN
PREHOSPITAL CARE TASK FORCE
PEDIATRIC PREHOSPITAL MINIMAL EQUIPMENT LIST

The following items are identified as the required minimum equipment for prehospital pediatric care.

BASIC EQUIPMENT

AIRWAYS: NASAL
Nasopharyngeal airways: 12F, 14F, 16F, 20f, 24f

MASKS AND CANNULA
Simple and non re-breathing masks, infant and child
Pediatric nasal cannula (1)

SUCTION DEVICES
Large bore suction
Suction catheters (flexible and 6F-14F rigid)

BREATHING
Pulse oximeter (optional)
Ventilation equipment:
1 bag valve mask unit, self inflating:
NS, D5 ½
250, 1000 cc bags, without pop off valves, infant and child sizes (1 each)
Oxygen Masks: clear disposable:
neonate, infant, child (1 each)
Ability to deliver 100% oxygen

pump

CIRCULATION
Newborn infant/child BP kit
MAST-pediatric size (optional, for splinting)

DISABILITY AND IMMOBILIZATION
Pediatric traction splint (optional)
Splinting materials of choice to include pediatric sizes
Head and body immobilization system to allow for neutral positioning

CERVICAL AND SPINE
Rigid pediatric cervical collars (3 pediatric sizes, 2 each)

BASIC MISCELLANEOUS
Pediatric trauma score reference
Glasgow Coma Scale Reference
Pediatric resuscitation measuring tape (Broselow)
Number of Poison Control
Approved child restraint device
Chem strips (optional)

INTERMEDIATE EQUIPMENT

ENDOTRACHEAL TUBES
Uncuffed 2.5, 3.0, 4.0, 5.0, 5.5, & 6.0 (2 each)

STYLETS
Stylets for endotracheal tubes:
Infant Child (2)

LARYNGOSCOPE SET AND BLADES
Straight: No. 0 (premature), No. 1 (infant), No. 2 (child)
Curved: No. 3 (medium adult)

INTRAVENOUS MATERIALS
Jelco or angiocaths catheters: 16, 18, 20, 22, 25 Gauge (4 each)
I.V. fluids per medical controls suggest RL,

Tourniquets
Tape
Armboards - Infant and Child
Alcohol and betadine
Macro IV tubing 15 gtt/ml, 60 gtt/ml tubing
Volume limiting infusion set i.e., Burritol or IV

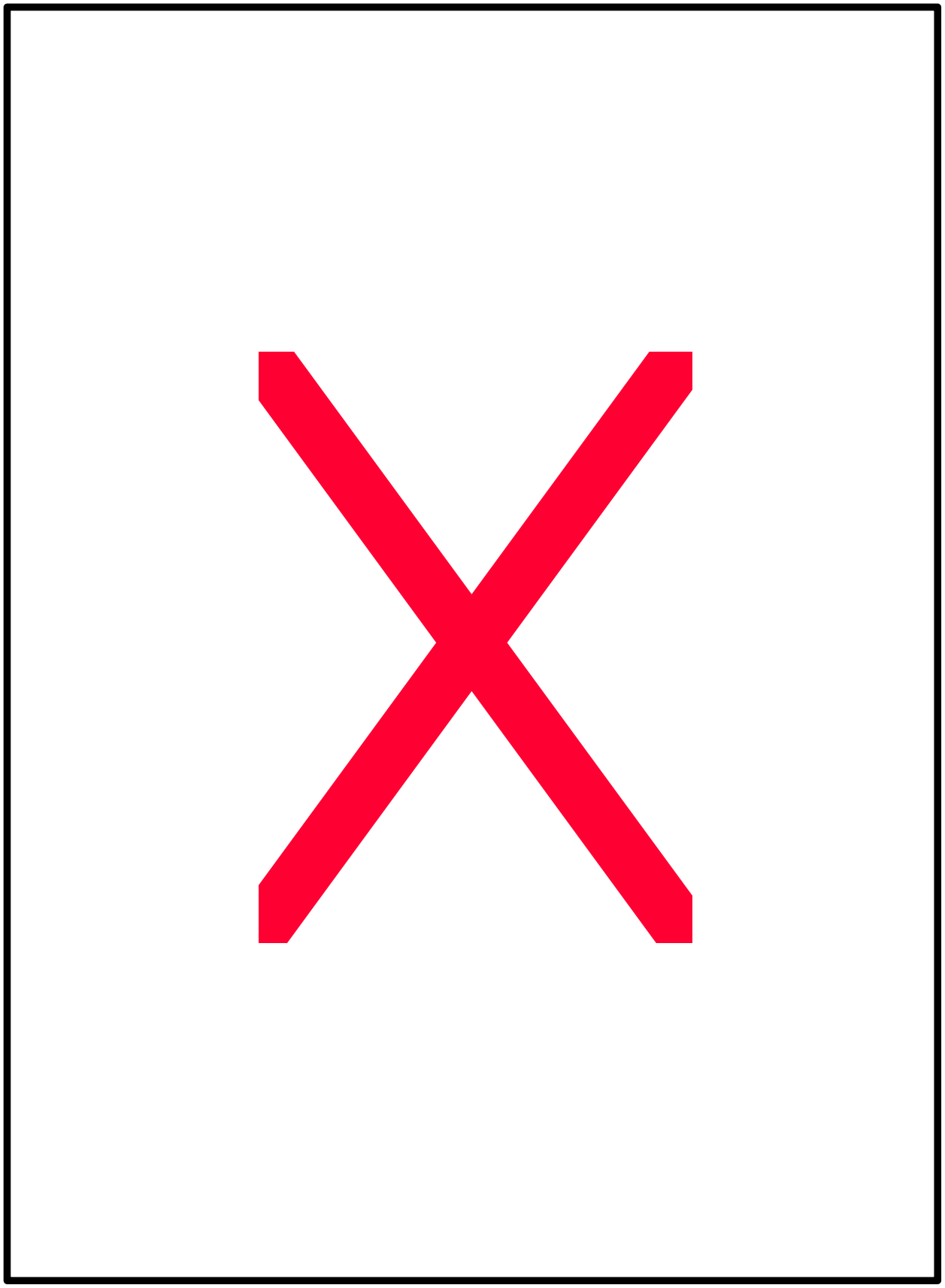
ALTERNATIVE VASCULAR ACCESS
50cc syringe, syringe tip
Intraosseous needles: 16, 18 gauge
Tuberculin syringes: 1cc: (rectal administration of anti-convulsant medication)

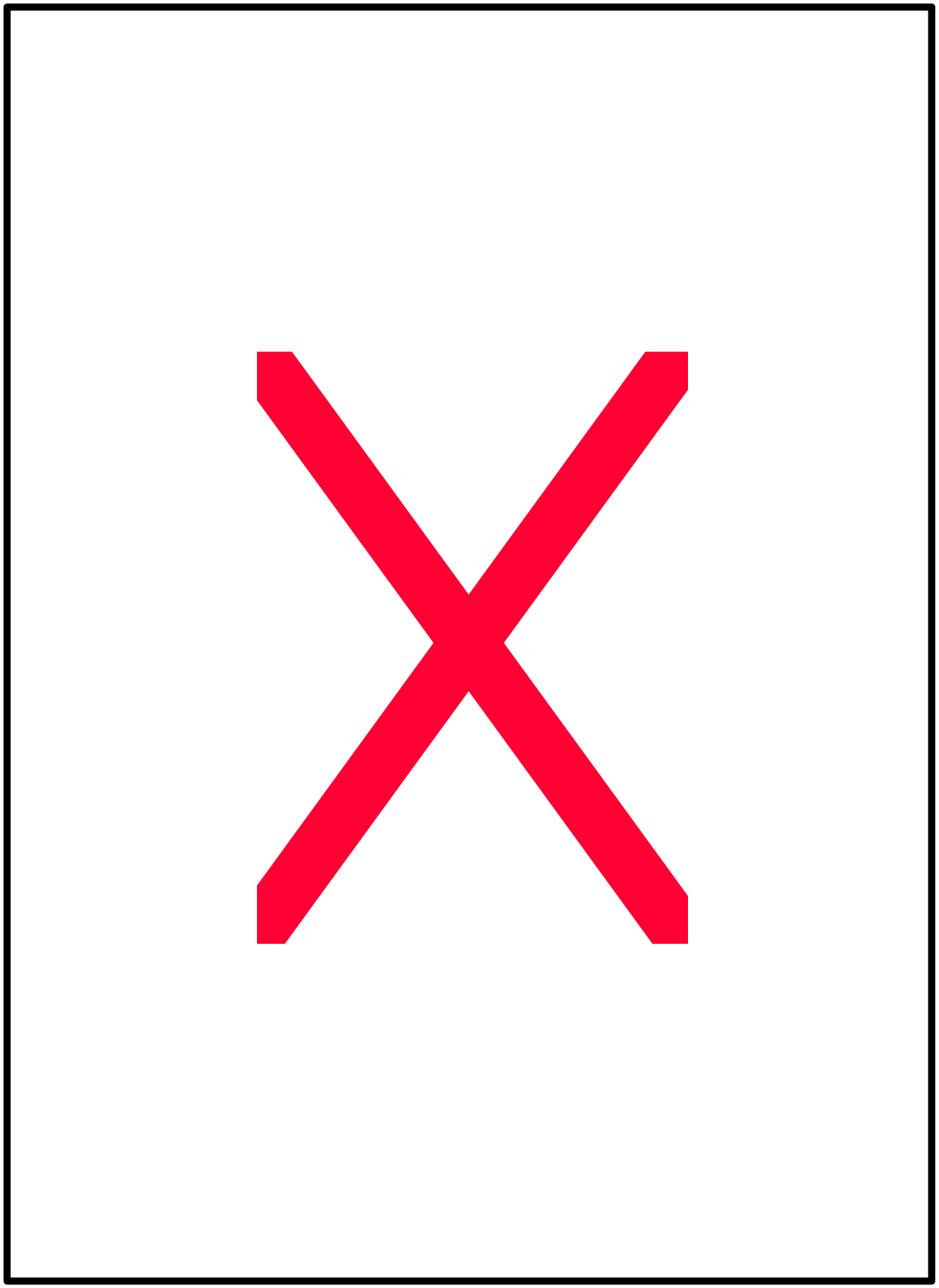
INTERMEDIATE MISCELLANEOUS
Pediatric drug dosage references
Chem strips

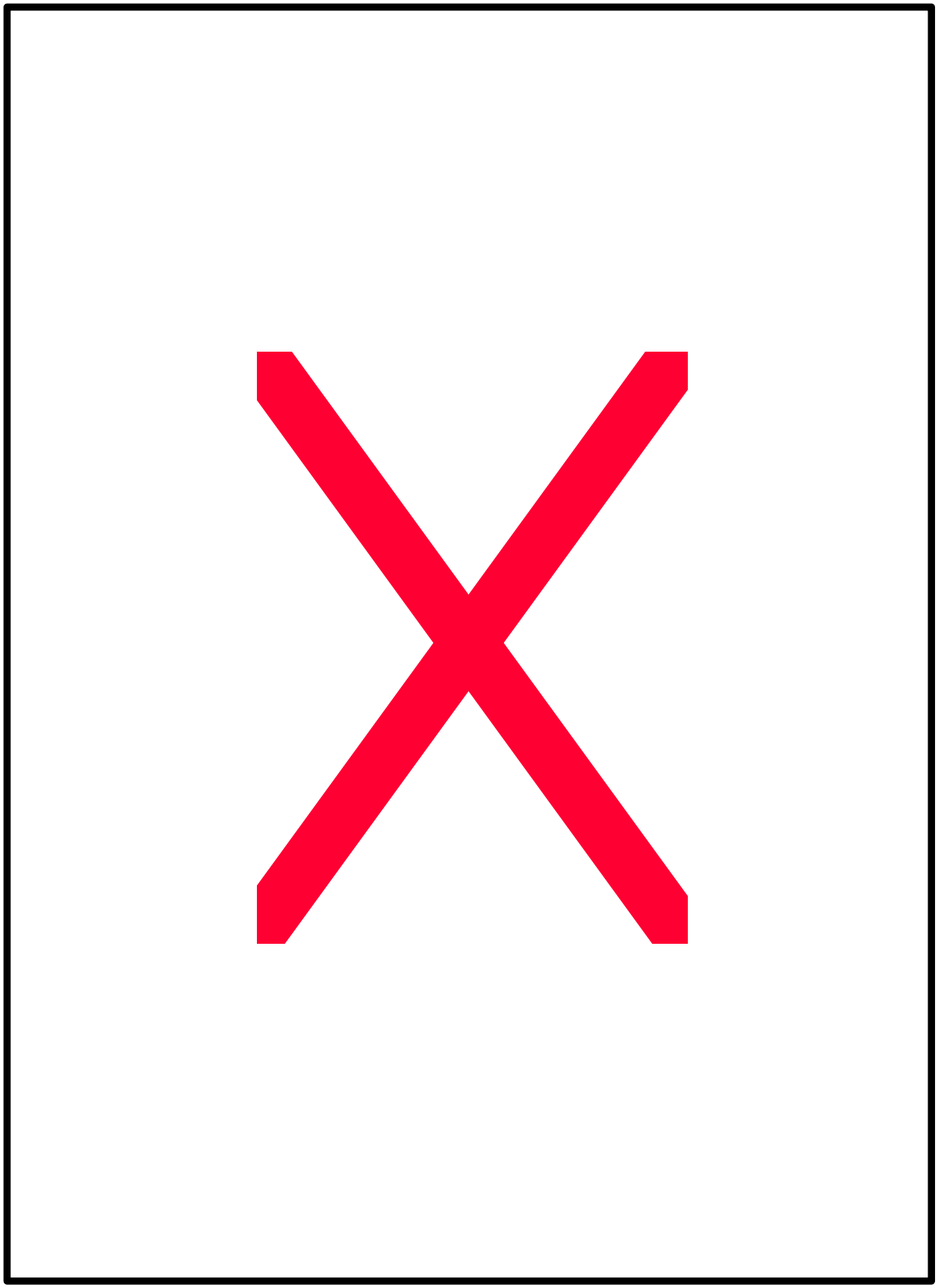
PARAMEDIC

MONITORING
Cardiac monitor defibrillator with pediatric paddles
Pediatric monitor electrodes
Defibrillator/monitor electrodes: (if hands off option available with equipment)
Pediatric Cricothyrotomy Kit (optional)
Nebulizer (optional)

APPENDIX C
Skill Sheets







APPENDIX D
(see Pediatric Trauma Score)

APPENDIX E
Copy Masters/Handouts

EQUIPMENT

Age & Weight Kg (lb)	Airway / Breathing				Circulation
	o_2 Mask	Oral Airways	B-V-M	Suction	B/P Cuff
Premie 1-1.5 kg (2.2-3.3 lb)	Premie Newborn	Infant	Infant	6-8 Fr	Premie Newborn
Newborn 0-6 mos 3.5-7.5 kg (8-16.5 lb)	Newborn	Infant Small	Infant	8 Fr	Newborn Infant
6-12 mos 7.5-10 kg (16.5-22 lb)	Pediatric	Small	Pediatric	8-10 Fr	Infant Child
1-3 yrs 10-15 kg (22-33 lb)	Pediatric	Small	Pediatric	10 Fr	Child
4-7yrs 17.5-23 kg (39-51 lb)	Pediatric	Medium	Pediatric	14 Fr	Child
≥ 8 yrs ≥ 25 kg (≥ 55 lb)	Adult	Medium Large	Pediatric Adult	14 Fr	Child Adult

LEVEL OF RESPONSIVENESS

Level	Infant	Child
A - Alert	**Curious Recognizes parents**	**Alert Aware of surroundings**
V - Responds to voice	**Irritable, cries**	**Opens eyes**
P - Responds to pain	**Cries to pain**	**Withdraws**
U - Unresponsive	**No Response**	**No Response**

GLASGOW COMA SCALE

Activity	Score	Infants (Best Response)	Children & Adults
EYE Opening	4	Spontaneous	Spontaneous
	3	To speech or sound	To speech
	2	To painful stimuli	To pain
	1	None	None
VERBAL	5	Appropriate words or sound; social smile;fixes and follows	Oriented
	4	Cries but consolable	Confused
	3	Persistently Irritable	Inappropriate words
	2	Restless Agitated	Incomprhensible sounds
	1	None	None
MOTOR	6	Spontaneous movement	Obeys commands
	5	Localizes to pain	Localizes to pain
	4	Withdraws to pain	Withdraws to pain
	3	Abnormal flexion (decorticate)	Abnormal flexion (decorticate)
	2	Abnormal flexion (decerebrate)	Abnormal flexion (decerebrate)
	1	None (flacid)	None (flacid)

PEDIATRIC TRAUMA SCORE

Points

Components	*+2*	*+1*	*-1*	*Score*
Weight	**>20 kg (44lb)**	**10-20 kg (22-44lb)**	**<10 kg (<22lb)**	
Airway	*Patent* *	*Maintainable* +	*Unmaintainable* -	
Systolic(cuff) BP (pulses)	**>90mm Hg Radial**	**50-90mm Hg Carotid**	**<50mm Hg Nonpalpable**	
CNS	**Awake**	**LOCΔ**	**Unresponsive**	
Fractures	*None*	*Closed or suspected*	*Mulitple open Or closed*	
Wounds	**None**	**Minorς**	**Major Ω, burns, or penetrating**	
TOTAL SCORE				***-6 to +12 decreases with injury severity***

Generally: **9-12 --- minor trauma**
6-8 --- potentially life threatening
0-5 --- life threatening
<0 --- usually fatal

**** No assistance required***

+ Protected by patient, but constant observation required for position, patency, or O2 administration

- Requires airway adjuncts (OPA, NPA, or ET)and suctioning

D Responds to voice, pain , or temporary loss of consciousness noted

V Abrasion, minor lacerations, burns < 10% not involving face, airway, hands, feet, or genitalia

W Penetrating, major avulsions, lacerations, burns> 10% or burns involving face, airway, hands, feet, or genitalia

VITAL SIGNS FOR INFANTS & CHILDREN

Age	Weight *kg(lbs)*	Heart Rate	Resp Rate	B/P *(Sys)*
NB	**3 (7)**	**100-160**	**30-40**	**70-110**
6MO	*7 (15)*	*90-150*	*24-36*	*70-110*
1yr	**10 (22)**	**90-150**	**22-30**	**70-110**
3yr	*15 (33)*	*80-120*	*20-26*	*80-120*
5yr	**20 (44)**	**70-110**	**20-24**	**80-120**
10yr	*30 (66)*	*60-90*	*16-20*	*90-120*
12yr	**40 (88)**	**60-90**	**16-20**	**90-130**
14yr	*50 (110)*	*60-90*	*14-20*	*90-140*

EQUIPMENT

Age & Weight Kg (lb)	Airway / Breathing				Circulation
	o_2 Mask	Oral Airways	B-V-M	Suction	B/P Cuff
Premie 1-1.5 kg (2.2-3.3 lb)	**Premie Newborn**	**Infant**	**Infant**	**6-8 Fr**	**Premie Newborn**
Newborn 0-6 mos 3.5-7.5 kg (8-16.5 lb)	**Newborn**	**Infant Small**	**Infant**	**8 Fr**	**Newborn Infant**
6-12 mos 7.5-10 kg (16.5-22 lb)	**Pediatric**	**Small**	**Pediatric**	**8-10 Fr**	**Infant Child**
1-3 yrs 10-15 kg (22-33 lb)	**Pediatric**	**Small**	**Pediatric**	**10 Fr**	**Child**
4-7yrs 17.5-23 kg (39-51 lb)	**Pediatric**	**Medium**	**Pediatric**	**14 Fr**	**Child**
≥ 8 yrs ≥ 25 kg (≥ 55 lb)	**Adult**	**Medium Large**	**Pediatric Adult**	**14 Fr**	**Child Adult**

LEVEL OF RESPONSIVENESS

Level	Infant	Child
A - Alert	**Curious Recognizes parents**	**Alert Aware of surroundings**
V - Responds to voice	**Irritable, cries**	**Opens eyes**
P - Responds to pain	**Cries to pain**	**Withdraws**
U - Unresponsive	**No Response**	**No Response**

Vital Signs for Infants and Children				
Age	**Weight *kg(lbs)***	**Heart Rate**	**Resp Rate**	**B/P *(Sys)***
NB	3 (7)	100-160	30-40	70-110
6MO	*7 (15)*	*90-150*	*24-36*	*70-110*
1yr	10 (22)	90-150	22-30	70-110
3yr	*15 (33)*	*80-120*	*20-26*	*80-120*
5yr	20 (44)	70-110	20-24	80-120
10yr	*30 (66)*	*60-90*	*16-20*	*90-120*
12yr	40 (88)	60-90	16-20	90-130
14yr	*50 (110)*	*60-90*	*14-20*	*90-140*

APPENDIX F
Student Outline