Illinois Emergency Medical Services for Children

Pediatric Prehospital Protocols

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Emergency Medical Services for Children SM

2016 EDITION

IDPH
Illinois Department of Public Health

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Preparing People to Lead Extraordinary Lives
LOYOLA UNIVERSITY CHICAGO
Stritch School of Medicine

Illinois Emergency Medical Services for Children
Pediatric Prehospital Protocol Manual
2016

This manual was completed under the direction of the Illinois EMSC Advisory Board

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PEDIATRIC PREHOSPITAL PROTOCOLS

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Acknowledgements

The Illinois EMSC Advisory Board gratefully acknowledges the commitment and dedication of the EMSC Pediatric Prehospital Committee in revising the guidelines and protocols that comprise this document. Their contributions of countless hours of work and collaboration have led to this valuable resource and assists Illinois EMS for Children in striving toward the goal of improving pediatric emergency care within our state.

This document contains protocols and related resources originally developed by Illinois EMSC in 1997. Since that time, this document has undergone multiple revisions. An extensive review and revision of this document was undertaken by the current EMSC Prehospital Committee, culminating in this 2016 Edition.

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ILLINOIS EMERGENCY MEDICAL SERVICES FOR CHILDREN
POSITION STATEMENT
PEDIATRIC PREHOSPITAL PROTOCOLS

Several key prehospital elements in local Emergency Medical Services systems facilitate the delivery of quality field care to children:

- Appropriate education of prehospital providers in the assessment and treatment of acute pediatric illness and injury.
- Standardized and appropriate equipment and medications for the delivery of care to the pediatric population.
- Uniform pediatric-specific treatment protocols.

Prehospital treatment protocols for adult patients are frequently used in EMS systems. Within the State of Illinois there exists considerable variation in treatment protocols based upon local EMT scope of practice, availability of regional resources and differences in medical opinion regarding the delivery of Emergency Medical Responder (EMR), BLS, ILS and ALS care in the prehospital environment. In 1997, the Emergency Medical Services and Trauma Center Code, adopted by the Illinois Department of Public Health, was revised to mandate pediatric specific treatment protocols.

Illinois EMSC strongly endorses the concept of standardized prehospital patient care for the pediatric population at the Emergency Medical Responder (EMR), BLS, ILS, and ALS levels. While most BLS and Emergency Medical Responder field interventions are considered relatively uncomplicated and straightforward, guidelines improve the continuity, quality and consistency of patient care.

Treatment Protocol Guidelines:

1. Within the context of all federally funded EMSC projects, the pediatric population is defined as inclusive of all patients up to the age of 21 years. In this document, pediatric patients are defined as age 15 years and younger, consistent with the Emergency Medical Services and Trauma Center Code adopted by the Illinois Department of Public Health. Other terms commonly applied to the pediatric population include: "newly born" (under 24 hours), "neonates" (1-28 days) and "infant" (1-12 months).

2. Emergency Medical Responder, BLS, ILS, and ALS interventions should be clearly identified within each protocol.

3. Special considerations for pediatric care should be identified within each protocol where appropriate.

4. Drug dosages should be weight-based and given per kilogram. Inconsistencies exist within the prehospital environment secondary to the relatively low volume and exposure to pediatric patients resulting in inaccuracies and possible under- or over-treatment. Therefore, a validated "length-based" or color coded resuscitation tool is highly recommended. Providers should ensure availability of precalculated drug dosing forms based on drug concentrations carried in the EMS system. Also, standardized weight charts should be readily available to the prehospital provider identifying age adjusted vital sign parameters and appropriate sizing of endotracheal tubes.

5. Intravenous fluids administered in the prehospital environment should be a balanced crystalloid solution.

6. A triage mechanism for the rapid and appropriate treatment and transport of "critical patients" (i.e., multiple trauma) to the "most" appropriate facility must be identified.

7. The Pediatric Glasgow Coma Scale should be utilized by all prehospital personnel.

Protocol Recommendations:

Protocols for the treatment and transport of the critically ill and/or injured child should exist in a "freestanding" format isolated from adult protocols or clearly identified in a general protocol, i.e., using the EMSC teddy bear logo to highlight pediatric considerations.

The following areas have been identified as requiring specific treatment protocols:

1. **PEDIATRIC INITIAL ASSESSMENT** - A foundation for all pediatric patient interactions, this guideline should reinforce the need for consistent, methodical patient assessment. The guideline should reinforce the following:

    - Importance of rapid BLS interventions such as airway support and high quality CPR.
    - Age appropriate signs and symptoms of pediatric respiratory distress.
    - Age appropriate airway interventions including the use of "blow-by" oxygen administration.
    - Indicators of adequate ventilation and perfusion.
    - Age appropriate immobilization of the pediatric trauma patient.
    - Recognition of and monitoring for imminent life-threats.
    - Unique assessment considerations and emergent care requirements of children with special health care needs (CSHCN), including those who are technologically dependent. Emphasize the appropriate inclusion of parents/primary caregivers.

2. **INITIAL MEDICAL CARE/ASSESSMENT** – Address the initial assessment and medical care provided to the pediatric patient, including an assessment of scene safety and ensuring body substance isolation. Commonly referred to as "routine medical care" in adult protocols.

3. **NEONATAL RESUSCITATION** - Must incorporate the specific heart rate parameters and requisite interventions according to the American Heart Association (AHA) and American Academy of Pediatrics (AAP) recommendations.

4. **PEDIATRIC AED** – Treatment must be in accordance with the Illinois Department of Public Health approved Pediatric AED protocol and in accordance with American Heart Association guidelines. AED's can be used in any age infant or child. Use of pediatric pads and cables are preferable; however adult pads can be used in an anterior/posterior application.

5. **PEDIATRIC ALLERGIC REACTION/ANAPHYLAXIS** – Protocol should assure differentiation between local reaction (hives), respiratory distress and cardio-respiratory compromise.

6. **PEDIATRIC ALTERED MENTAL STATUS** - Emphasize the importance of recognizing etiology, aggressive airway maintenance, glucose monitoring and naloxone administration.

7. **PEDIATRIC APPARENT LIFE THREATENING EVENT (ALTE)** – The protocol should assist with the recognition of patient characteristics and symptoms consistent with an Apparent Life Threatening Event, and outline appropriate interventions and transport recommendations.

8. **PEDIATRIC BRADYCARDIA** - Treatment in accordance with the current American Heart Association recommendations.

9. **PEDIATRIC BURNS** - Special emphasis on the pediatric "rule of nines" for burn size estimation, aggressive airway management and triage to the appropriate facility. Differentiation should be made between thermal, chemical and electrical injuries.

10. **PEDIATRIC DROWNING** - Emphasize aggressive airway management and the potential for associated cervical spine injury and hypothermia.

11. **PEDIATRIC ENVIRONMENTAL HYPERTHERMIA** – Emphasize appropriate assessment, cooling techniques and fluid replacement considerations of children presenting with environmental hyperthermia.

12. **PEDIATRIC HYPOTHERMIA** - Emphasize the pediatric population at highest risk for hypothermia: neonates and infants. Address aggressive airway management, warming techniques and recognition of frostbite injury. Interventions for arrhythmias in accordance with the American Heart Association recommendations.

13. **PEDIATRIC NERVE AGENT/ORGANOPHOSPHATE ANTIDOTE GUIDELINES** – Define specific antidote dosing based on mild, moderate or severe exposure and patient age/weight.

14. **PEDIATRIC PULSELESS ARREST –** Treatment modalities/algorithms should be consistent with the current guidelines set forth by the current American Heart Association “Pediatric Advanced Life Support” algorithms. Include specific pathway management for VF/VT and Asystole/PEA.

15. **PEDIATRIC RESPIRATORY DISTRESS** - Differentiation should be made between "upper airway obstruction" (i.e., croup, epiglottitis and foreign body) and lower airway disease (i.e., asthma, bronchiolitis, pneumonia). The potential for invasive airway interventions must also be identified.

16. **PEDIATRIC RESPIRATORY DISTRESS WITH A TRACHEOSTOMY TUBE** – Differentiate between an obstructed and patent tracheostomy tube. Identify appropriate assessment and management of the child presenting with respiratory distress with a tracheostomy tube.

17. **PEDIATRIC RESPIRATORY DISTRESS WITH A VENTILATOR** – Address steps in managing a pediatric patient that requires ventilator support. Emphasize to utilize the parents, caregivers and home health nurses as medical resources, and arrange to bring the ventilator to the hospital.

18. **PEDIATRIC RESPIRATORY FAILURE** - Treatment must be in accordance with the current American Heart Association "Pediatric Advanced Life Support" guidelines.

19. **PEDIATRIC SEIZURES** - Must include the identification of rapid blood glucose monitoring in the field, considerations for febrile seizures and administration of intranasal/rectal benzodiazepines.

20. **PEDIATRIC SHOCK** - Differentiation should be made between "hypovolemic" (dehydration, hemorrhagic), cardiogenic, "distributive" (sepsis) and obstructive shock.

21. **PEDIATRIC TACHYCARDIA** - Interventions for both wide and narrow complex tachycardias must be in accordance with the American Heart Association recommendations.

22. **PEDIATRIC TOXIC EXPOSURES/INGESTIONS** - Incorporate accidental /environmental toxic exposure or ingestion events commonly encountered in the pediatric population.

23. **PEDIATRIC TRAUMA** - Emphasis should be made on mechanism of injury, limited on-scene time, aggressive airway maintenance, field triage to the appropriate facility and addressing the unique needs of the head-injured child. Additional information or an addendum specific to initial assessment and management of head trauma should also be included.

24. **SUSPECTED CHILD ABUSE AND NEGLECT** - Special emphasis should be made on careful documentation of physical findings, discrepancy between history of injury and physical findings, interaction between child and parent/caregiver, and characteristics of the environment. Discuss the prehospital provider's responsibility as a mandated reporter, and to report suspicions to the emergency room staff. Include directions for responding to parent/caregiver refusal to allow transport.

ILLINOIS EMERGENCY MEDICAL SERVICES FOR CHILDREN
PEDIATRIC INITIAL ASSESSMENT
ALS/ILS/BLS/EMR GUIDELINE

I. Scene size up

- Identify possible hazards.
- Assure safety for patient and responder.
- Observe for mechanism of injury/nature of illness.
- Note anything suspicious at the scene, i.e., medications, household chemicals, other ill family members.
- Assess any discrepancies between the history and the patient presentation, i.e., infant fell on hardwood floor; however floor is carpeted.
- Initiate appropriate body substance isolation (BSI) precautions.
- Determine the number of patients.

II. General Approach to the Stable/Conscious Pediatric Patient

A. Assessments and interventions must be tailored to each child in terms of age, size and development.
- Make eye contact and smile at the child.
- Keep voice at even quiet tone, don't yell.
- Speak slowly; use simple, age appropriate terms.
- Use toys or penlight as distractors; make a game of assessment.
- Keep small children with their caregiver(s); encourage assessment while caregiver is holding child.
- Kneel down to the level of the child if possible.
- Be cautious in use of touch. In the stable child, make as many observations as possible before touching (and potentially upsetting) the child.
- Adolescents may need to be interviewed without their caregivers present if accurate information is to be obtained regarding drug use, alcohol use, LMP, sexual activity, child abuse.

B. While walking up to the patient, observe/inspect the following:
- General appearance, age appropriate behavior. Does child have a malnourished appearance? Is child looking around, responding with curiosity or fear, playing, sucking on a pacifier or bottle, quiet, eyes open but not moving much or uninterested in environment?
- Obvious respiratory distress/increased work of breathing: retractions, nasal flaring, accessory muscle use, head bobbing, grunting.
- Color: pink, pale, flushed, cyanotic, mottled.
- Position of the child. Are the head, neck or arms being held in a position suggestive of spinal injury? Is the patient sitting up or tripoding?
- Level of consciousness, i.e., awake vs asleep or unresponsive.
- Muscle tone: good vs limp.
- Movement: spontaneous, purposeful, symmetrical.
- Obvious injuries, bleeding, bruising, impaled objects or gross deformities.
- Assess for pain.
- Determine weight - ask child or caretakers or use length/weight tape.

III. Initial Assessment

A. Airway Assessment and Maintenance with Spinal Motion Restriction
- Maintainable with assistance: positioning.
- Maintainable with adjuncts: oral airway, nasal airway.
- Maintainable with endotracheal tube.
- Listen for any audible airway noises, i.e., stridor, snoring, gurgling, wheezing.
- Patency: suction secretions as necessary.

B. Breathing
- Rate and rhythm of respirations. Compare to normal rate for age and situation.
- Chest expansion: symmetrical.
- Breath sounds: compare both sides and listen for sounds (present, absent, normal, abnormal).

- Positioning: sniffing position, tripod position.
- Work of breathing: retractions, nasal flaring, accessory muscle use, head bobbing, grunting.

C. Circulation
- Heart rate: compare to normal rate for age and situation.
- Central/truncal pulses (brachial, femoral, carotid): strong, weak or absent.
- Distal/peripheral pulses: present/absent, thready, weak, strong.
- Color: pink, pale, flushed, cyanotic, mottled.
- Skin temperature: hot, warm, cool.
- Blood pressure: compare to normal for age of child. Must use appropriately sized cuff.
- Hydration status: anterior fontanel in infants, mucous membranes, skin turgor, crying tears, urine output history.

D. Disability - Brief Neuro Examination
- Assess Responsiveness
  - **A** Alert
  - **V** Responds to verbal stimuli
  - **P** Responds to painful stimuli
  - **U** Unresponsive
- Assess pupils.
- Assess for transient numbness/tingling.

E. Expose and Examine
- Expose the patient as appropriate based on age and severity of illness.
- Initiate measures to prevent heat loss and keep the child from becoming hypothermic.

IV. Focused History/Physical Assessment

Tailor assessment to the needs of the patient. Rapidly examine areas specific to the chief complaint.

A. Patient History - Acquire during/incorporate into physical exam.
- **S** **Signs & Symptoms** as they relate to the chief complaint.
- **A** **Allergies** to medications, foods, environment
- **M** **Medications:** prescribed, over-the-counter; compliance with prescribed dosing regimen; time, date and amount of last dose
- **P** **Past Pertinent Medical History**
  - Pertinent medical or surgical problems
  - Preexisting diseases/chronic illness
  - Previous hospitalizations
  - Currently under medical care
  - For infants, obtain a neonatal history (gestation, prematurity, congenital anomalies, was infant discharged home at the same time as the mother)
- **L** **Last oral intake** of liquid/food ingested.
- **E** **Events surrounding current problem**
  - Onset, duration and precipitating factors
  - Associated factors such as toxic inhalants, drugs, alcohol
  - Injury scenario and mechanism of injury
  - Treatment given by caregiver

B. Responsive Medical Patients
- Perform rapid assessment based on chief complaint. A full review of systems may not be necessary. If chief complaint is vague, examine all systems.

C. Unresponsive Medical Patients
- Perform rapid assessment: ABC's, quick head-to-toe exam.
- Emergency care is based on signs and symptoms, initial impressions and standard operating procedures.

D. Trauma patient with **NO** significant mechanism of injury.
- Focused assessment is based on specific injury site.

E. Trauma patient **WITH** significant mechanism of injury
- Perform rapid assessment of all body systems.

V. Detailed Assessment

A. Performed to detect non-life threatening conditions and to provide care for those conditions/injuries. Usually performed enroute. May be performed on scene if transport is delayed.

- Inspect and palpate each of the major body systems for the following:
  - **D**eformities
  - **C**ontusions
  - **A**brasions
  - **P**enetrations/punctures
  - **B**urns
  - **L**acerations
  - **S**welling/edema
  - **T**enderness
  - **I**nstability
  - **C**repitus

- Auscultation of breath and heart sounds as well as blood pressure readings may be required in the field.

VI. Ongoing Assessment

To effectively maintain awareness of changes in the patient's condition, repeated assessments are essential and should be performed **at least every 5 minutes on the unstable patient**, and **at least every 15 minutes on the stable patient.**

VII. Considerations for Children with Special HealthCare Needs (CSHCN)

- Track CSHCN in your service community and become familiar with both the child as well as their anticipated emergency care needs.
- Refer to child's emergency care plan formulated by their medical providers, if available. Understanding the child's baseline will assist in determining the significance of altered physical findings. Parents/caregivers are the best source of information on: medications, baseline vitals, functional level/normal mentation, likely medical complications, equipment operation and troubleshooting, emergency procedures.
- Regardless of underlying condition, assess in a systematic and thorough manner.
- Use parents/caregivers/home health nurses as medical resources at home and enroute.
- Be prepared for differences in airway anatomy, physical development, cognitive development and possibly existing surgical alterations or mechanical adjuncts. Common home therapies include: respiratory support (oxygen, apnea monitors, pulse oximeters, tracheostomies, mechanical ventilators), nutrition therapy (nasogastric or gastrostomy feeding tubes), intravenous therapy (central venous catheters), urinary catheterization or dialysis (continuous ambulatory peritoneal dialysis), ostomy care, orthotic devices, communication or mobility devices, or hospice care.
- Communicate with the child in an age appropriate manner. Maintain communication with and remain sensitive to the parents/caregivers and the child.
- The most common emergency encountered with these patients is respiratory related and so familiarity with respiratory emergency interventions/adjuncts/treatment is appropriate.

ILLINOIS EMSC
INITIAL MEDICAL CARE/ASSESSMENT
BLS/EMERGENCY MEDICAL RESPONDER CARE GUIDELINE

- Assess scene safety
- Ensure Body Substance Isolation (BSI)
- Assess and support Airway, Breathing, Circulation (ABC's)
- Assess mental status
- Administer 0_2 per appropriate method
- Support with bag mask ventilation as indicated
- Test blood glucose as indicated and **if available**
- Apply Pulse oximetry as indicated and **if available**

The Illinois EMSC Prehospital Committee has exercised extreme caution that all information and drug dosages presented are accurate and in accordance with professional standards in effect at the time of publication. This prehospital care guideline may be modified at the discretion of the EMS Medical Director. It is recommended that care must be based on the child's clinical presentation, and on authorized policies and protocols.

ILLINOIS EMSC
INITIAL MEDICAL CARE/ASSESSMENT
ALS/ILS CARE GUIDELINE

- Assess scene safety
- Ensure Body Substance Isolation (BSI)
- Assess Airway, Breathing, and Circulation (ABC's)
- Assess mental status
- Administer 0_2 per appropriate method
- Support with bag mask ventilation as indicated
- Test blood glucose as indicated
- Apply Cardiac monitor as indicated
- Apply Pulse oximetry as indicated

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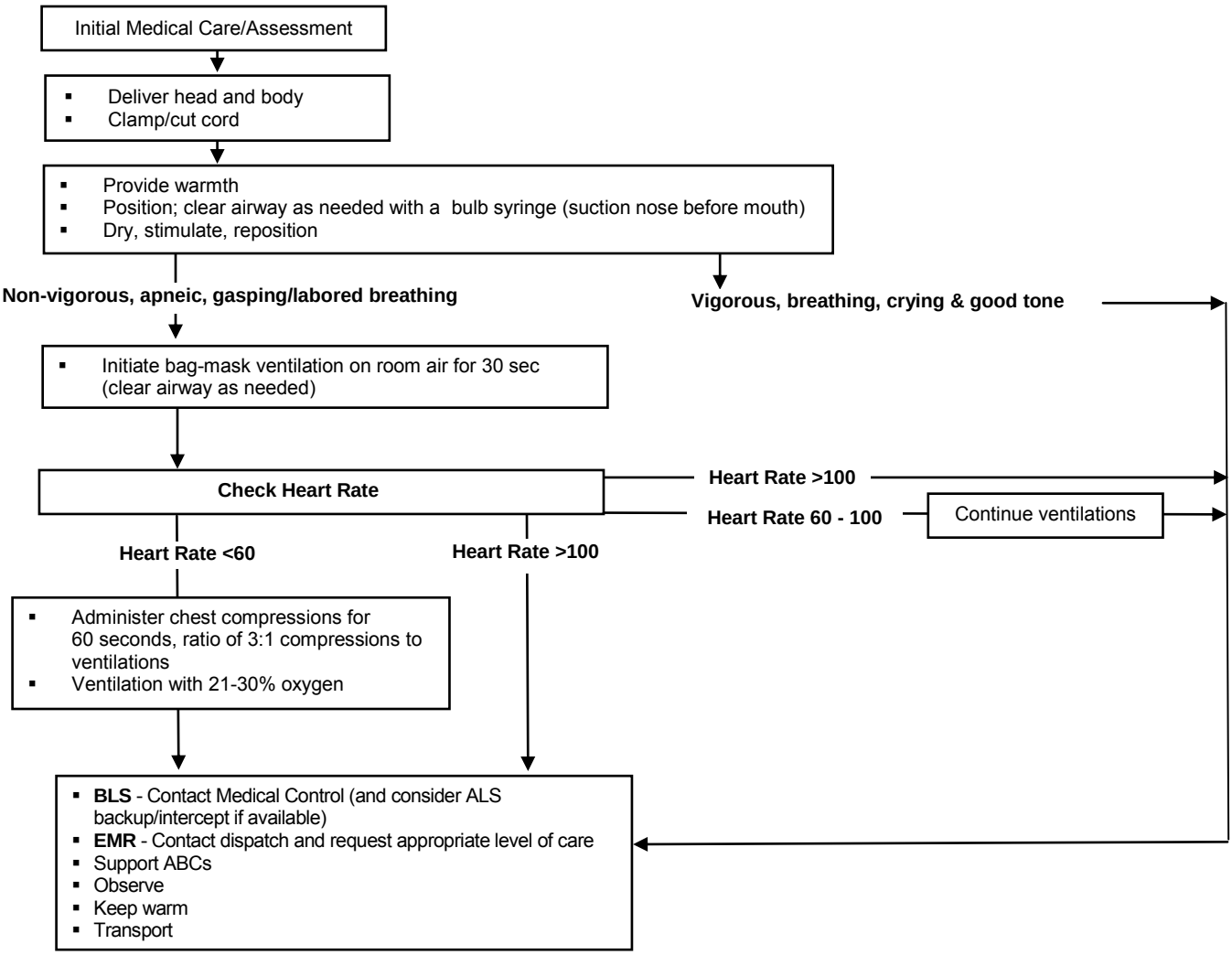
ILLINOIS EMSC
NEONATAL RESUSCITATION
BLS/EMR CARE GUIDELINE



Special Considerations:

- Focus should be on neonate appearance (tone, breathing, crying).
- Consider APGAR at 1 min, repeat every 5 mins. Do not interrupt resuscitation efforts to obtain APGAR.

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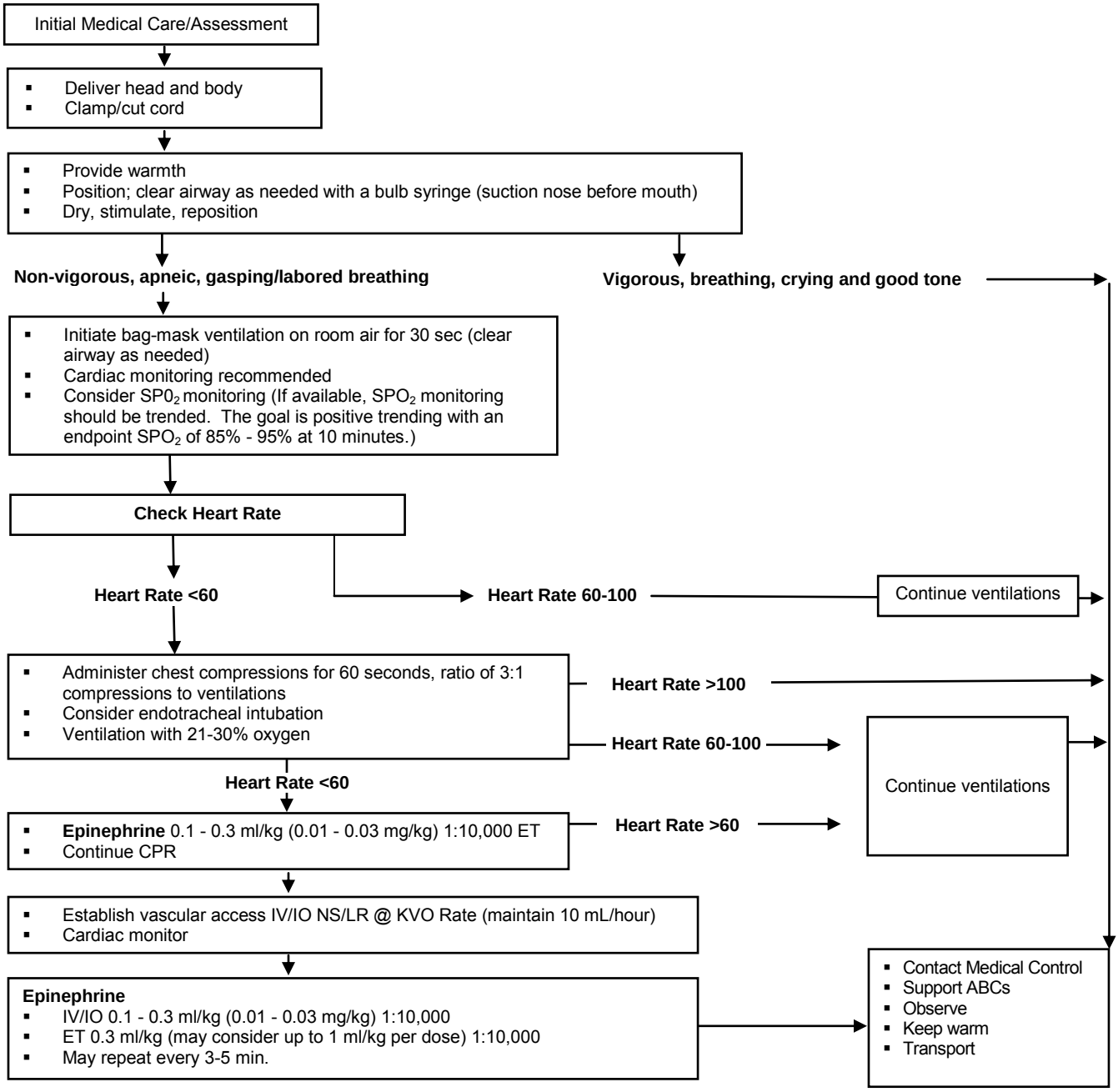

Special Considerations:

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Per Medical Control consider:

- D10% at 2 mL/kg; or D12.5% 1-2 mL/kg IV/IO (Dilute D25% 1:1 with sterile water to create D12.5%)
- Fluid Bolus 10 ml/kg NS/LR
- Naloxone 0.1 mg/kg IV/IO/ET

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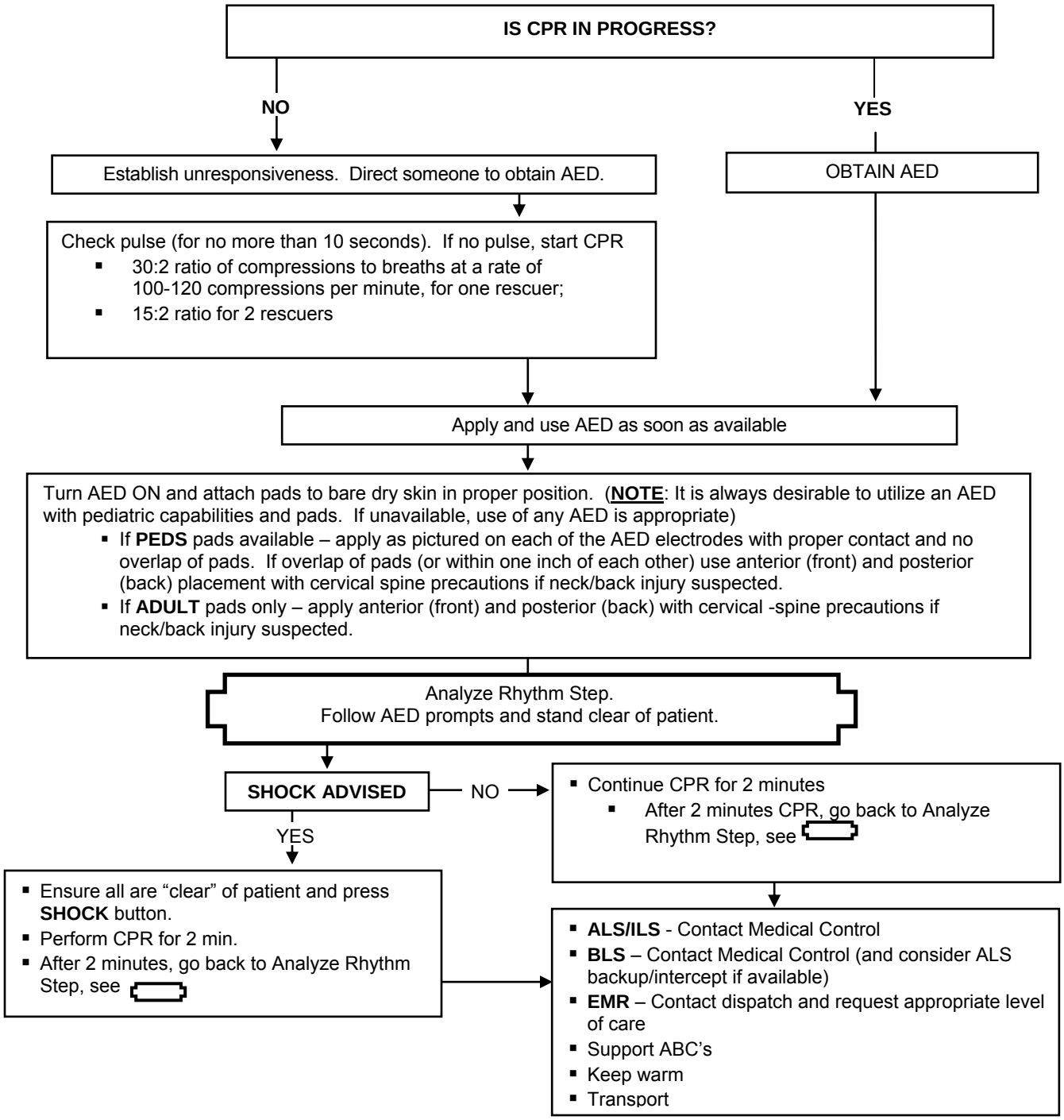
ILLINOIS EMSC
PEDIATRIC AED PROTOCOL
ALS, ILS, BLS, EMR GUIDELINE



Special Considerations:

- If injury or neck/back trauma suspected, maintain spinal motion restriction.
- Remove patient from hazardous environment or standing water prior to use of AED.
- If AED in place, EMS personnel should let AED complete rhythm analysis prior to switching to manual defibrillator.

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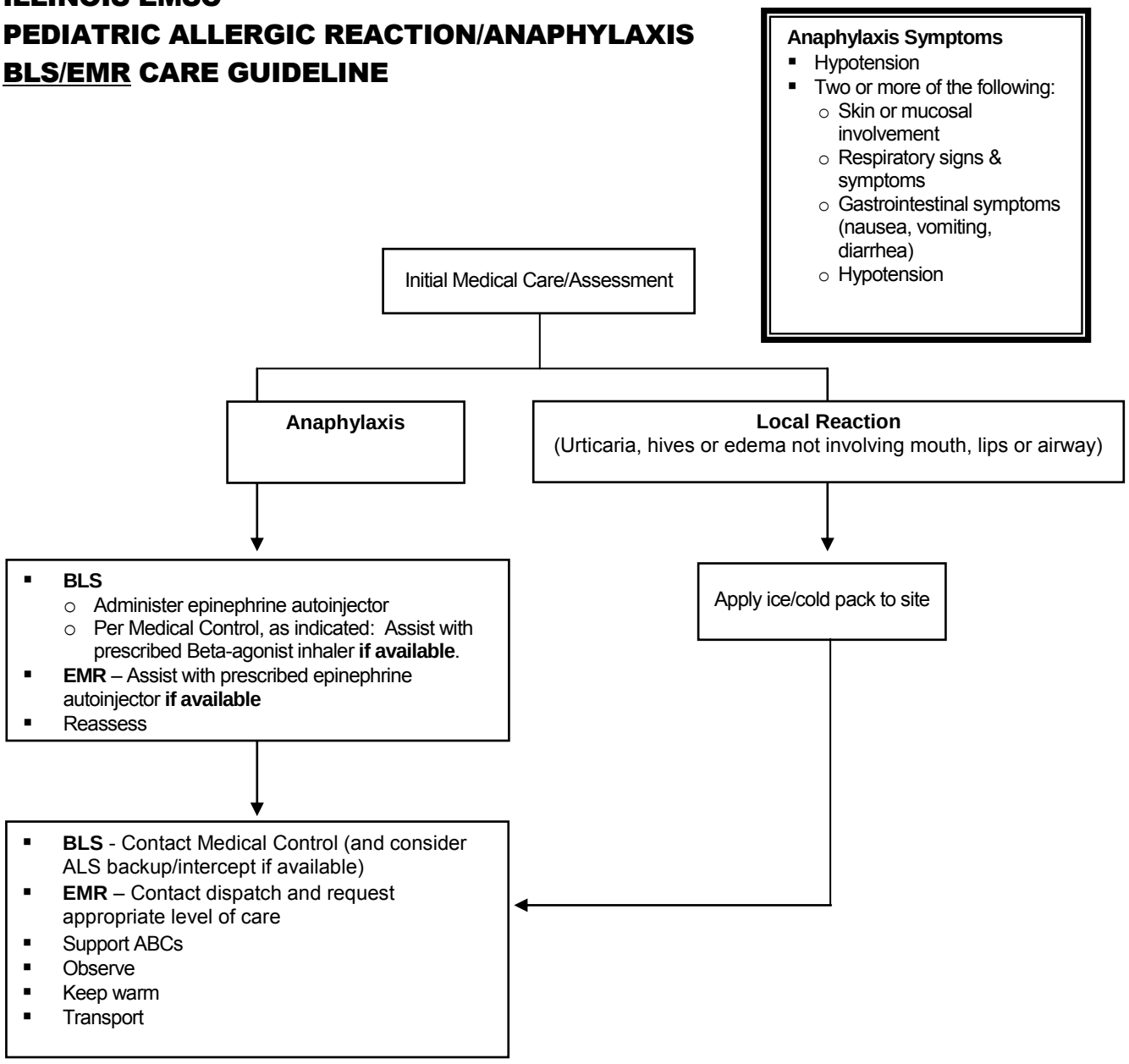
ILLINOIS EMSC
PEDIATRIC ALLERGIC REACTION/ANAPHYLAXIS
BLS/EMR CARE GUIDELINE



Special Considerations:

- **Epinephrine autoinjector (i.e. Epi-Pen/Epi-Pen Jr/Auvi-Q)** – use a 0.3mg auto-injector for children over 30kg and 0.15mg auto-injector for children less than 30kg.
- Consider use of patient's personal epinephrine autoinjector if additional doses needed.
- **Beta-agonist MDI** inhalers include, among others, **Albuterol (Proventil, Ventolin)** and **Levalbuterol (Xopenex).** An inhaler should be administered through a holding chamber or spacer device **if available**.
- Combination Beta-agonist/corticosteroid inhaler can be used per medical direction.

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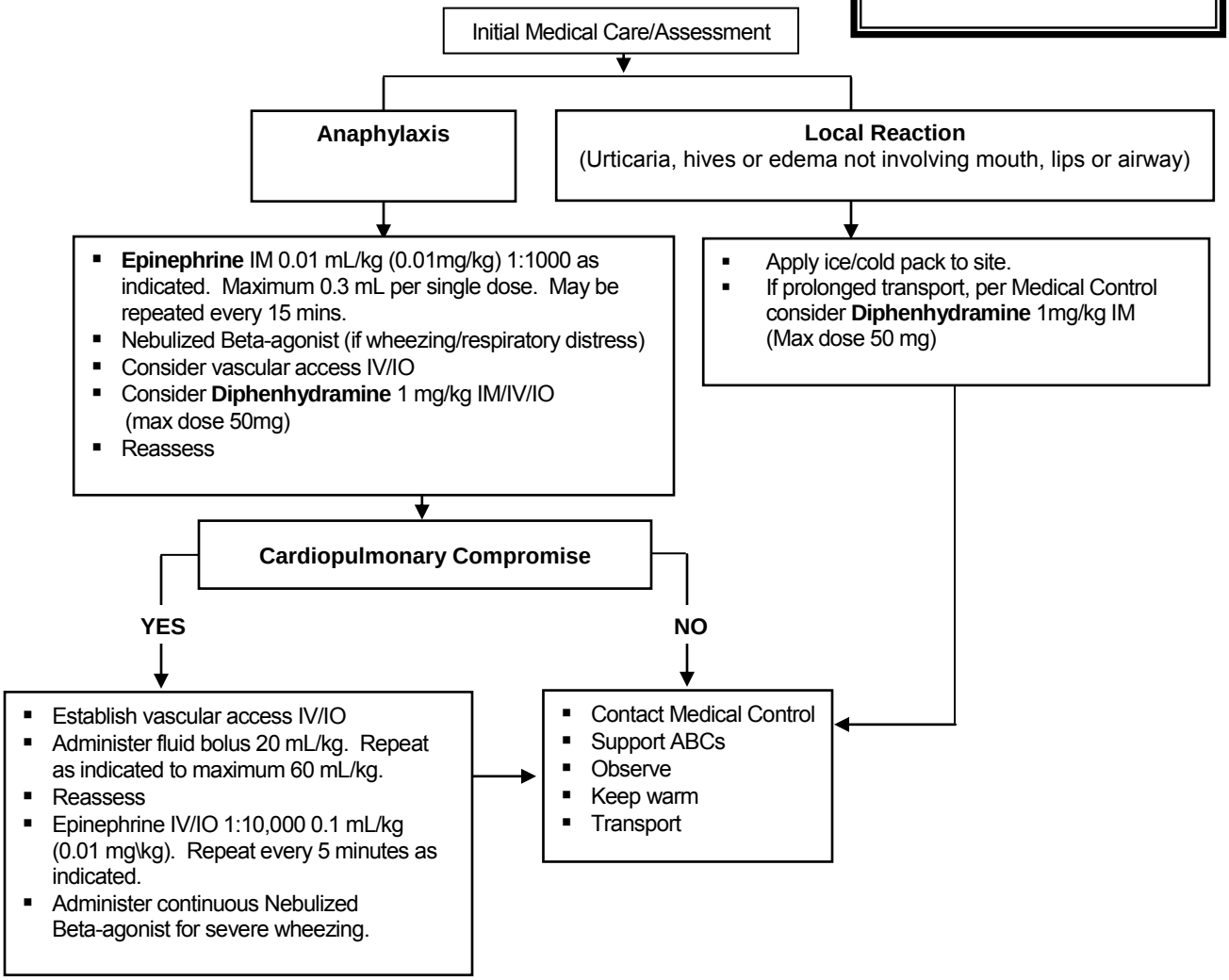
ILLINOIS EMSC
PEDIATRIC ALLERGIC REACTION/ANAPHYLAXIS
ALS/ILS CARE GUIDELINE

Anaphylaxis Symptoms
- Hypotension
- Two or more of the following:
  - Skin or mucosal involvement
  - Respiratory signs & symptoms
  - Gastrointestinal symptoms (nausea, vomiting, diarrhea)
  - Hypotension



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- Combination Beta-agonist/corticosteroid inhaler can be used per medical direction.
- Consider IV steroids per Medical Control if available.

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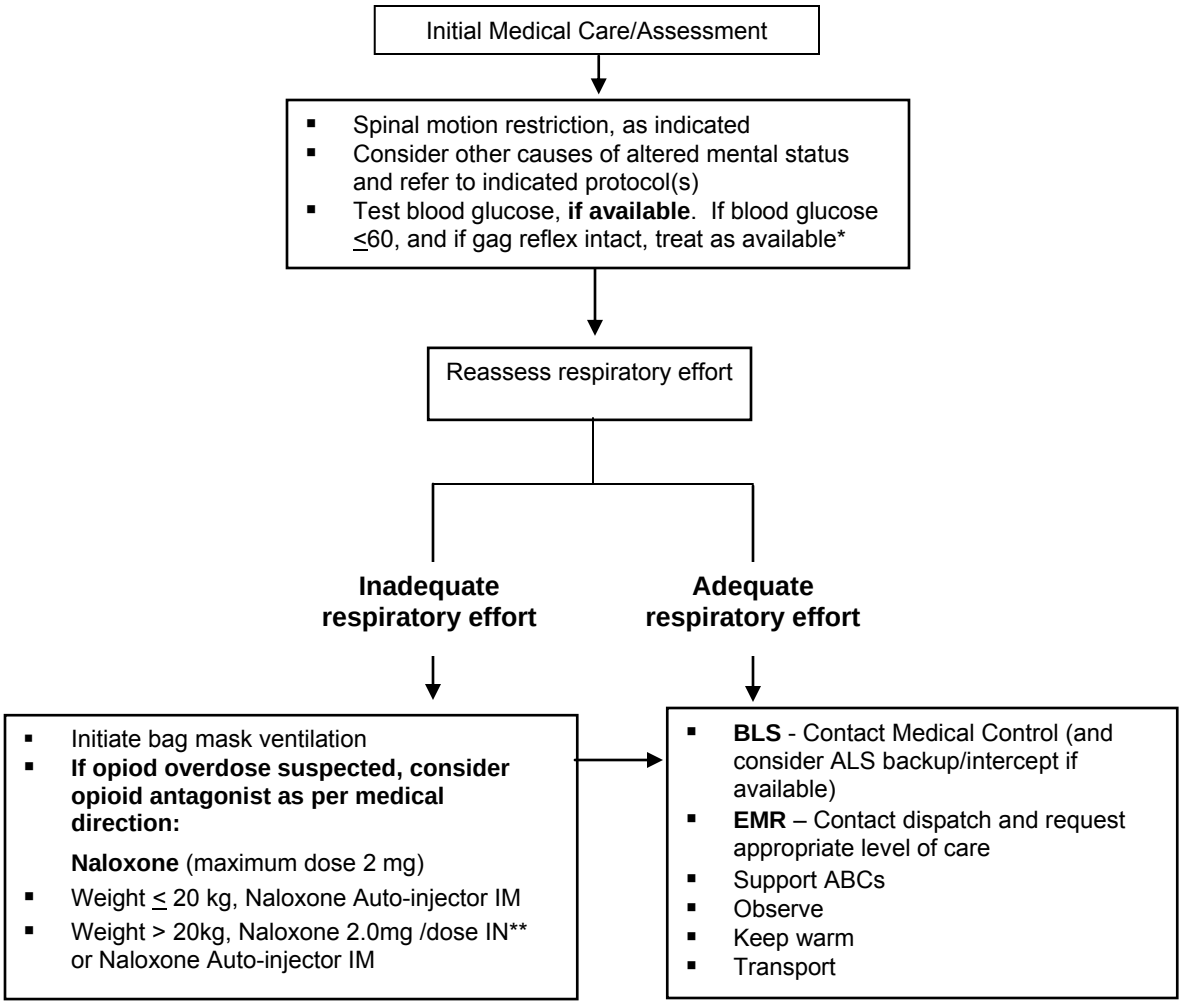
ILLINOIS EMSC
PEDIATRIC ALTERED MENTAL STATUS
BLS/EMR CARE GUIDELINE



Special Considerations:
Consider causes:

A	Alcohol, abuse	**T**	Trauma, temperature
E	Epilepsy, electrolytes, encephalopathy	**I**	Infection, intussusception, inborn errors
I	Insulin	**P**	Psychogenic
O	Opiates, overdose	**P**	Poison
U	Uremia	**S**	Shock, seizures, stroke, space-occupying lesion, subarachnoid hemorrhage, shunt

*Examples of treatment for hypoglycemia if gag reflex intact: glucose paste, sugar, cake icing.

**For intranasal administration, use nasal atomizer and administer no more than 1 mL per nostril.

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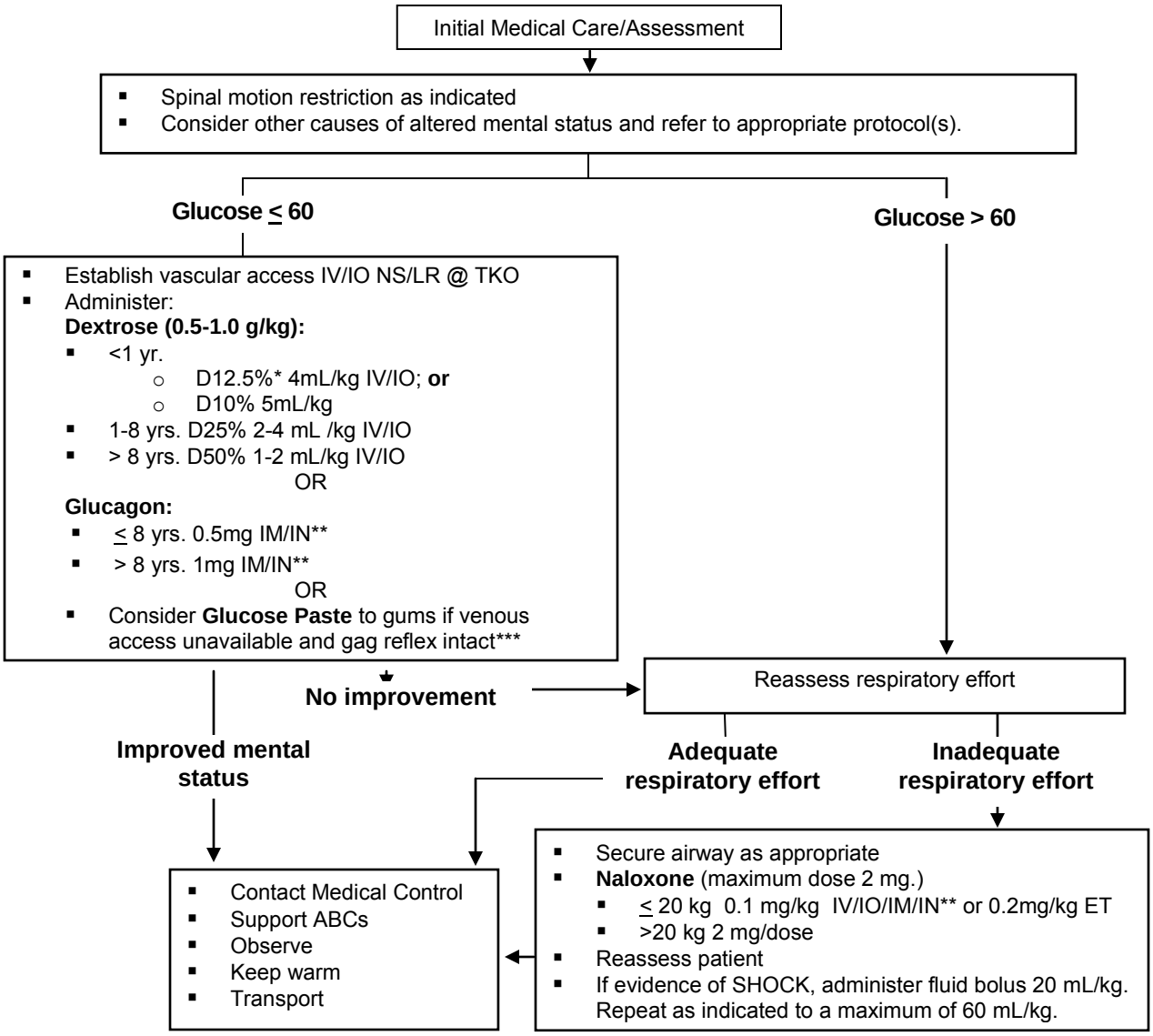
ILLINOIS EMSC
PEDIATRIC ALTERED MENTAL STATUS
ALS/ILS CARE GUIDELINE



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O	Opiates, overdose	**P**	Poison
U	Uremia	**S**	Shock, seizures, stroke, space-occupying lesion, subarachnoid hemorrhage, shunt

* To make **D12.5%** dilute **D25%** 1:1 with sterile water.
**For intranasal administration use nasal atomizer, and administer no more than 1 mL per nostril.
***Examples of treatment for hypoglycemia if gag reflex intact: glucose paste, sugar, cake icing.

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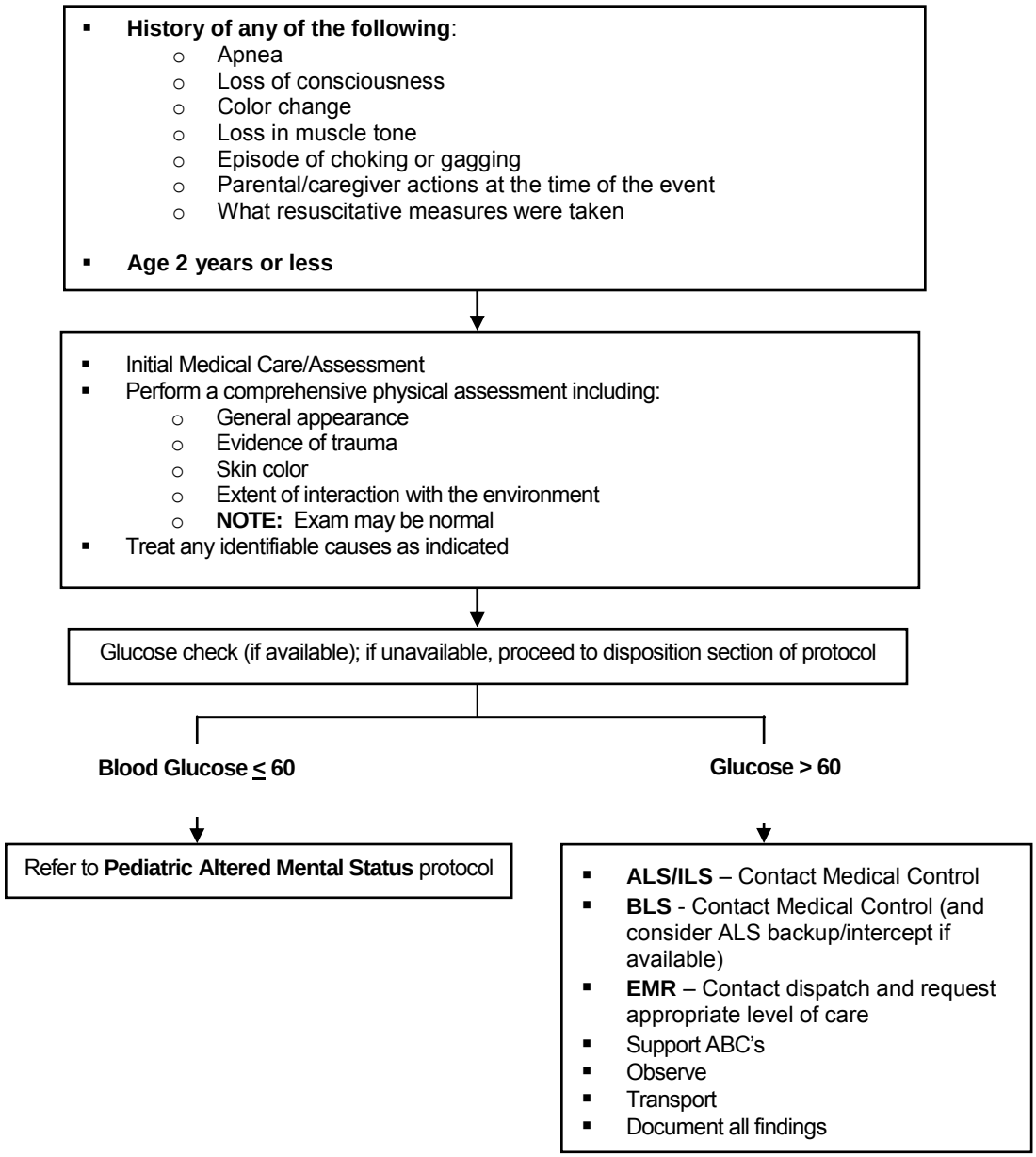
ILLINOIS EMSC
APPARENT LIFE-THREATENING EVENT (ALTE)
ALS/ILS/BLS/EMERGENCY MEDICAL RESPONDER CARE GUIDELINE



SPECIAL CONSIDERATIONS:

- **All ALTE patients should be transported for medical evaluation, even the well appearing child.**
- Assume the history given is accurate.

DEFINITION: An Apparent Life-Threatening Event (ALTE) is an episode that is frightening to the observer and involves some combination of apnea, color change, marked change in tone, choking or gagging. It may be a presentation for a variety of different pediatric conditions including seizures, upper airway obstruction, gastroesophageal reflux, metabolic problems, anemia and cardiac disease. ALTEs usually occur in infants under 12 months however any child less than 2 years of age who exhibits any of the above symptoms should be considered an ALTE.

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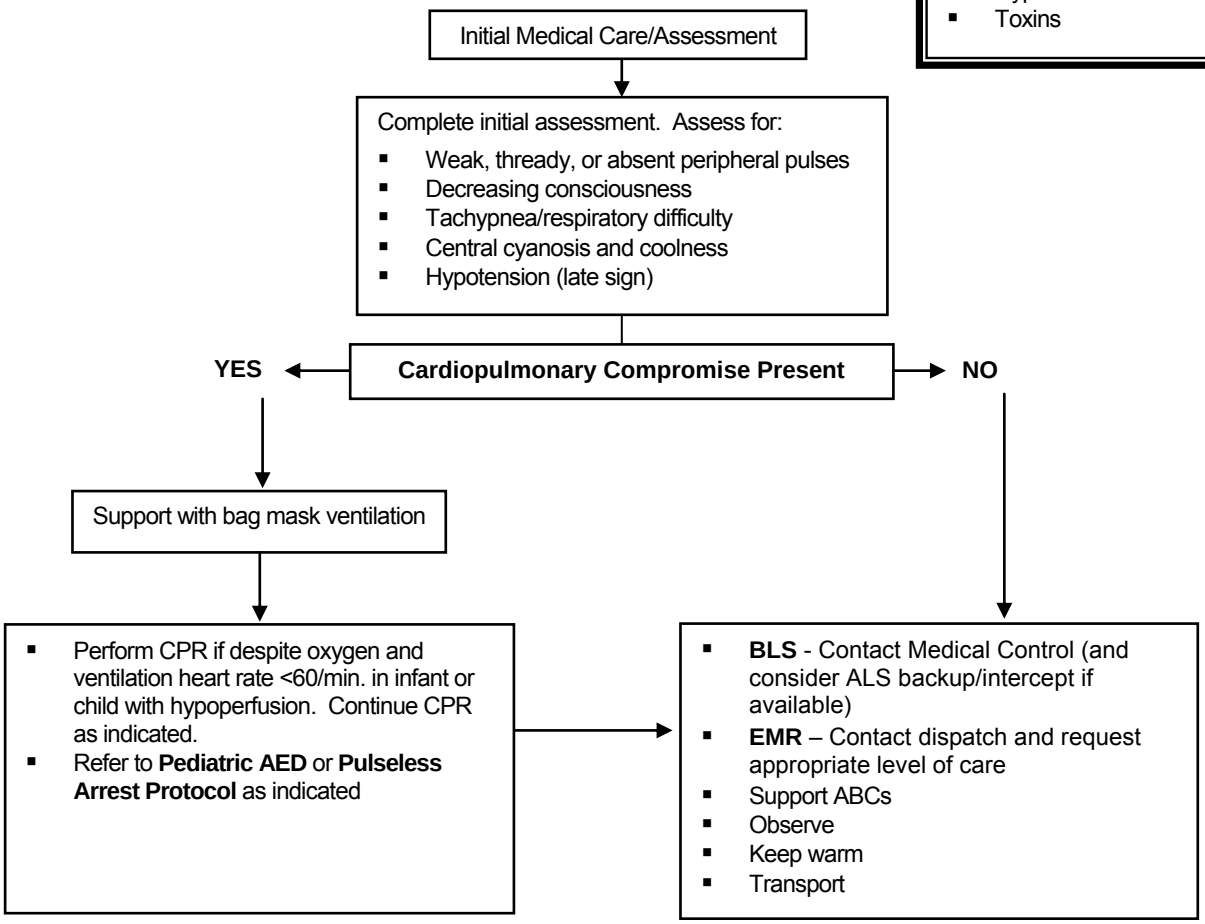
ILLINOIS EMSC
BRADYCARDIA PROTOCOL
BLS/EMR CARE GUIDELINE

REVERSIBLE CAUSES
Search for and treat possible reversible cause(s) in the prehospital setting:
- Hypoxia or ventilation problems
- Hypoglycemia
- Hypothermia
- Toxins



Special Considerations:
- Hypoglycemia has been known to cause bradycardia in infants and children.
- Special conditions may apply in the presence of severe hypothermia. Refer to **Hypothermia Protocol** as indicated.
- If toxins suspected or known, contact Poison Control 1-800-222-1222

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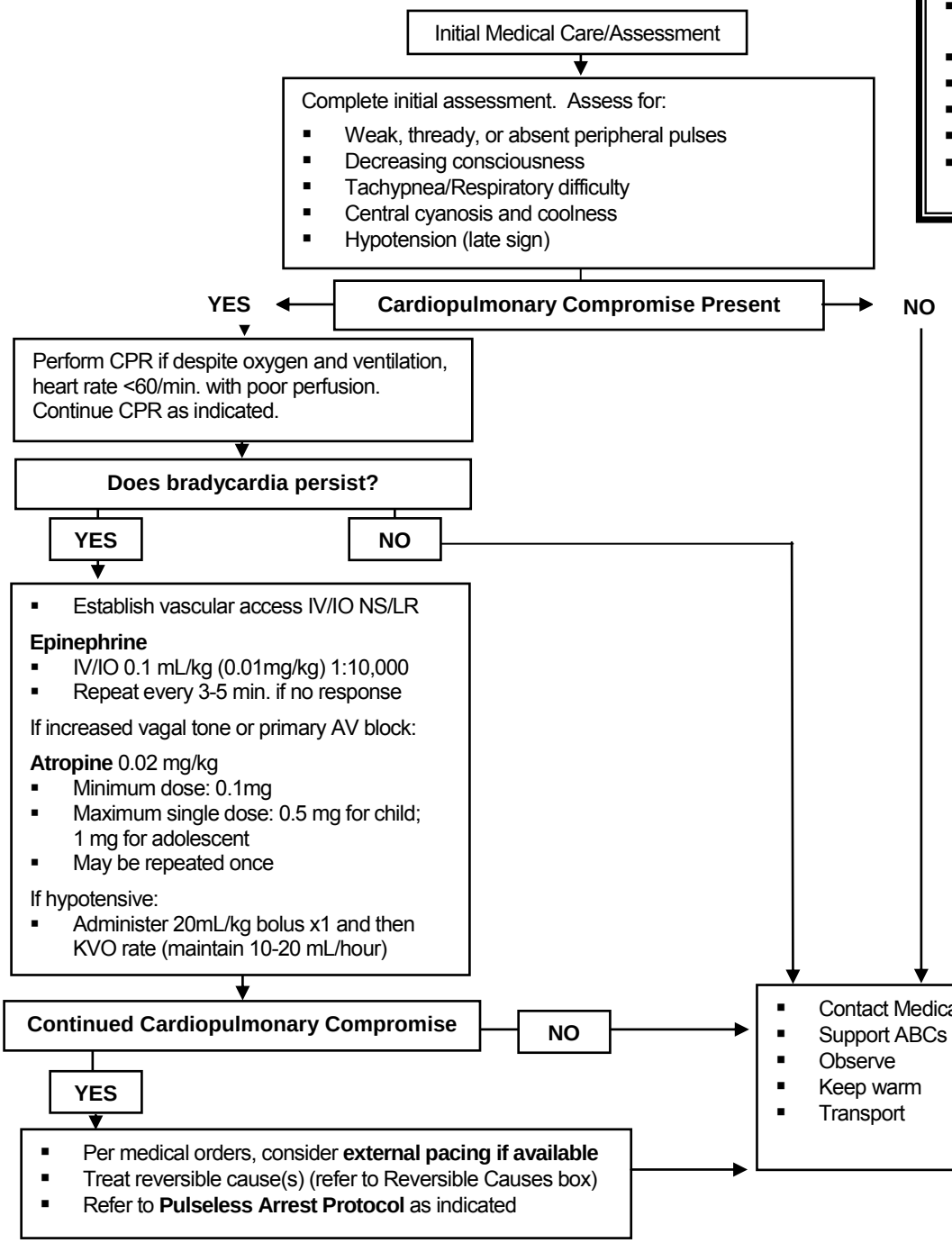
ILLINOIS EMSC
BRADYCARDIA PROTOCOL
ALS/ILS CARE GUIDELINE

REVERSIBLE CAUSES
Search for and treat possible reversible cause(s) in the prehospital setting:
- **H**ypovolemia
- **H**ypoxia or ventilation problems
- **H**ypoglycemia
- **H**ypothermia
- **T**oxins
- **T**amponade, cardiac
- **T**ension pneumothorax



Special Considerations:
- Special conditions may apply in the presence of severe hypothermia. Refer to **Hypothermia Protocol** as indicated.
- If IV/IO access not available, consider ET drug administration (Epinephrine 0.1mL/kg (0.1mg/kg) 1:1000)
- Monitor IO fluid administration closely when using pressure bag or manual pressure
- If toxins suspected or known, contact Poison Control at 1-800-222-1222

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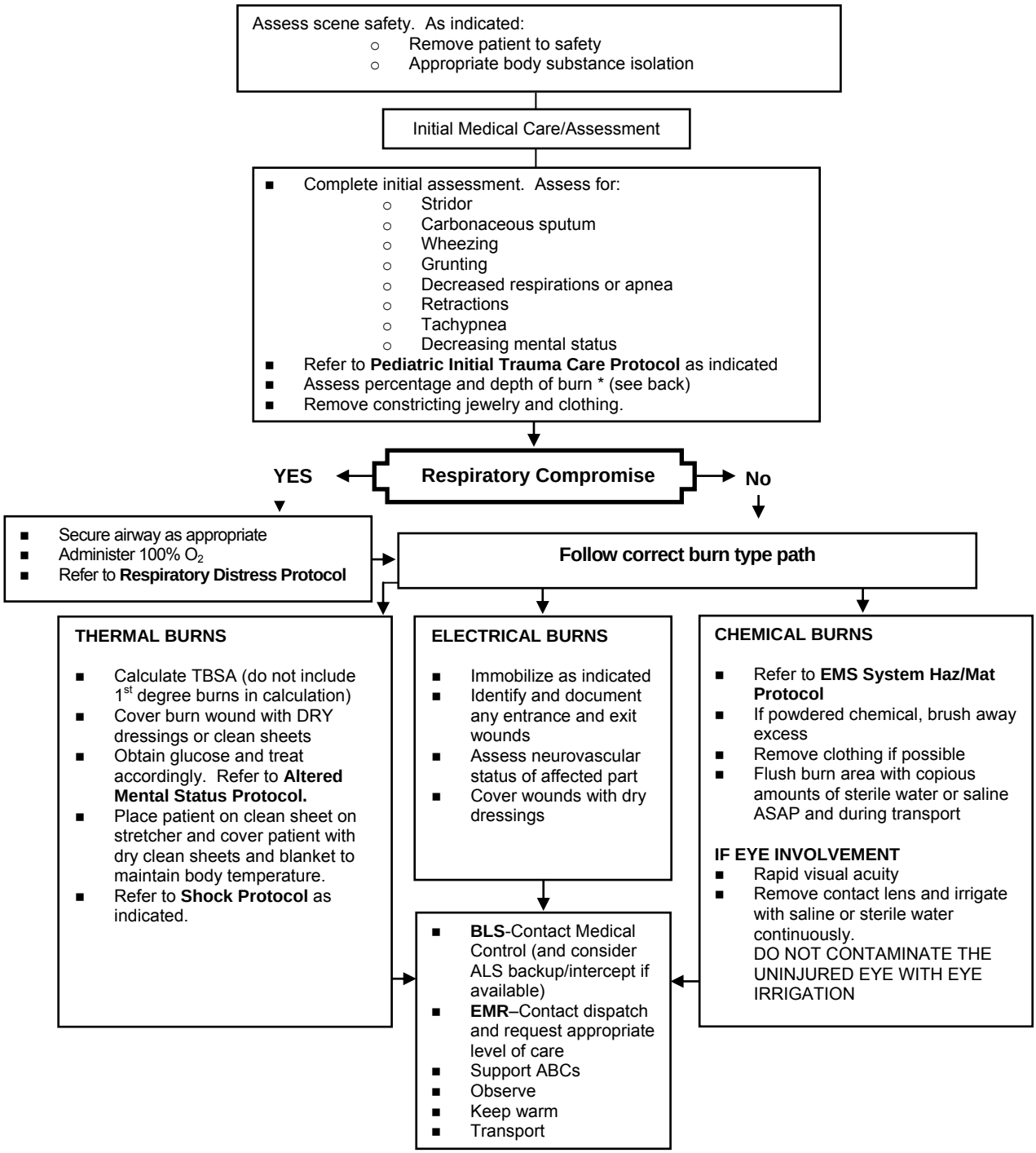
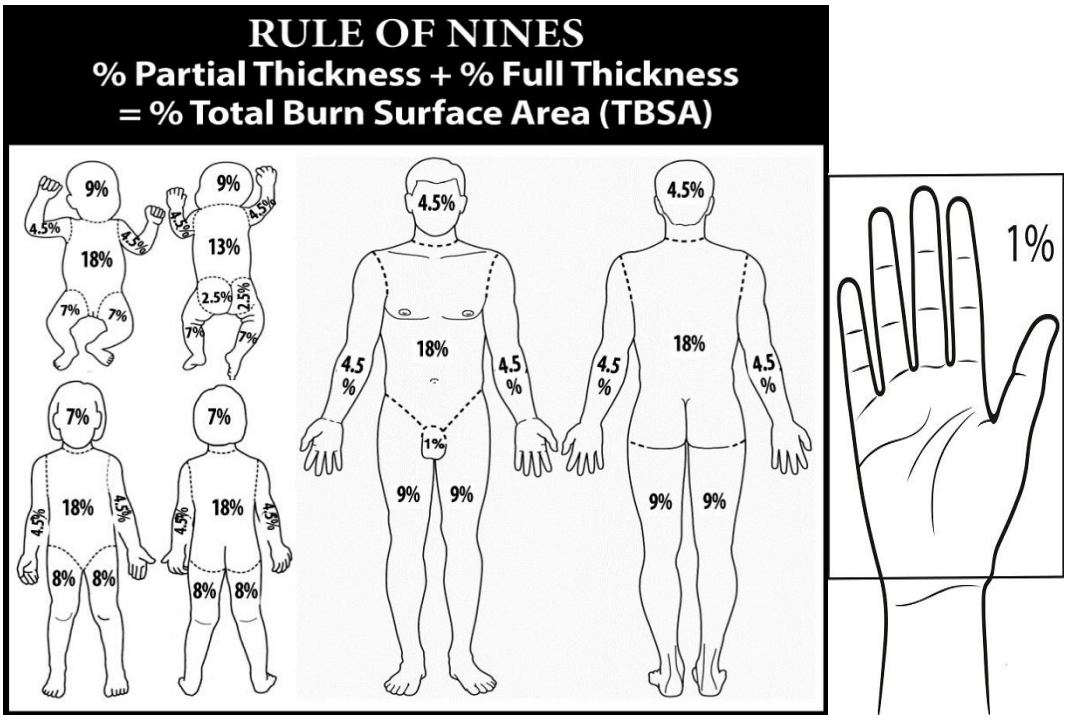
ILLINOIS EMSC
PEDIATRIC BURNS (THERMAL, ELECTRICAL, CHEMICAL)
BLS/EMR CARE GUIDELINE



SPECIAL CONSIDERATIONS:
- Assess for potential child abuse and follow appropriate reporting mechanism
- Keep the child warm and protect from hypothermia. Be cautious with cool dressings.
- Consider transport to a Burn Center * (see back)

The Illinois EMSC Prehospital Committee has exercised extreme caution that all information and drug dosages presented are accurate and in accordance with professional standards in effect at the time of publication. This prehospital care guideline may be modified at the discretion of the EMS Medical Director. It is recommended that care must be based on the child's clinical presentation, and on authorized policies and protocols.

%BSA by anatomical area **Palm-and-hand calculation[a]**



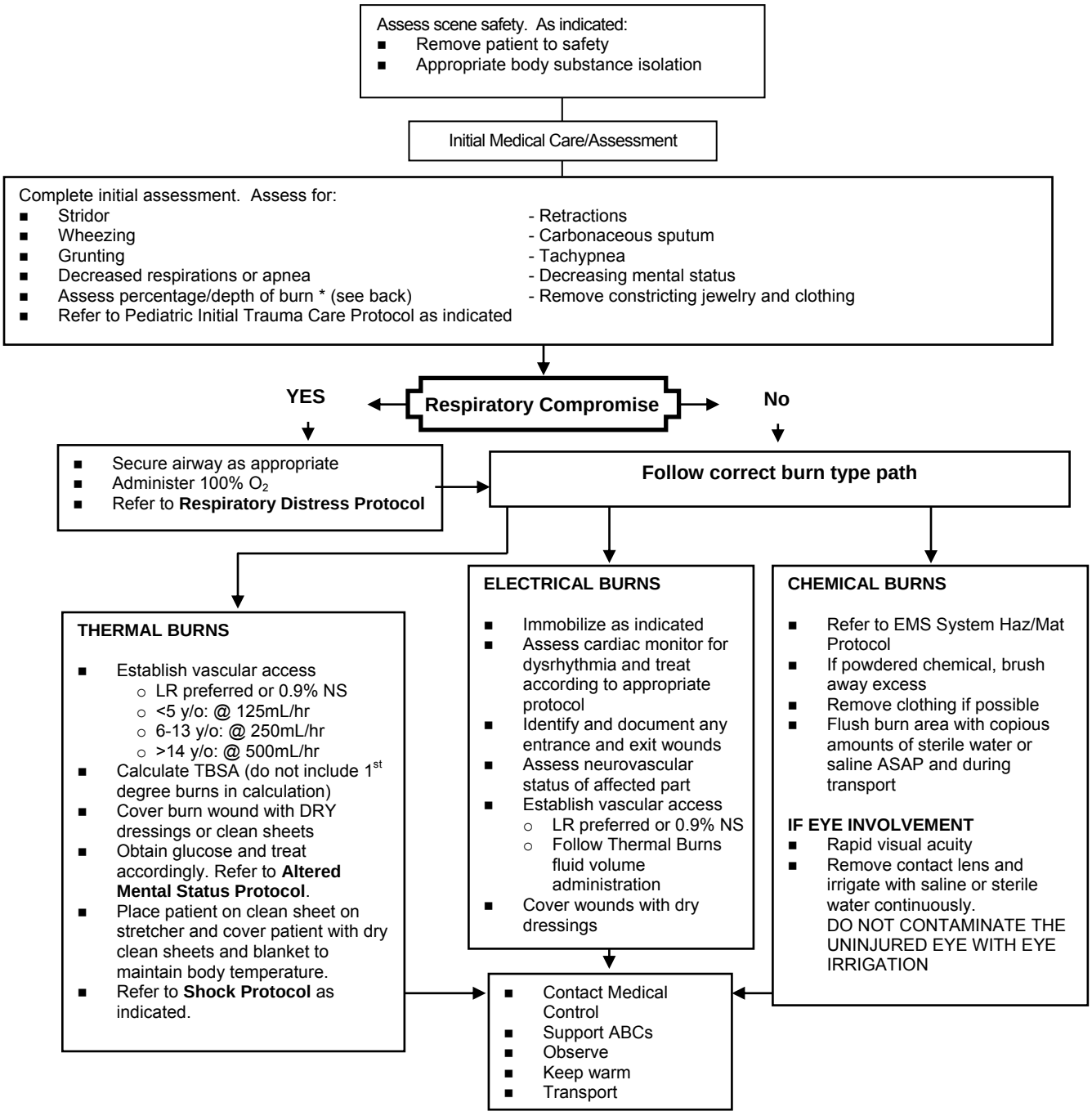
[a] Palm of hand (including fingers) of infant or child = 1% of the total body surface

Burn Center Referral Criteria

Any patient with a life threatening condition should be treated until stable at the nearest appropriate facility before being transferred to a burn center. According to the American Burn Association, burn injuries that should be referred to a burn center include:

1. Partial thickness burns greater than 10% total body surface area (TBSA)
2. Burns that involve the face, hands, feet, genitalia, perineum, or major joints
3. Third-degree burns in any age group
4. Electrical burns, including lightning injury
5. Chemical burns
6. Inhalation injury
7. Burn injury in patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality
8. Any patients with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. In such cases, if the trauma poses the greater immediate risk, the patient may be initially stabilized in a trauma center before being transferred to a burn unit. Physician judgment will be necessary in such situations and should be in concert with the regional medical control plan and triage protocols
9. Burned children in hospitals without qualified personnel or equipment for the care of children
10. Burn injury in patients who will require special social, emotional, or rehabilitative intervention

ILLINOIS EMSC
PEDIATRIC BURNS (THERMAL, ELECTRICAL, CHEMICAL)
ALS/ILS CARE GUIDELINE



SPECIAL CONSIDERATIONS:
- Assess for potential child abuse and follow appropriate reporting mechanism
- Keep the child warm and protect from hypothermia. Be cautious with cool dressings.
- **Consider pain management**
- Consider transport to a Burn Center* (see back)

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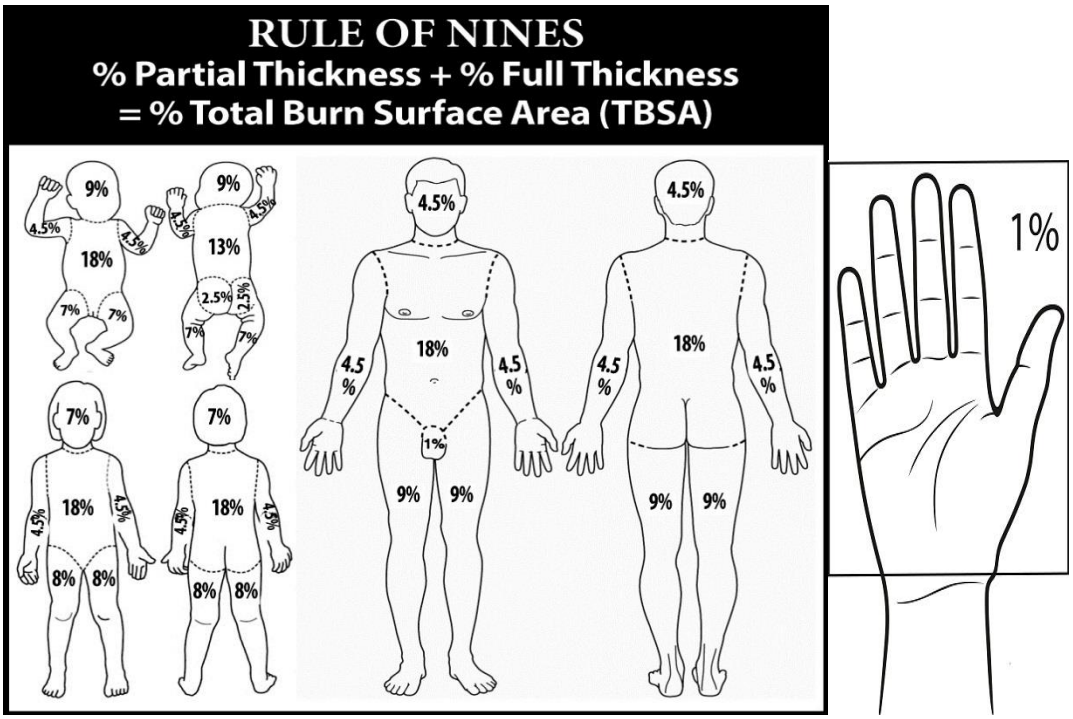
%BSA by anatomical area **Palm-and-hand calculation[a]**



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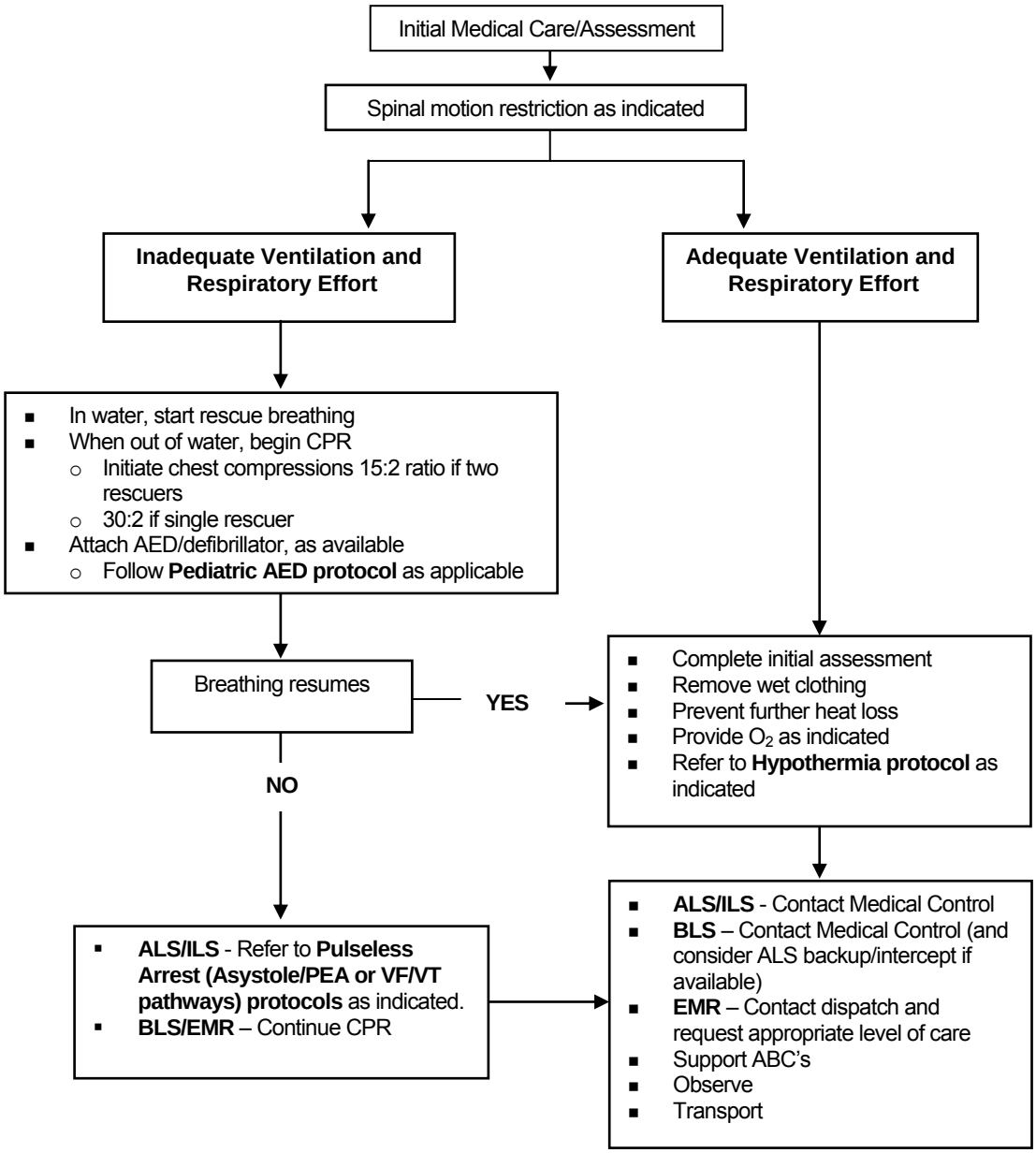
9. Burned children in hospitals without qualified personnel or equipment for the care of children
10. Burn injury in patients who will require special social, emotional, or rehabilitative intervention

ILLINOIS EMSC
PEDIATRIC DROWNING
ALS/ILS/BLS/EMR CARE GUIDELINE



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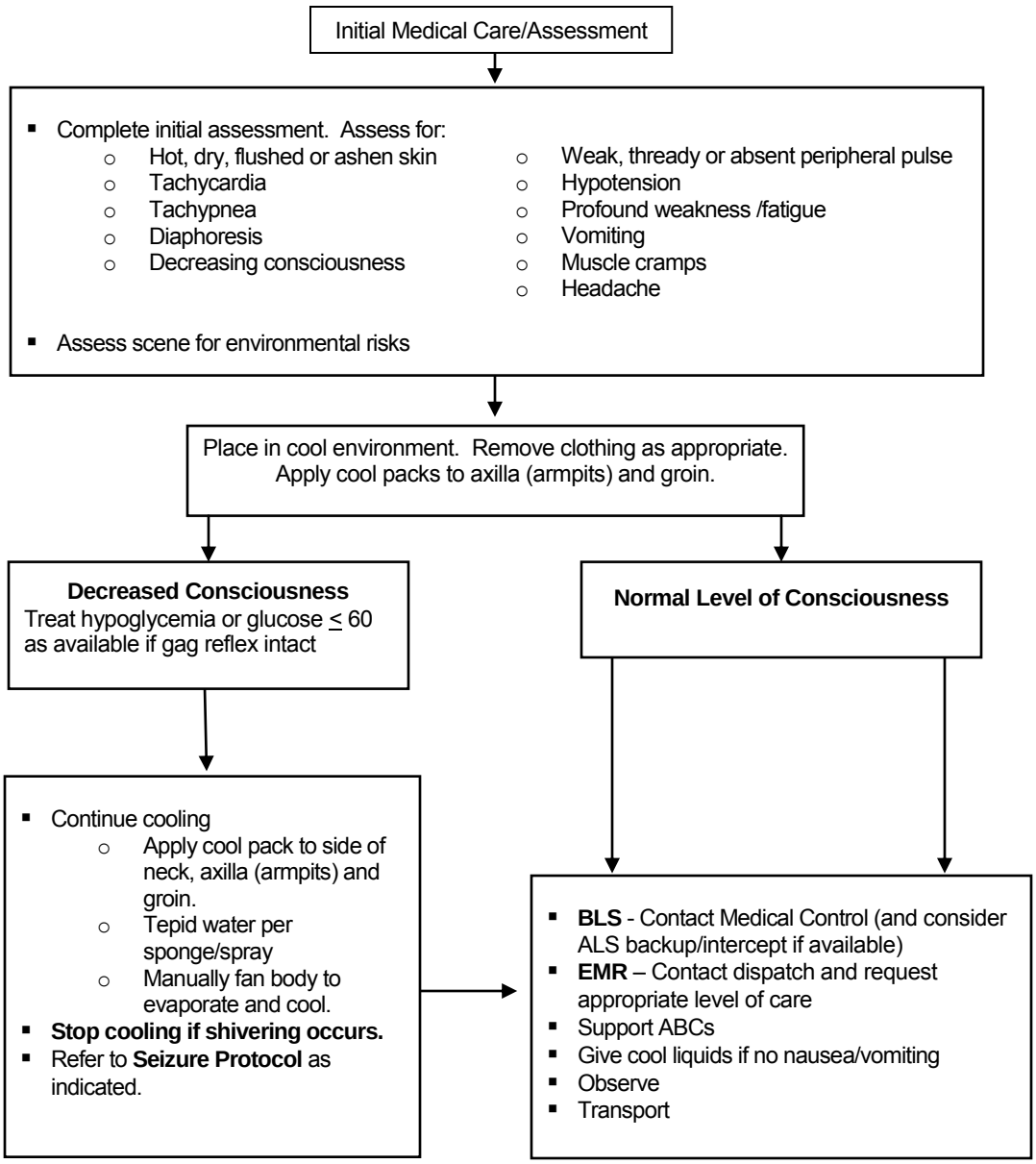
ILLINOIS EMSC
PEDIATRIC ENVIRONMENTAL HYPERTHERMIA
BLS/EMR CARE GUIDELINE



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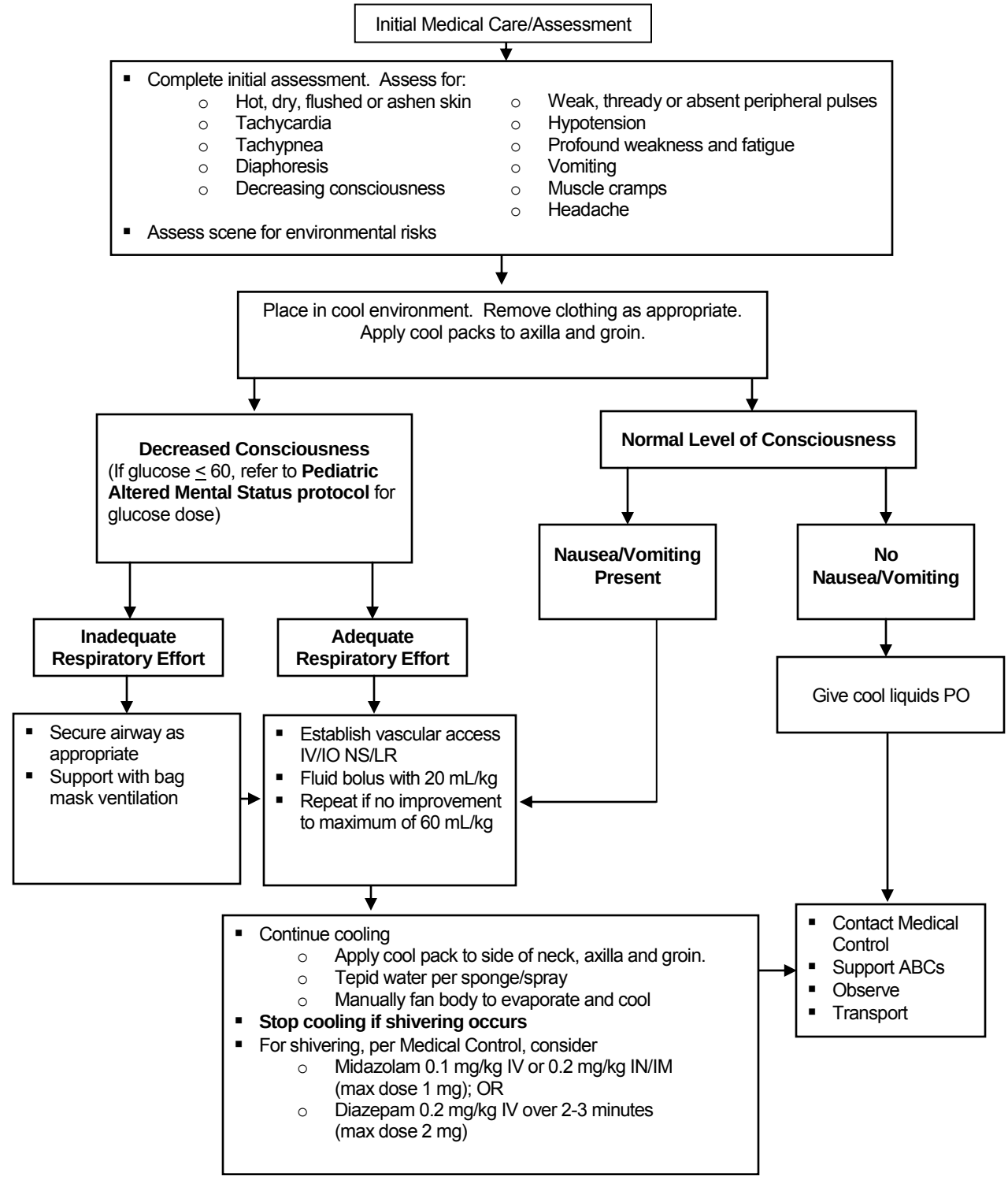
ILLINOIS EMSC
PEDIATRIC ENVIRONMENTAL HYPERTHERMIA
ALS/ILS CARE GUIDELINE



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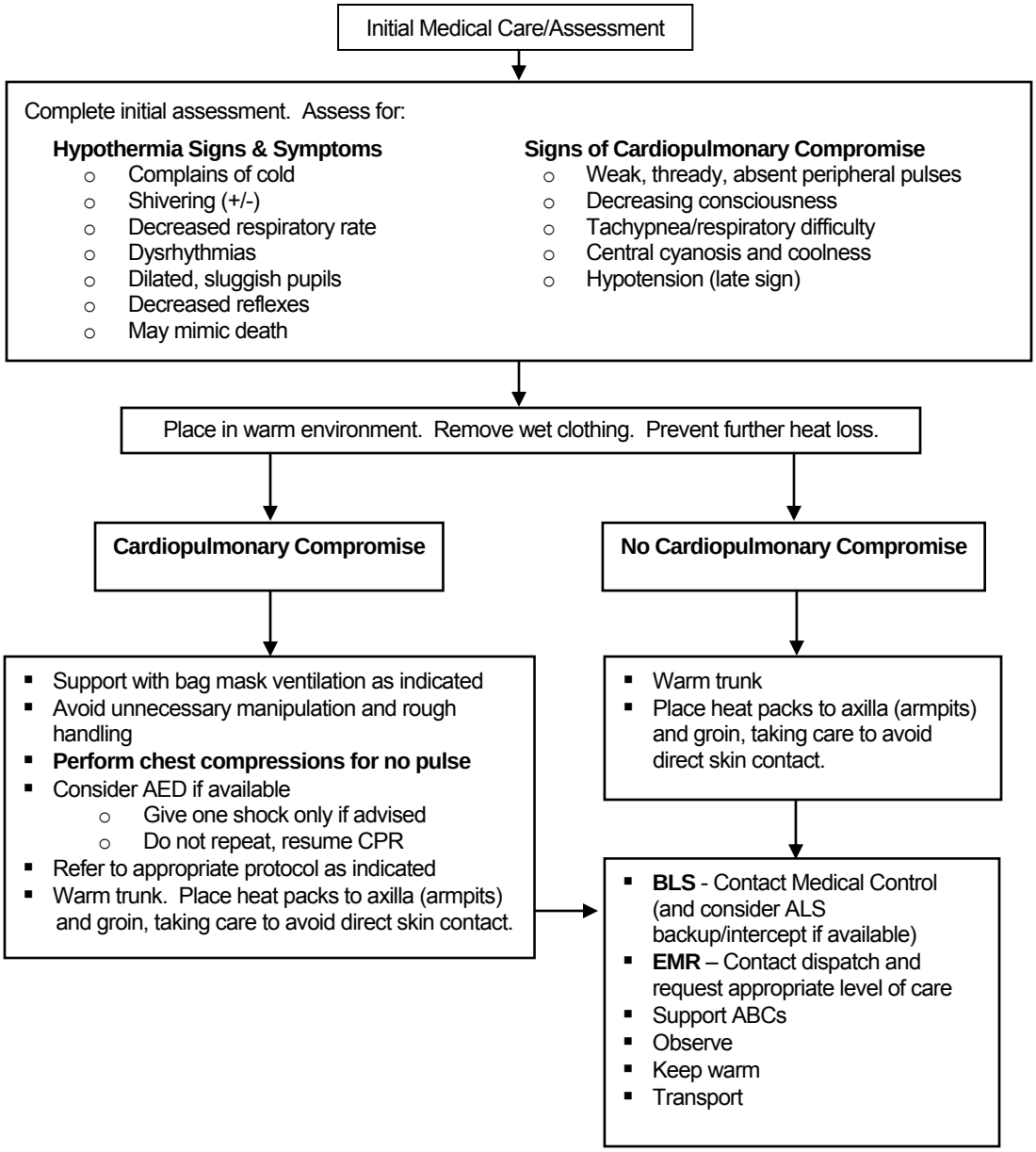
ILLINOIS EMSC
PEDIATRIC HYPOTHERMIA
BLS/EMR CARE GUIDELINE



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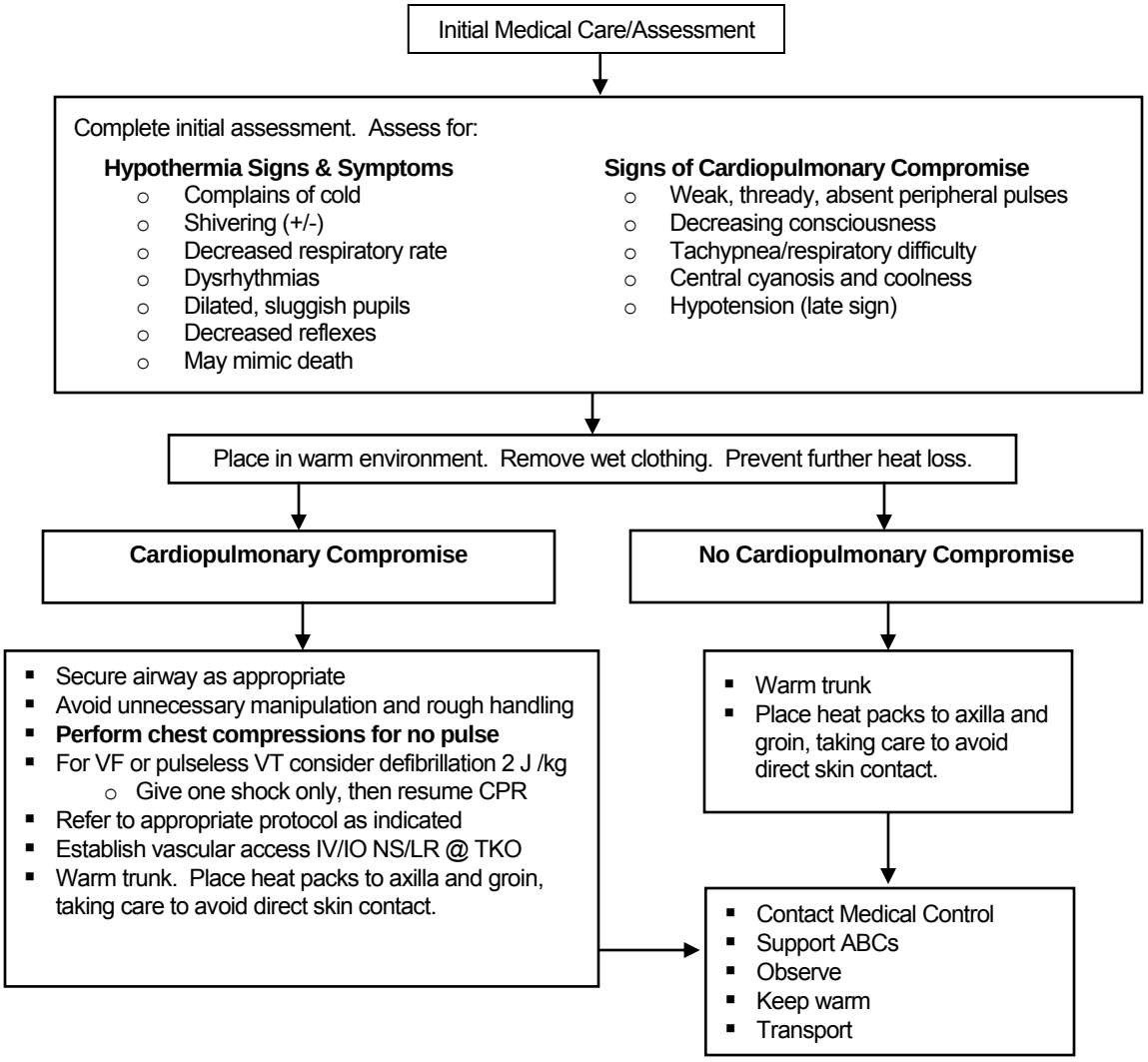
ILLINOIS EMSC
PEDIATRIC HYPOTHERMIA
ALS/ILS CARE GUIDELINE



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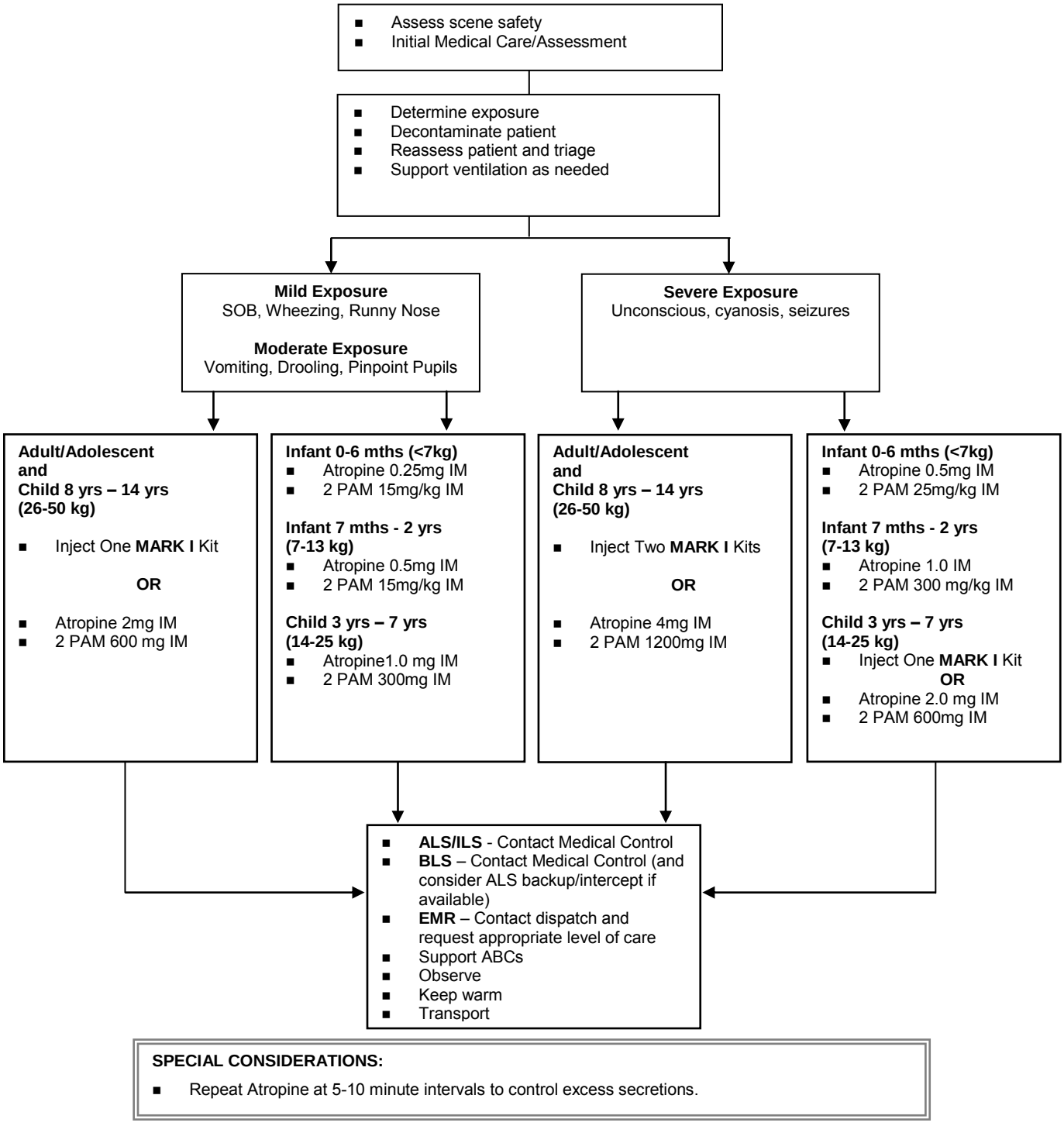
ILLINOIS EMSC
PEDIATRIC NERVE AGENT/ORGANOPHOSPHATE ANTIDOTE GUIDELINES
ALS/ILS/BLS/EMR CARE GUIDELINE



SPECIAL CONSIDERATIONS:

- Repeat Atropine at 5-10 minute intervals to control excess secretions.

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PEDIATRIC NERVE AGENT/ORGANOPHOSPHATE ANTIDOTE GUIDELINE

Mild Exposure	Moderate Exposure	Severe Exposure
SOB, Wheezing, Runny Nose	Vomiting, Drooling, Pinpoint Pupils	Unconscious, cyanosis, seizures

	PATIENT AGE	ANTIDOTES (IM) MILD/MODERATE	ANTIDOTES (IM) SEVERE
INFANT	0-6 months (< 7 kg)	Atropine 0.25mg 2 PAM† 15 mg/kg	Atropine* 0.5mg 2 PAM† 25 mg/kg
INFANT	7 months-2 years (7-13 kg)	Atropine* 0.5mg 2 PAM† 15 mg/kg	Atropine* 1mg 2 PAM† 300 mg
CHILD	3-7yrs (14-25kg)	Atropine* 1mg 2 PAM† 300mg	Atropine 2mg 2 PAM† 600 mg
CHILD	8-14 yrs (26-50kg)	Atropine 2mg 2 PAM† 600 mg	Atropine 4mg 2 PAM† 1200 mg
ADOLESCENT	> 14 yrs (> 51 kg)	Atropine 2mg 2 PAM† 600 mg	Atropine 4mg 2 PAM† 1200 mg

* Appropriate dose atropine auto injector can be used **if available**

† 2 PAM=Pralidoxime

DENOTES ONE MARK I KIT **DENOTES TWO MARK I KITS**

Atropine 2mg
2 PAM† 600mg

Atropine 4mg
2 PAM† 1200 mg

NOTES:

For nerve agents the doses are:

Atropine dose 0.05 mg/kg

2 PAM† dose 25 mg/kg

For children > 3 yrs with severe symptoms:

1 Mark I Kit will give Atropine 0.08 — 0.13 mg/kg

2 PAM† 24-46 mg/kg

2 PAM† solution can be prepared from the vial containing 1 gram of dessicated 2 PAM†. Inject 3 mL of NS or sterile water into the vial and shake well. This results in 3.3mL (1 mL = 300mg 2 PAM).

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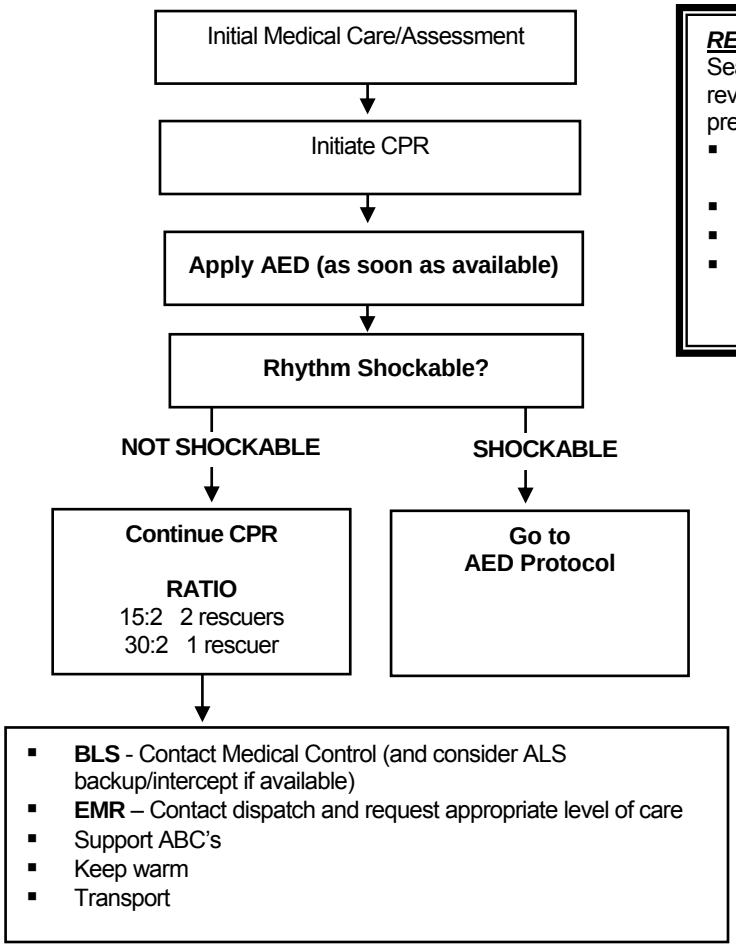
ILLINOIS EMSC
PULSELESS ARREST
BLS/EMR CARE GUIDELINE



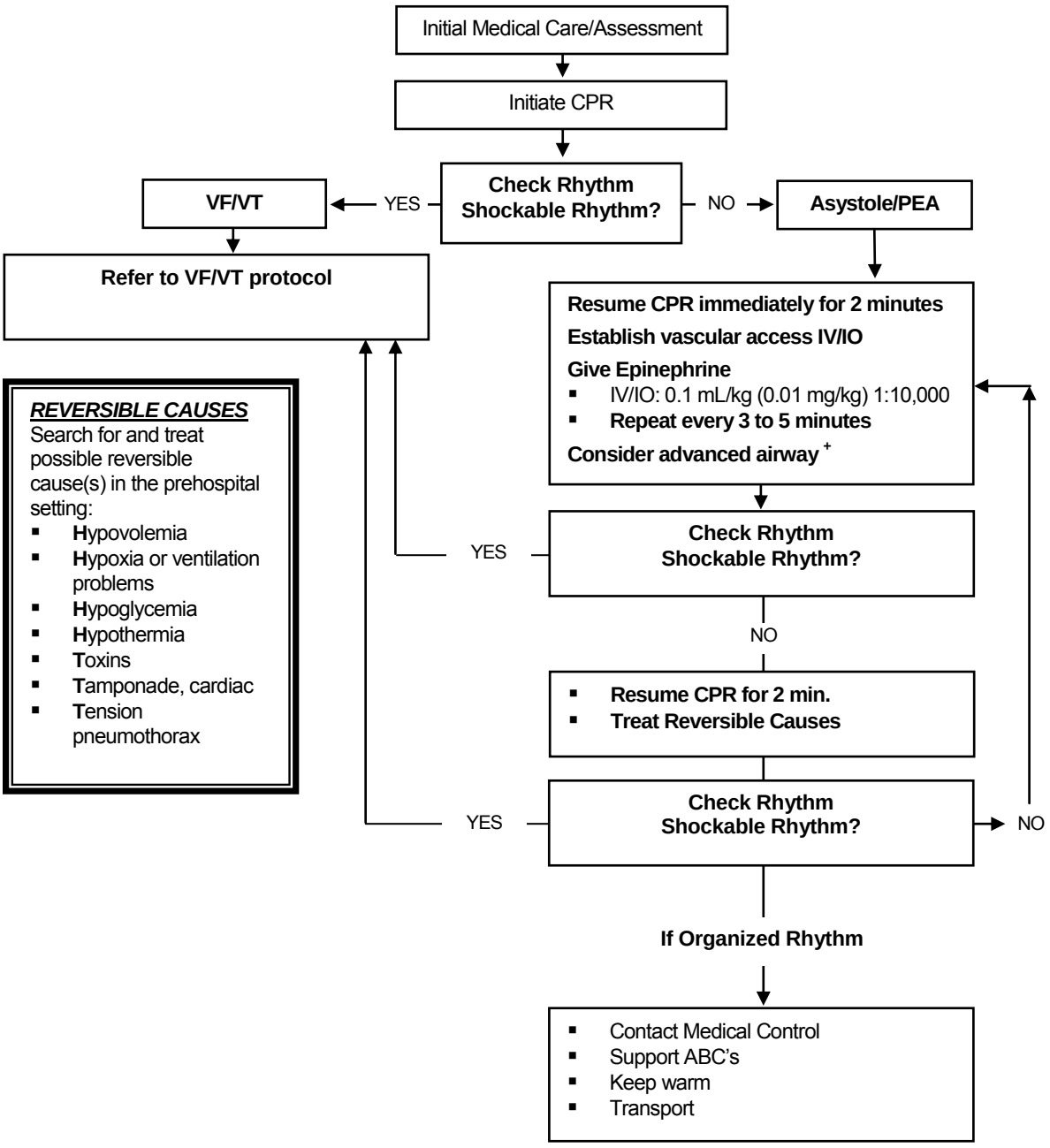
REVERSIBLE CAUSES

Search for and treat possible reversible cause(s) in the prehospital setting:

- **H**ypoxia or ventilation problems
- **H**ypoglycemia
- **H**ypothermia
- **T**oxins

The Illinois EMSC Prehospital Committee has exercised extreme caution that all information and drug dosages presented are accurate and in accordance with professional standards in effect at the time of publication. This prehospital care guideline may be modified at the discretion of the EMS Medical Director. It is recommended that care must be based on the child's clinical presentation, and on authorized policies and protocols.

ILLINOIS EMSC
PULSELESS ARREST (*ASYSTOLE/PEA PATHWAY*)
ALS/ILS CARE GUIDELINE



Special Considerations:

+ If advanced airway is placed, give continuous chest compressions without pauses for breaths per current AHA/ARC guidelines. Check rhythm every 2 minutes.

- Contact medical control or refer to system protocol for termination of resuscitation
- If IV/IO access not available consider ET drug administration (Epinephrine 0.1 mL/kg (0.1mg/kg) 1:1000)
- Refer to length/weight based tool to identify specific dosages (if available)

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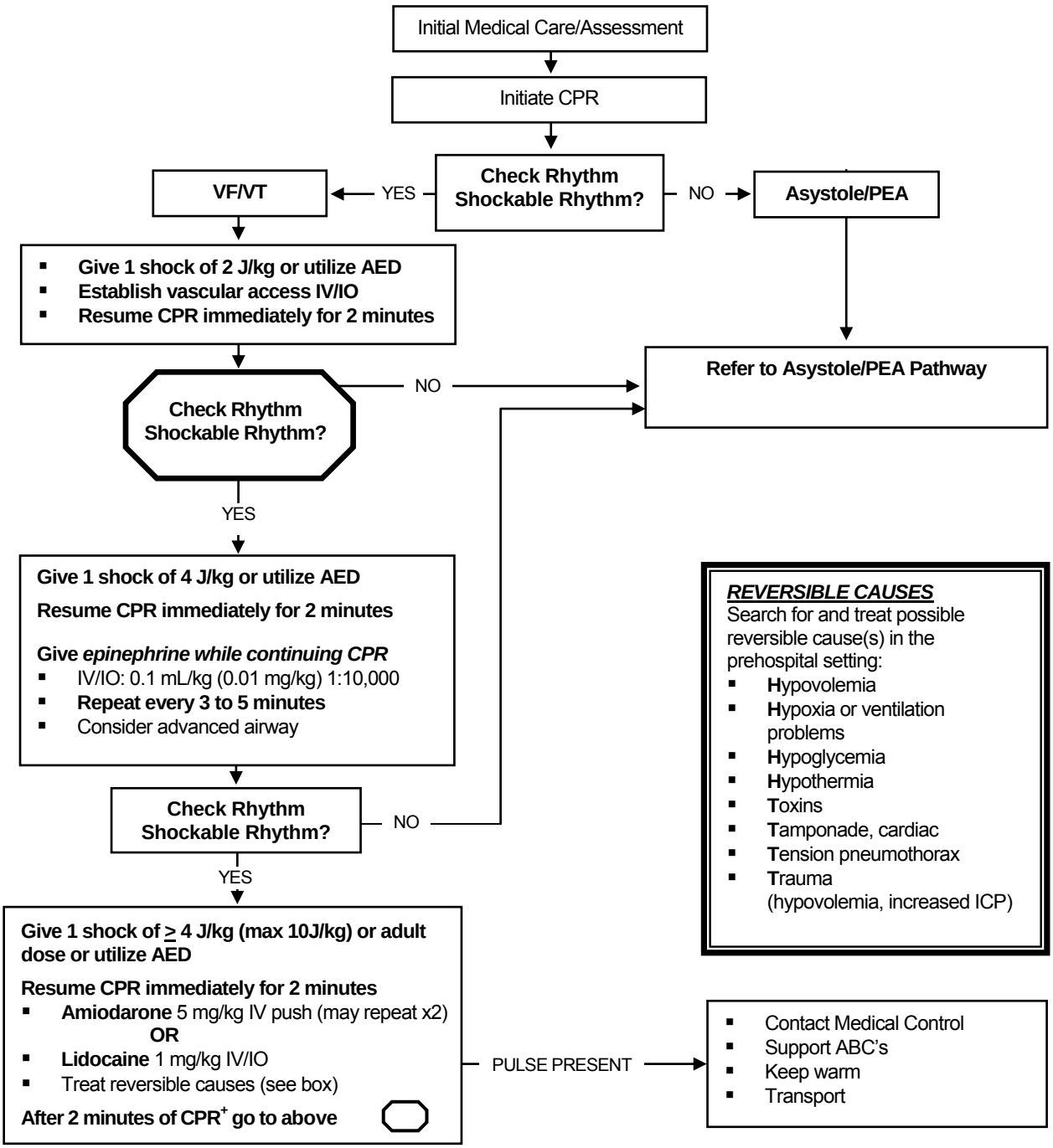
ILLINOIS EMSC
PULSELESS ARREST (*VF/VT PATHWAY*)
ALS/ILS CARE GUIDELINE



Special Considerations:
[+]If advanced airway is placed, give continuous chest compressions without pauses for breaths per current AHA/ARC guidelines. Check rhythm every 2 minutes.

- If IV/IO access not available, consider ET administration (Epinephrine 0.1mL/kg (0.1mg/kg) 1:1000)
- Consider therapeutic hypothermia if system protocol exists
- Consider **magnesium** 25 to 50 mg/kg IV/IO, max 2 g for torsades de pointes

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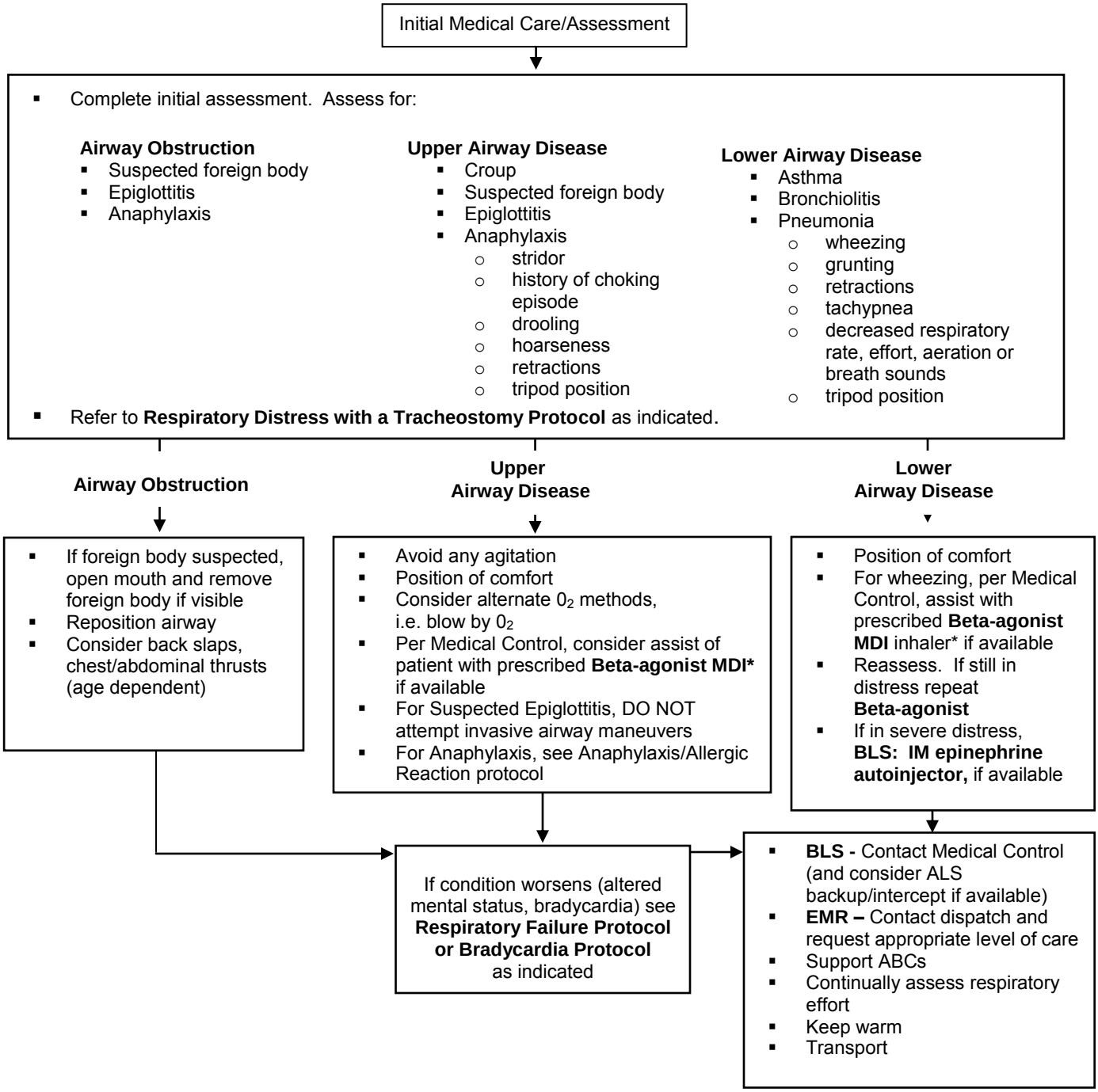
ILLINOIS EMSC
PEDIATRIC RESPIRATORY DISTRESS
BLS/EMR CARE GUIDELINE



Special Considerations:

* Per Medical Control, severe upper airway obstruction secondary to croup may be relieved with **Beta-agonists**.

* **Beta-agonist MDI** inhalers include, among others, **Albuterol (Proventil, Ventolin)** and **Levalbuterol (Xopenex).**
* An inhaler should be administered through a holding chamber or spacer device, if available.

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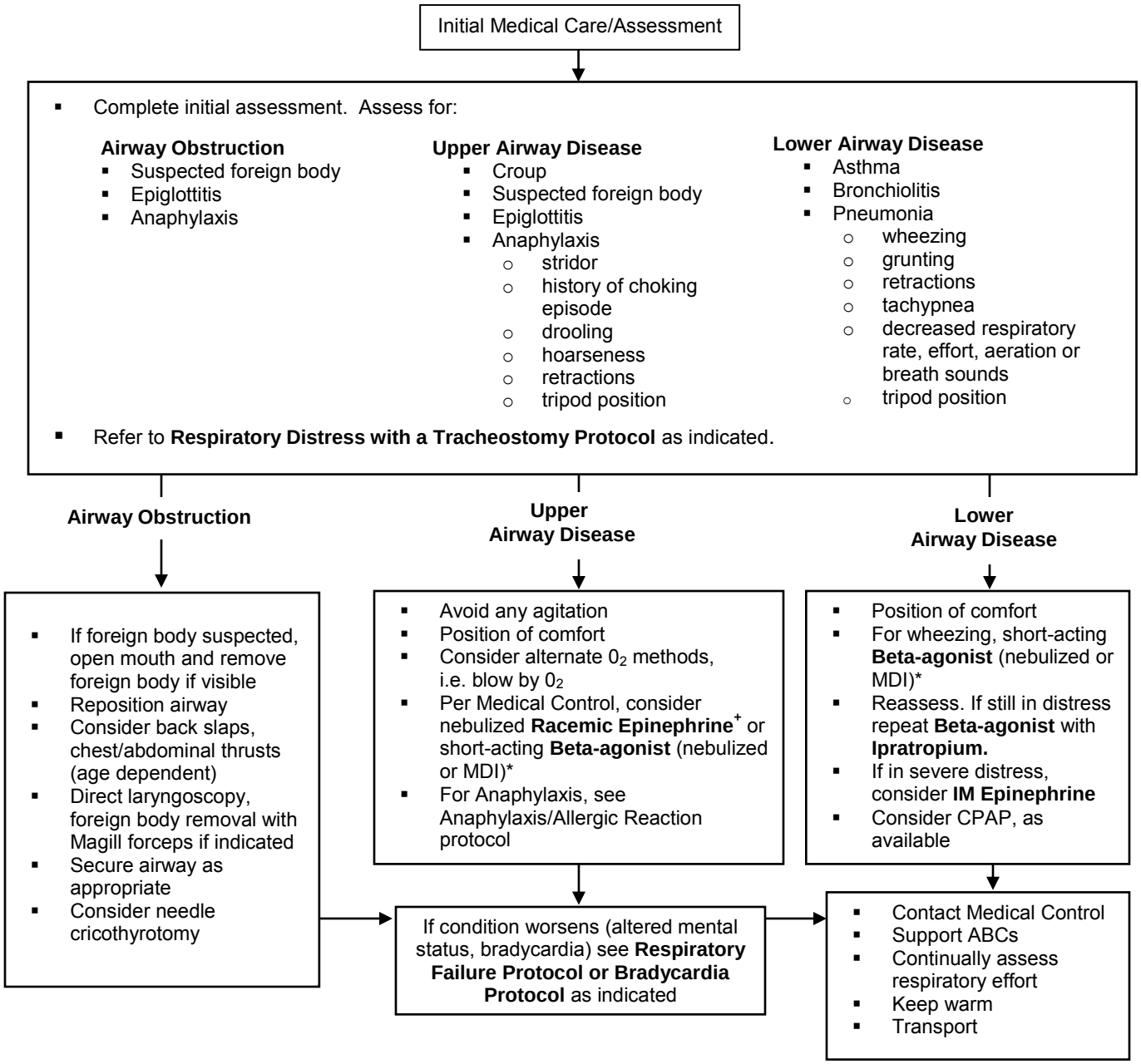
ILLINOIS EMSC
PEDIATRIC RESPIRATORY DISTRESS
ALS/ILS CARE GUIDELINE



Special Considerations:

- For Suspected Epiglottitis, DO NOT attempt intubation, invasive glottic visualization, or IV access

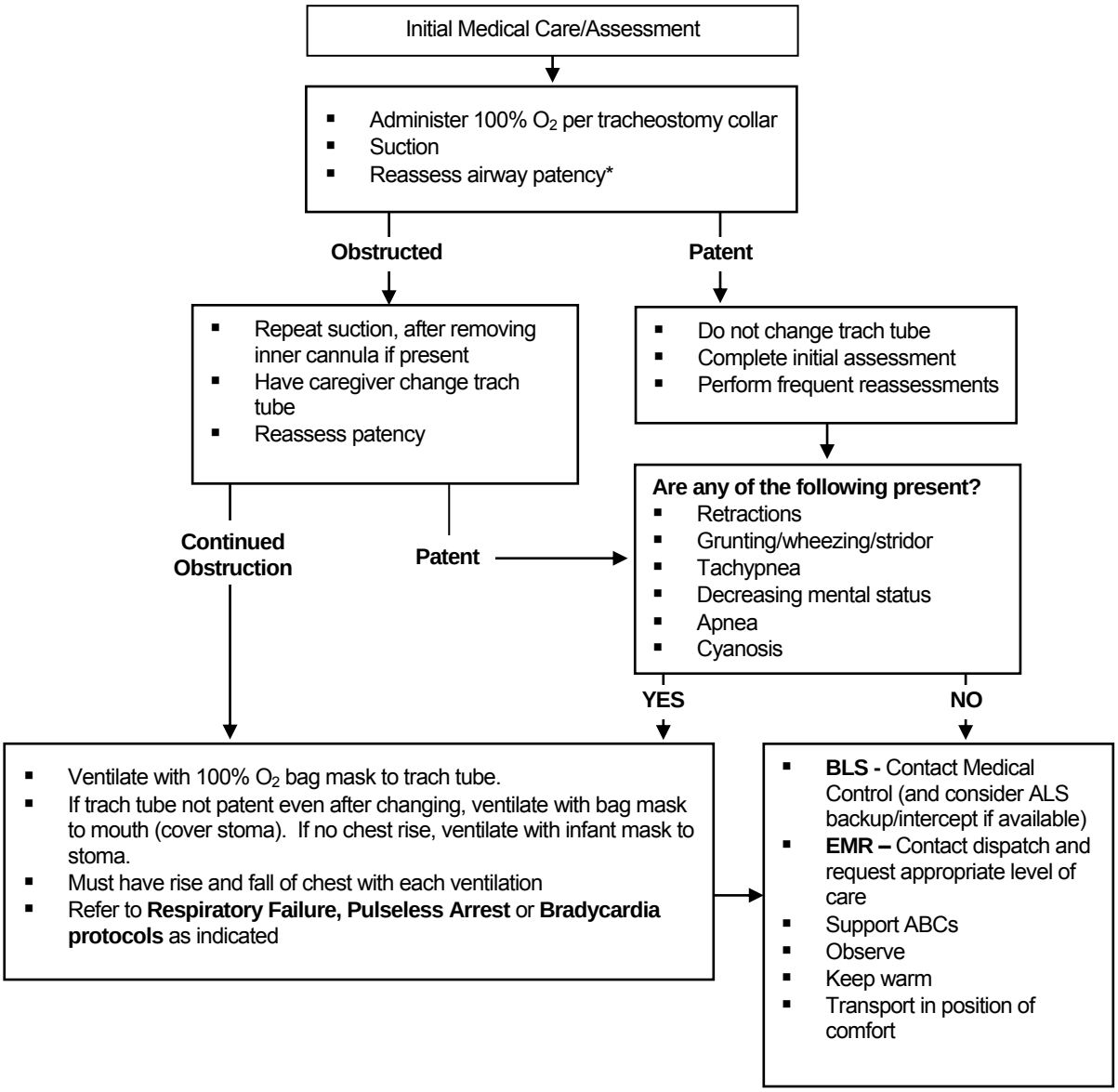
+ If Racemic Epinephrine is not available, consider: Epinephrine (1:1000) 0.25 – 0.5 mg/kg in 3 mL Normal Saline and administer by inhalation (max 5mL/dose)

* **Beta-agonist MDI** inhalers include, among others, **Albuterol (Proventil, Ventolin)** and **Levalbuterol (Xopenex).**

* An inhaler should be administered through a holding chamber or spacer device, if available.

The Illinois EMSC Prehospital Committee has exercised extreme caution that all information and drug dosages presented are accurate and in accordance with professional standards in effect at the time of publication. This prehospital care guideline may be modified at the discretion of the EMS Medical Director. It is recommended that care must be based on the child's clinical presentation, and on authorized policies and protocols.

ILLINOIS EMSC
PEDIATRIC RESPIRATORY DISTRESS WITH A TRACHEOSTOMY TUBE
BLS/EMR CARE GUIDELINE



Special Considerations:
*If chest rise inadequate:
- Reposition the airway.
- If using mask to stoma, consider inadequate volume delivered. Compress bag further and/or depress pop-off valve.

Consider allowing caregiver to remain with child regardless of child's level of responsiveness.

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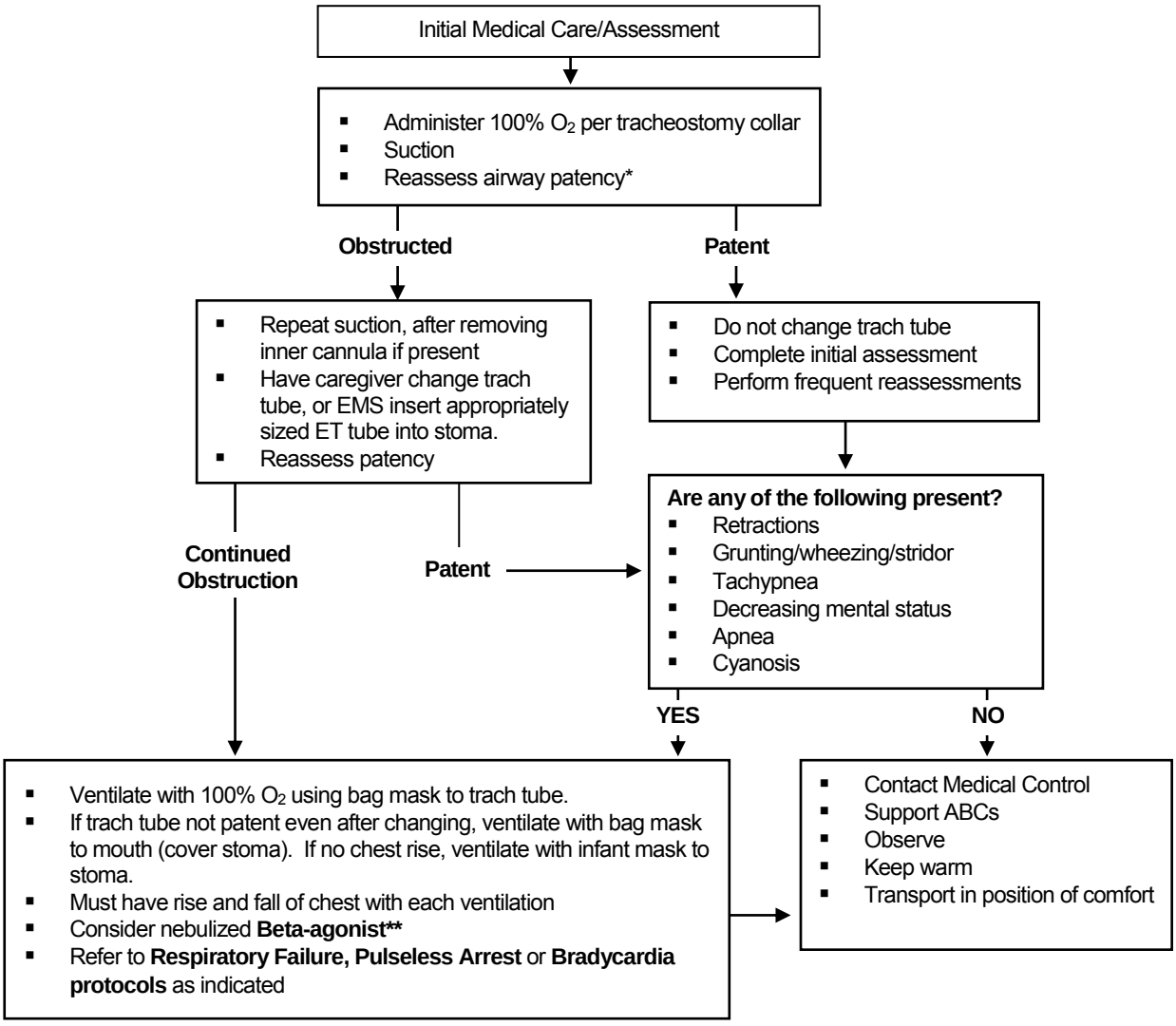
ILLINOIS EMSC
PEDIATRIC RESPIRATORY DISTRESS WITH A TRACHEOSTOMY TUBE
ALS/ILS CARE GUIDELINE



Special Considerations:

* If chest rise inadequate:
  - Reposition the airway.
  - If using mask to stoma, consider inadequate volume delivered. Compress bag further and/or depress pop-off valve.

** Only nebulized bronchodilator (Beta-agonist) should be administered. **Beta-agonists** include, among others: **Albuterol (Proventil, Ventolin)** and **Levalbuterol (Xopenex)**.

Consider allowing caregiver to remain with child regardless of child's level of responsiveness.

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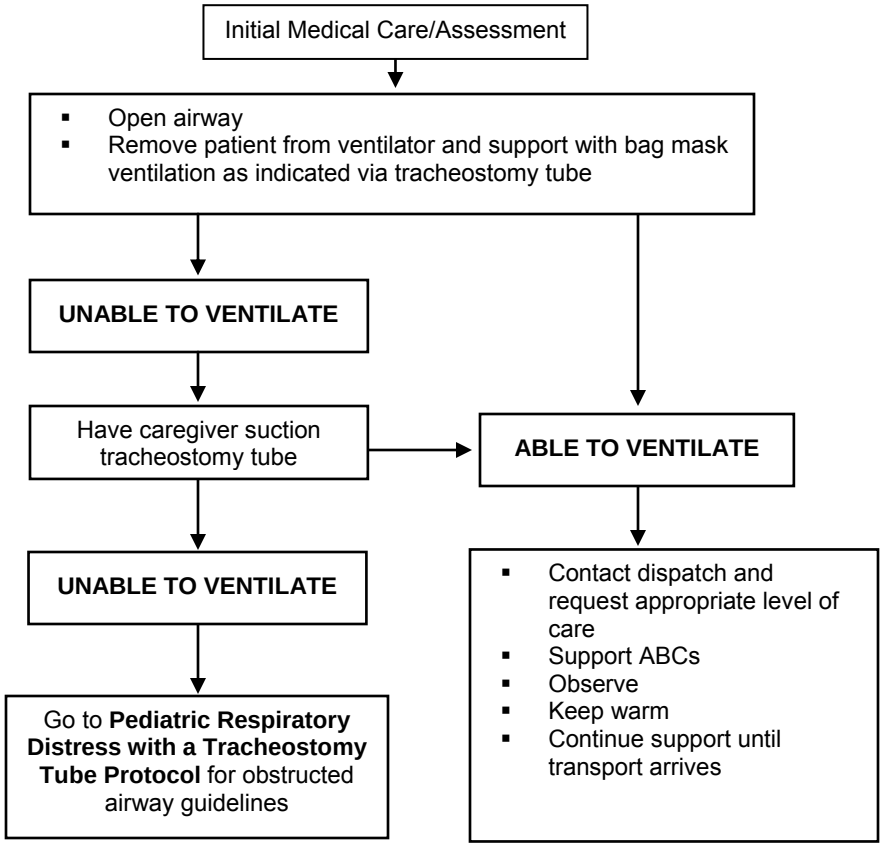
ILLINOIS EMSC
PEDIATRIC RESPIRATORY DISTRESS WITH A VENTILATOR
EMERGENCY MEDICAL RESPONDER CARE GUIDELINE



Special Considerations:

- Consider using parents/caregivers/home health nurses as medical resources at home and enroute.
- Consider alerting Medical Control of parent/caregiver participation in care.
- Consider allowing caregiver to remain with child regardless of child's level of responsiveness.
- Bring ventilator to the hospital or have parents/caregivers bring the ventilator to the hospital.

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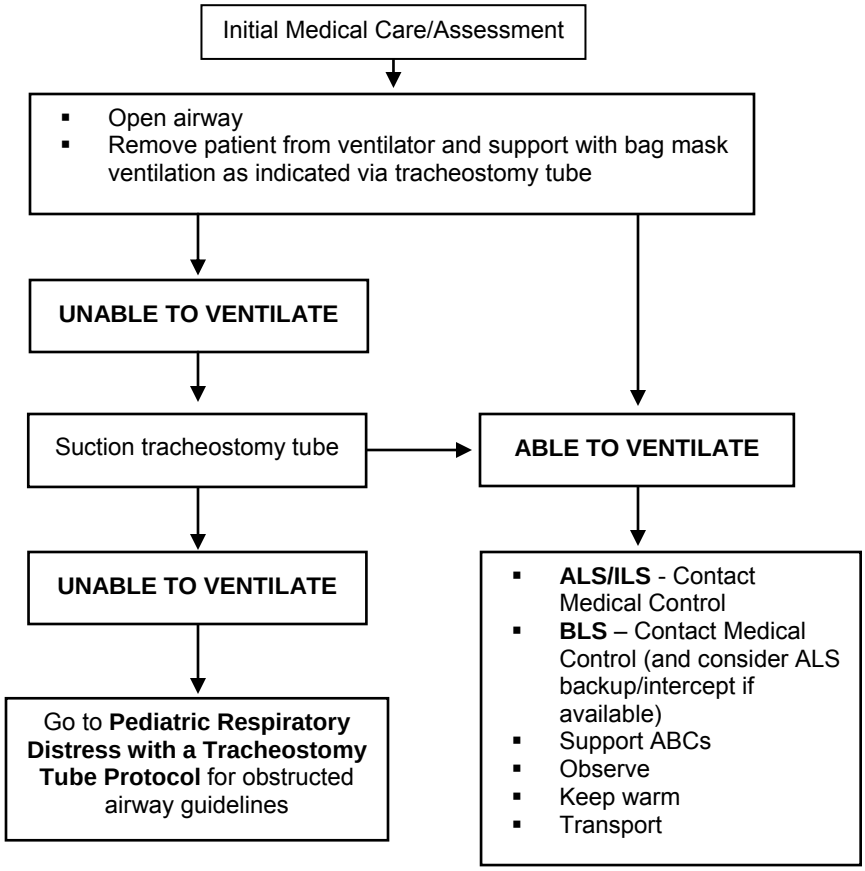
ILLINOIS EMSC
PEDIATRIC RESPIRATORY DISTRESS WITH A VENTILATOR
ALS/ILS/BLS CARE GUIDELINE



Special Considerations:

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- Consider allowing caregiver to remain with child regardless of child's level of responsiveness.
- Bring ventilator to the hospital or have parents/caregivers bring the ventilator to the hospital.

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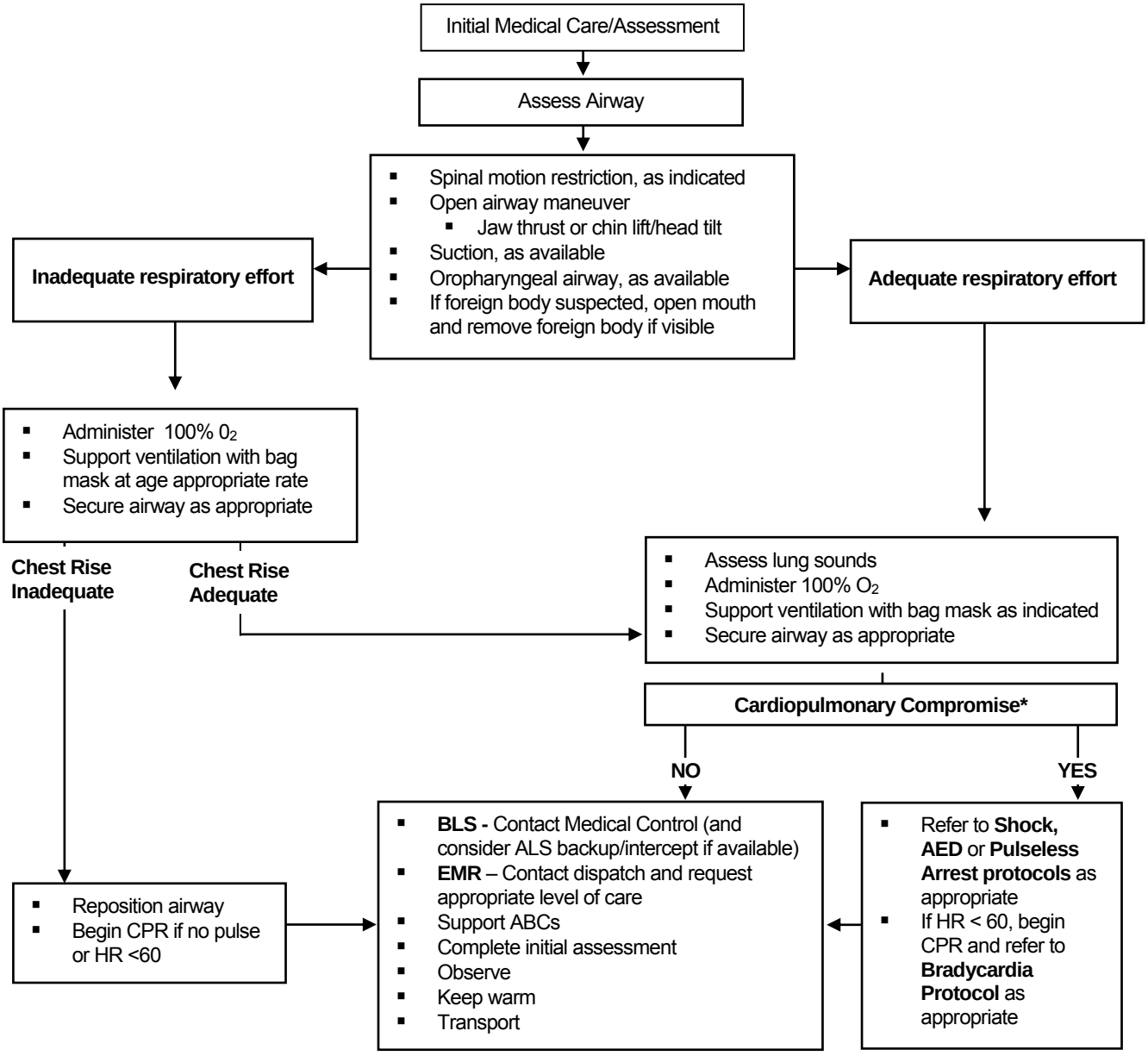
ILLINOIS EMSC
PEDIATRIC RESPIRATORY FAILURE
BLS/EMR CARE GUIDELINE



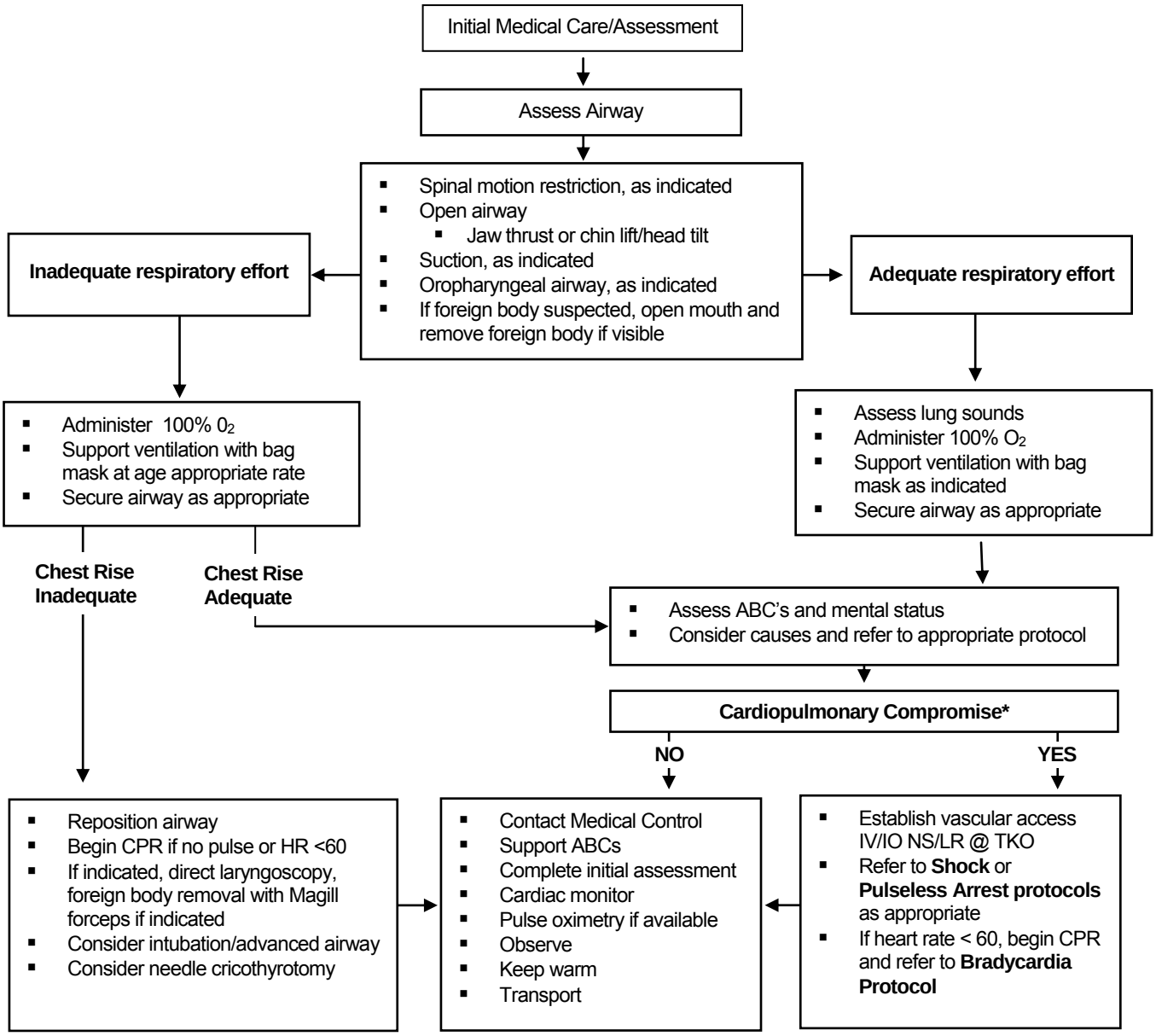
Special Considerations:

- Respiratory failure may be a presenting sign of a toxic ingestion, metabolic disorder or anaphylaxis.
- Refer to Respiratory Distress Protocol as appropriate.

*Refer to Vital Signs and Cardiopulmonary Compromise Resource for signs and symptoms of decreased perfusion in children.

The Illinois EMSC Prehospital Committee has exercised extreme caution that all information and drug dosages presented are accurate and in accordance with professional standards in effect at the time of publication. This prehospital care guideline may be modified at the discretion of the EMS Medical Director. It is recommended that care must be based on the child's clinical presentation, and on authorized policies and protocols.

ILLINOIS EMSC
PEDIATRIC RESPIRATORY FAILURE
ALS/ILS CARE GUIDELINE



Special Considerations:

- Respiratory failure may be a presenting sign of a toxic ingestion, metabolic disorder or anaphylaxis.
- Consider **naloxone, flumazenil** or **glucose** per Medical Control.

*Refer to Vital Signs and Cardiopulmonary Compromise Resource for signs and symptoms of decreased perfusion in children.

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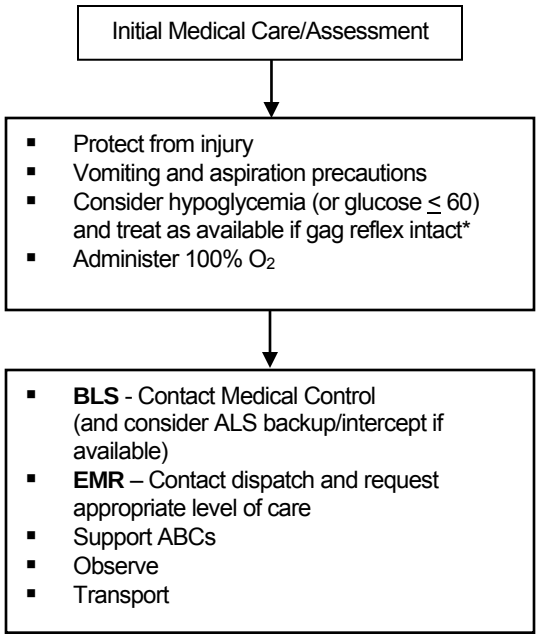
ILLINOIS EMSC
PEDIATRIC SEIZURES
BLS/EMR CARE GUIDELINE



Special Considerations:

*Examples of treatment for hypoglycemia if gag reflex intact: glucose paste, sugar, cake icing.

- Refer to **Respiratory Failure Protocol** as indicated.
- Parents may have given medication prior to EMS arrival, so watch for respiratory depression.
- Document medications administered prior to transport.

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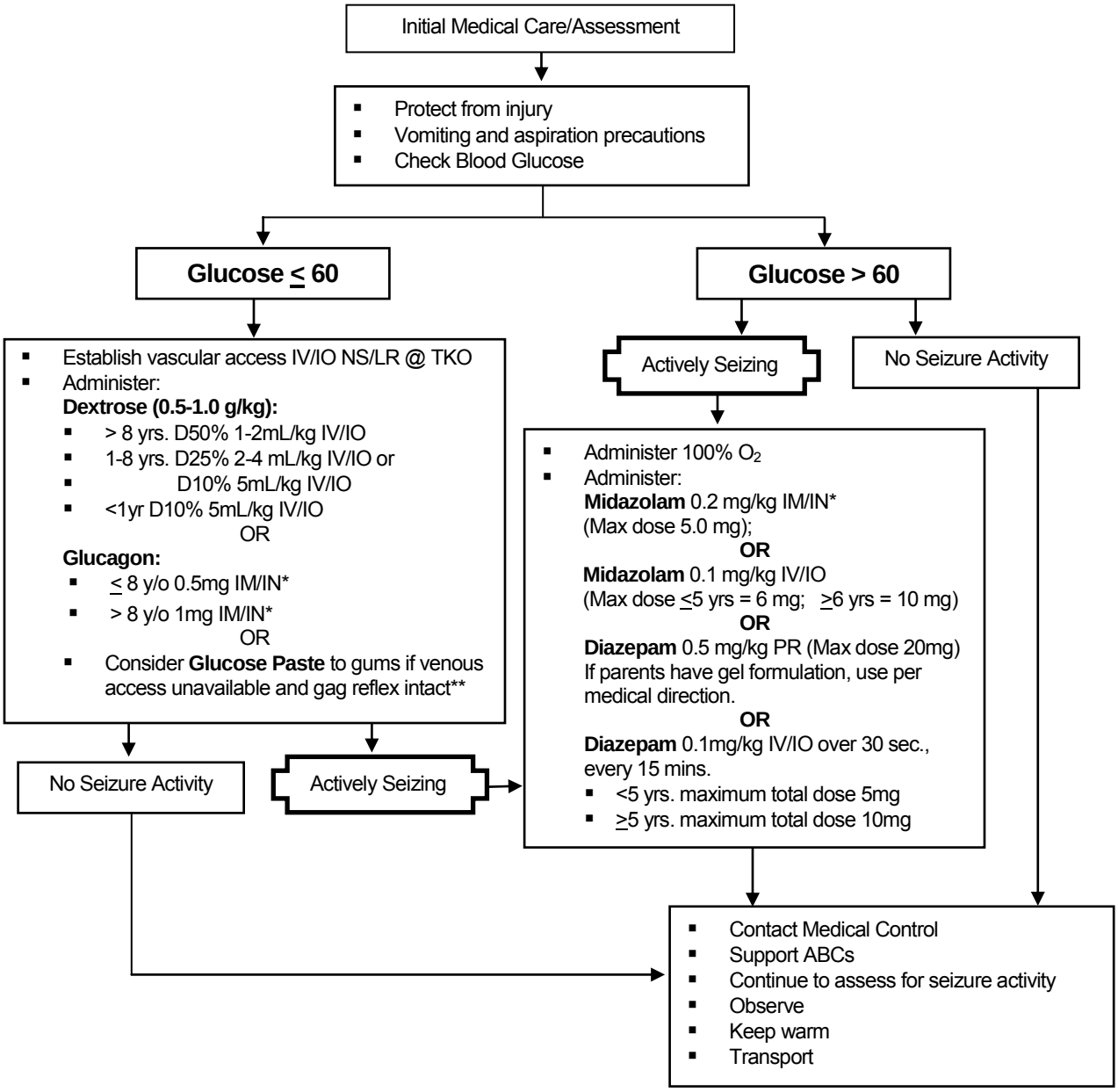
ILLINOIS EMSC
PEDIATRIC SEIZURES
ALS/ILS CARE GUIDELINE



Special Considerations:

- Anticipate respiratory depression if **Diazepam** or **Midazolam** are administered
- Refer to **Respiratory Failure Protocol** as indicated
- Parents may have given medication prior to EMS arrival, so watch for respiratory depression.

* For intranasal administration use nasal atomizer, and administer no more than 1 mL per nostril.
**Examples of treatment for Hypoglycemia if gag reflex intact: glucose paste, sugar, cake icing.

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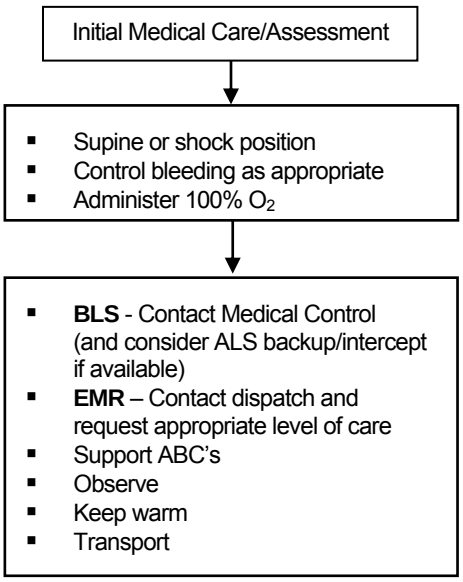
ILLINOIS EMSC
PEDIATRIC SHOCK
BLS/EMR CARE GUILDELINE



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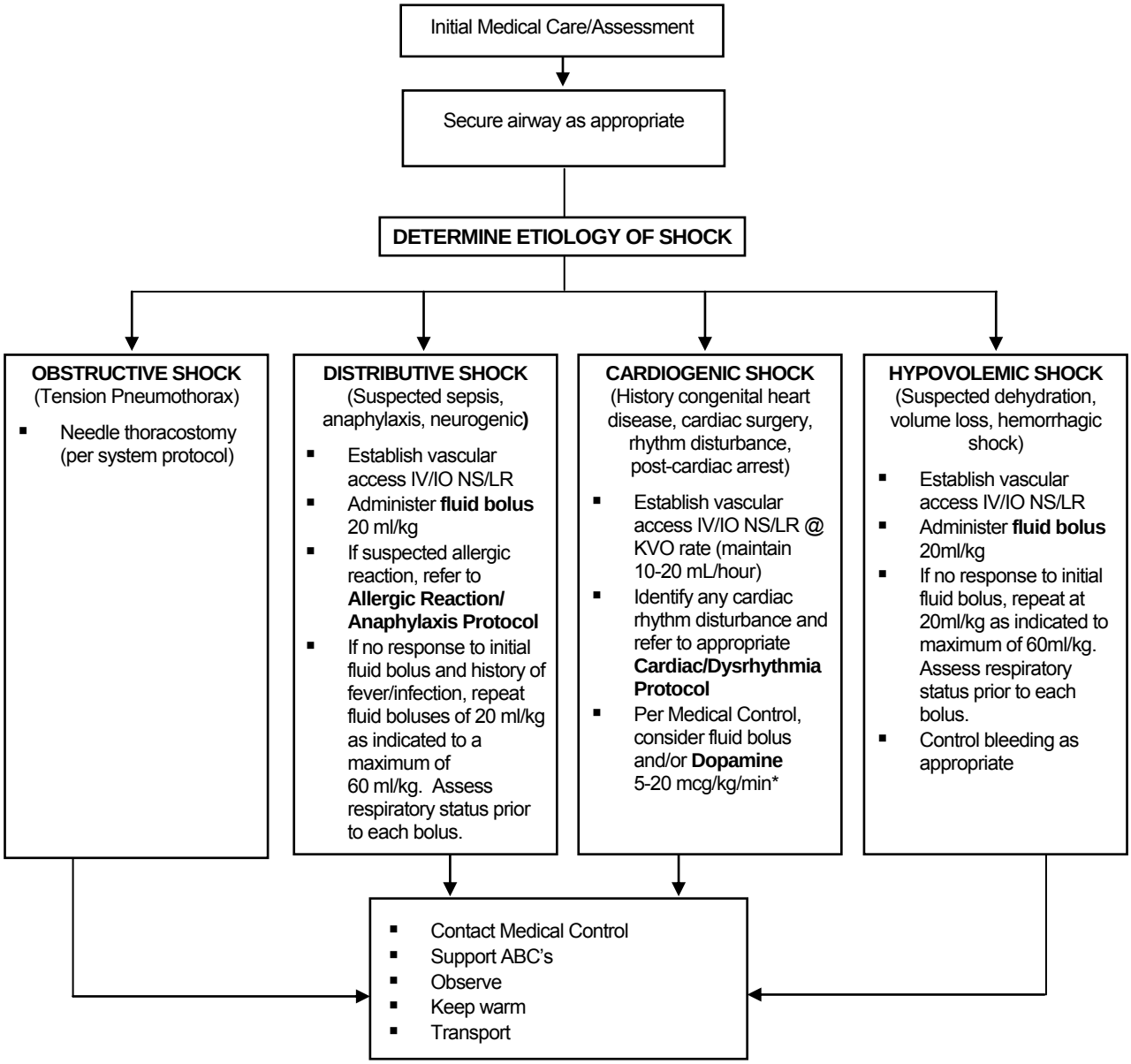
ILLINOIS EMSC
PEDIATRIC SHOCK
ALS/ILS CARE GUILDELINE



Special Considerations:

Caution - fluids may need to be restricted in Cardiogenic shock.

***Dopamine** must be administered per system protocol.

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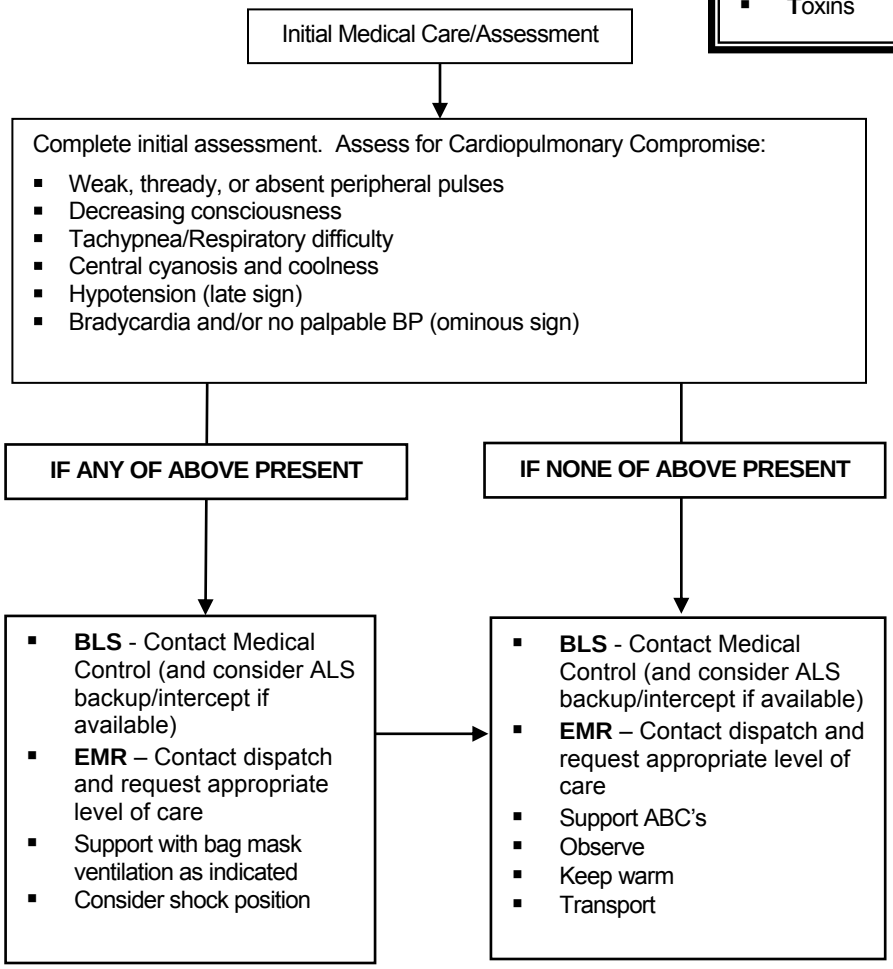
ILLINOIS EMSC
TACHYCARDIA PROTOCOL
BLS/EMR CARE GUIDELINE

REVERSIBLE CAUSES
Search for and treat possible reversible cause(s) in the prehospital setting:

- **H**ypoxia or ventilation problems
- **H**ypoglycemia
- **H**ypothermia
- **H**ypovolemia
- **T**oxins



Special Considerations:

Be prepared for respiratory or cardiac arrest. Consider **AED, Pulseless Arrest** or **Respiratory Arrest protocols**.

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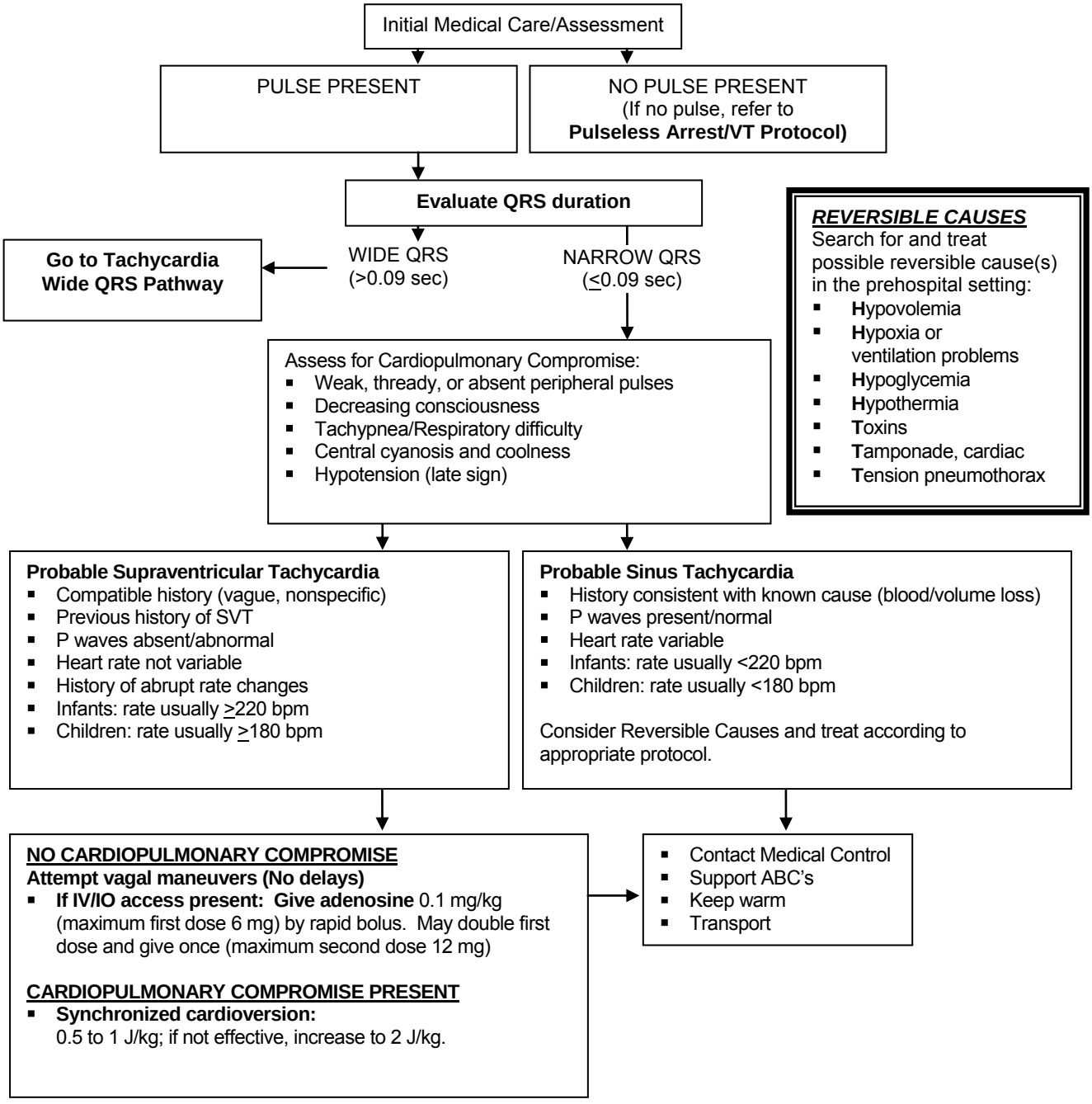
ILLINOIS EMSC
TACHYCARDIA *(NARROW QRS PATHWAY)*
ALS/ILS CARE GUIDELINE



Special Considerations:
Attempt vagal maneuvers first unless cardiopulmonary compromise present and it does not delay chemical or electrical cardioversion. In infants and young children, apply ice to the face without occluding the airway. In older children, valsalva maneuvers are acceptable.

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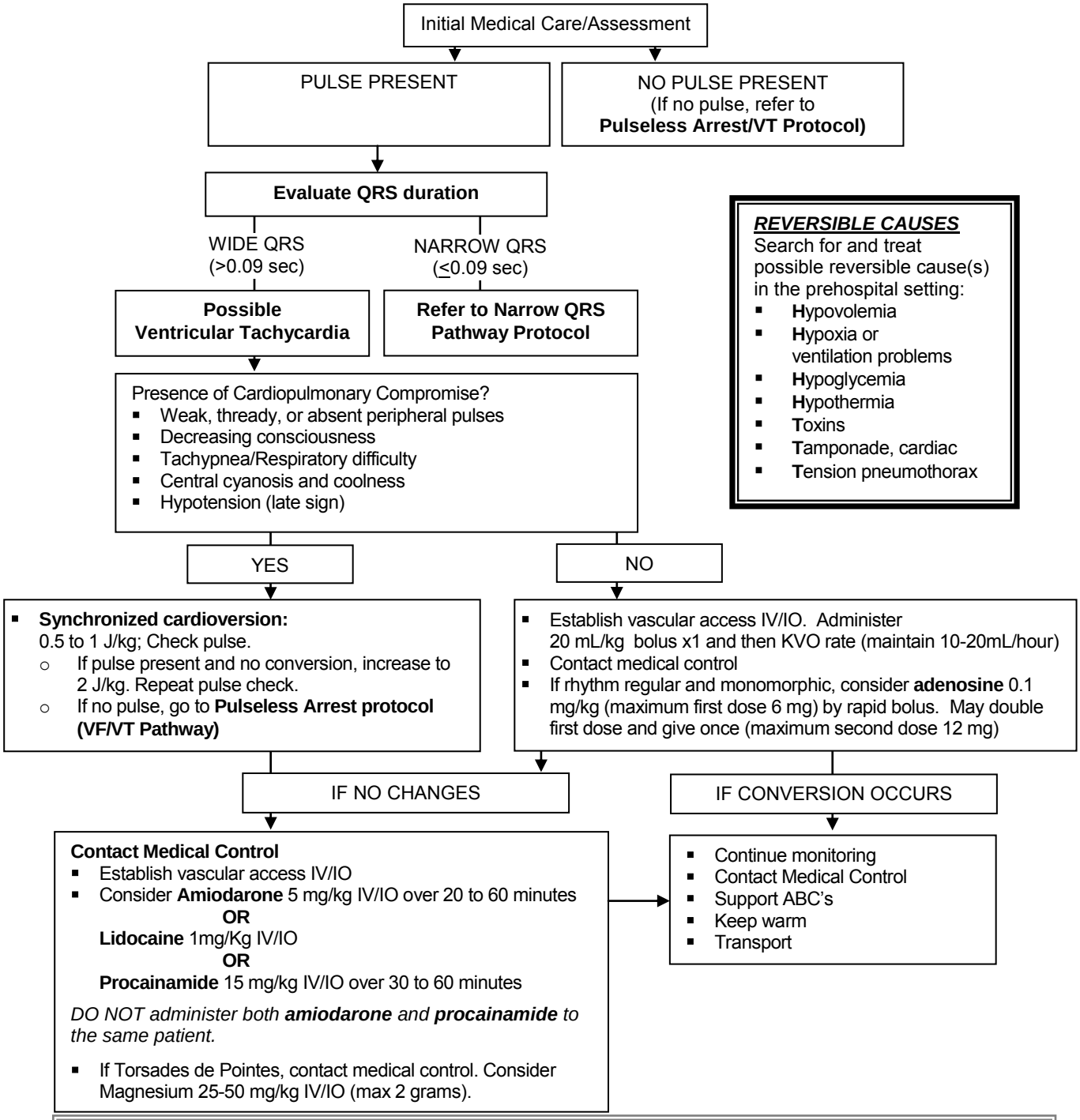
ILLINOIS EMSC
TACHYCARDIA *(WIDE QRS PATHWAY)*
ALS/ILS CARE GUIDELINE



Special Considerations:
Attempt vagal stimulation first unless cardiopulmonary compromise present and it does not delay chemical or electrical cardioversion. In infants and young children, apply ice to the face without occluding the airway. In older children, valsalva maneuvers are acceptable.

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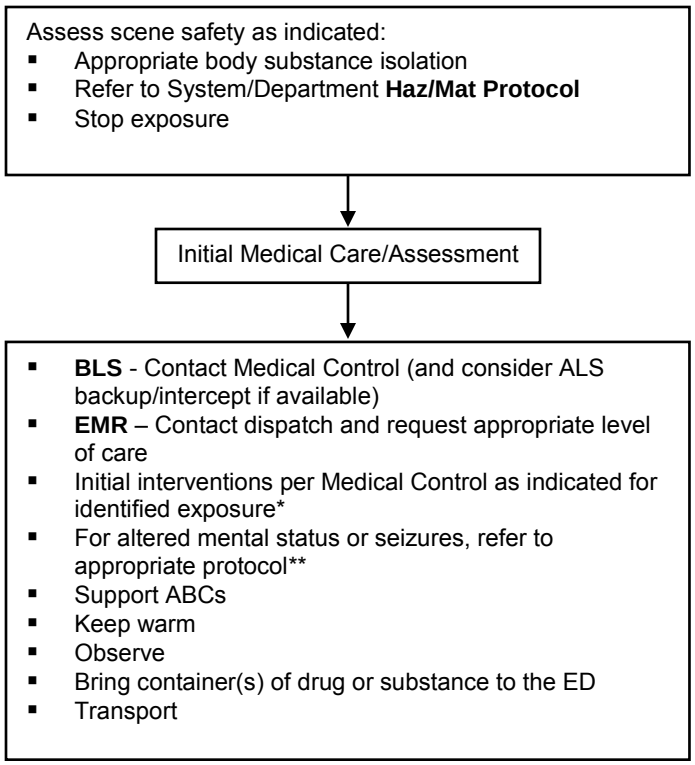
ILLINOIS EMSC
PEDIATRIC TOXIC EXPOSURES/INGESTIONS
BLS/EMR CARE GUIDELINE



Special Considerations:
- Do not induce vomiting, especially in cases where caustic substance ingestion is suspected.
- Consider DCFS methamphetamine protocol.
- Poison Center phone # 1-800-222-1222

***REFER TO BACK OF PAGE FOR LIST OF POTENTIAL ANTIDOTES, INGESTIONS AND EXPOSURES.**
****** Anticipate vomiting, respiratory arrest, seizure, dysrhythmias and refer to indicated protocols.

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EXPOSURE TO OR INGESTION OF NARCOTICS OR UNKNOWN SUBSTANCES FOR BLS/EMR

POTENTIAL TREATMENT

- Contact direct medical oversight for specific information about individual toxic exposures and treatments.

- **DO NOT INDUCE VOMITING, ESPECIALLY IN CASES WHERE CAUSTIC SUBSTANCE INGESTION IS SUSPECTED.**

- Use of an opioid antagonist in the treatment of a suspected or known opioid overdose (with altered mental status and/or respiratory depression) as directed per EMS Medical Control:
    - Weight ≤ 20 kg, administer Naloxone Auto-injector IM
    - Weight > 20kg, administer Naloxone 2.0mg /dose IN via nasal atomizer
        - Or Naloxone Auto-injector IM

  NOTE: For intranasal administration, use a nasal atomizer and administer no more than 1 mL per nostril.

POTENTIAL EXPOSURES

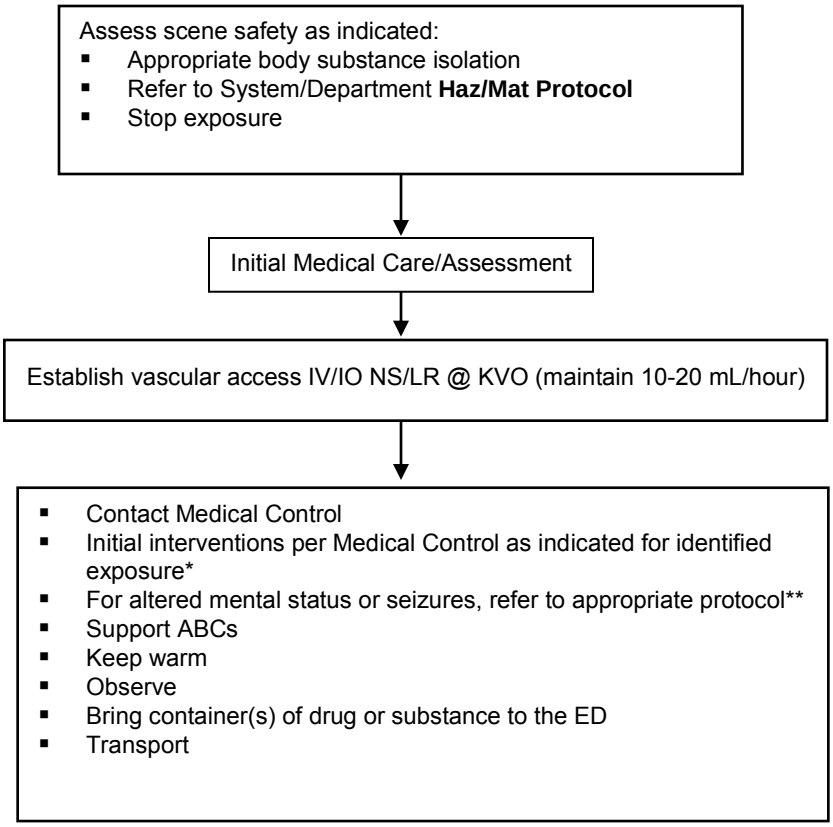
- Burning overstuffed furniture = Cyanide
- Old burning buildings = Lead fumes and Carbon Monoxide
- Bismuth subsalicylate (e.g. Pepto-Bismol™)* = Aspirin
- Pesticides = Organophosphates & Carbamates
- Topical benzocaine for dental/gum pain (e.g. Orajel™) = Methemoglobinemia
- Common Plants = Treat symptoms and bring plant/flowers to ED

*Pepto-Bismol™ children's formulation is aspirin-free

SMELLS

- Almond = Cyanide
- Fruit = Alcohol
- Garlic = Arsenic, parathion, DMSO
- Mothballs = Camphor
- Natural gas = Carbon monoxide
- Rotten eggs = Hydrogen sulfide
- Silver polish = Cyanide
- Stove gas = Think CO (CO and methane are odorless)
- Wintergreen = Methyl salicylate

ILLINOIS EMSC
PEDIATRIC TOXIC EXPOSURES/INGESTIONS
ALS/ILS CARE GUIDELINE



Special Considerations:
- Secure airway per protocol for GCS <8
- Do not induce vomiting, especially in cases where caustic substance ingestion is suspected.
- Consider DCFS methamphetamine protocol.
- Poison Center phone # 1-800-222-1222

***REFER TO BACK OF PAGE FOR LIST OF POTENTIAL ANTIDOTES, INGESTIONS AND EXPOSURES.**
**** Anticipate vomiting, respiratory arrest, seizure, dysrhythmias and refer to indicated protocols.

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EXPOSURE TO OR INGESTION OF NARCOTICS OR UNKNOWN SUBSTANCES FOR ALS/ILS

POTENTIAL TREATMENT

- Contact direct medical oversight for specific information about individual toxic exposures and treatments.

- **DO NOT INDUCE VOMITING, ESPECIALLY IN CASES WHERE CAUSTIC SUBSTANCE INGESTION IS SUSPECTED.**

- Use of an opioid antagonist in the treatment of a suspected or known opioid overdose (with altered mental status and/or respiratory depression) as per EMS medical direction:
    - Weight ≤ 20 kg, administer Naloxone 0.1 mg/kg, IV/IO/SQ/IM/IN, or 0.2 mg/kg ET
    - Weight > 20kg, administer Naloxone 2.0mg /dose

  NOTE: For intranasal administration, use a nasal atomizer and administer no more than 1 mL per nostril.

- Treatment for toxic exposures may be instituted as permitted by medical direction, including the following:
    - High-dose atropine for organophosphates
    - Sodium bicarbonate for tricyclic antidepressants
    - Glucagon for calcium channel blockers or beta-blockers
    - Diphenhydramine for dystonic reactions
    - Dextrose for insulin overdose

POTENTIAL EXPOSURES

- Burning overstuffed furniture = Cyanide
- Old burning buildings = Lead fumes and Carbon Monoxide
- Bismuth subsalicylate (e.g. Pepto-Bismol™)* = Aspirin
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- Rotten eggs = Hydrogen sulfide
- Silver polish = Cyanide
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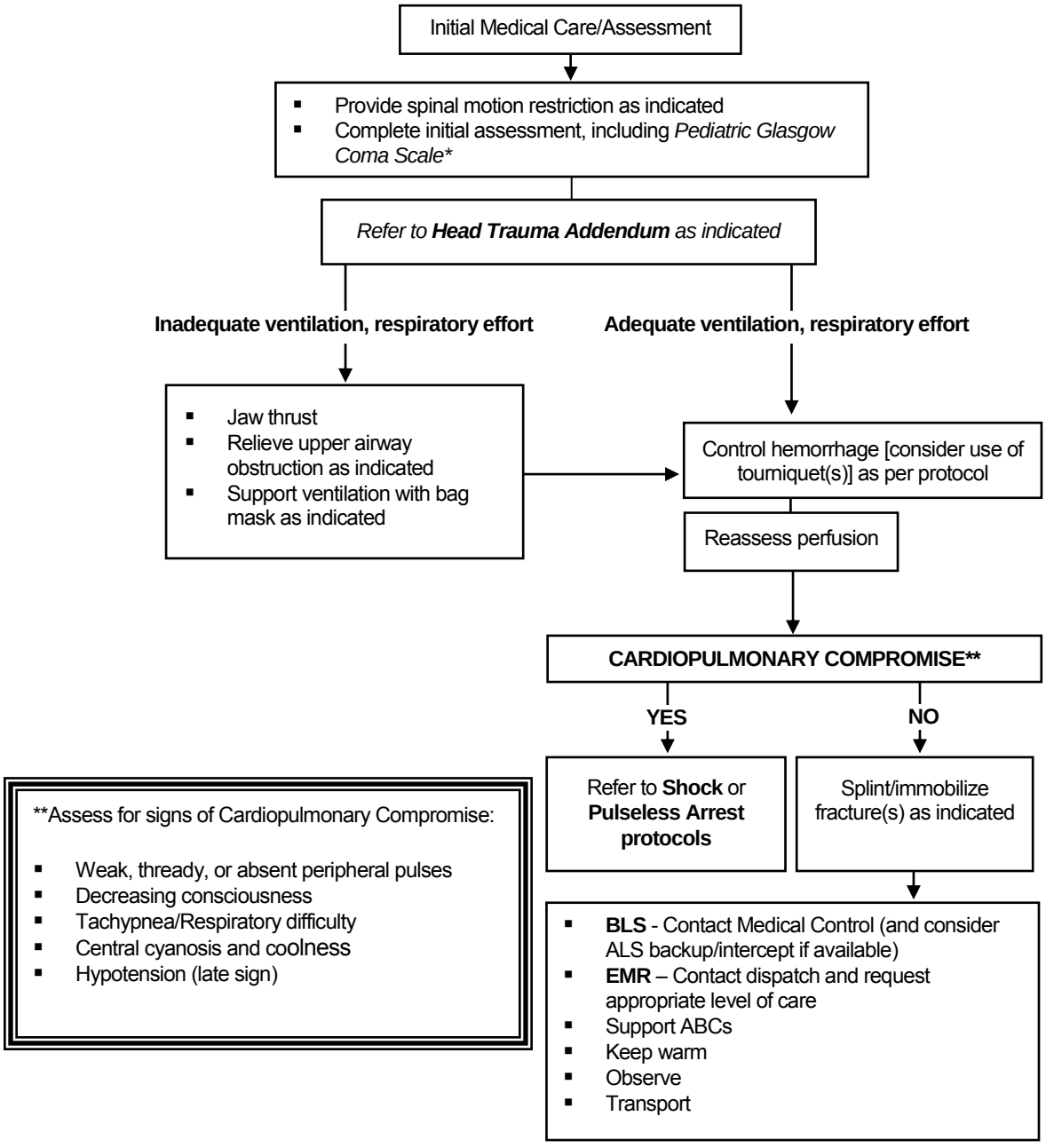
- Wintergreen = Methyl salicylate

ILLINOIS EMSC
PEDIATRIC TRAUMA
BLS/EMR CARE GUIDELINE



***Refer to back of protocol for Pediatric Head Trauma Addendum and for Pediatric Glasgow Coma Scale.**

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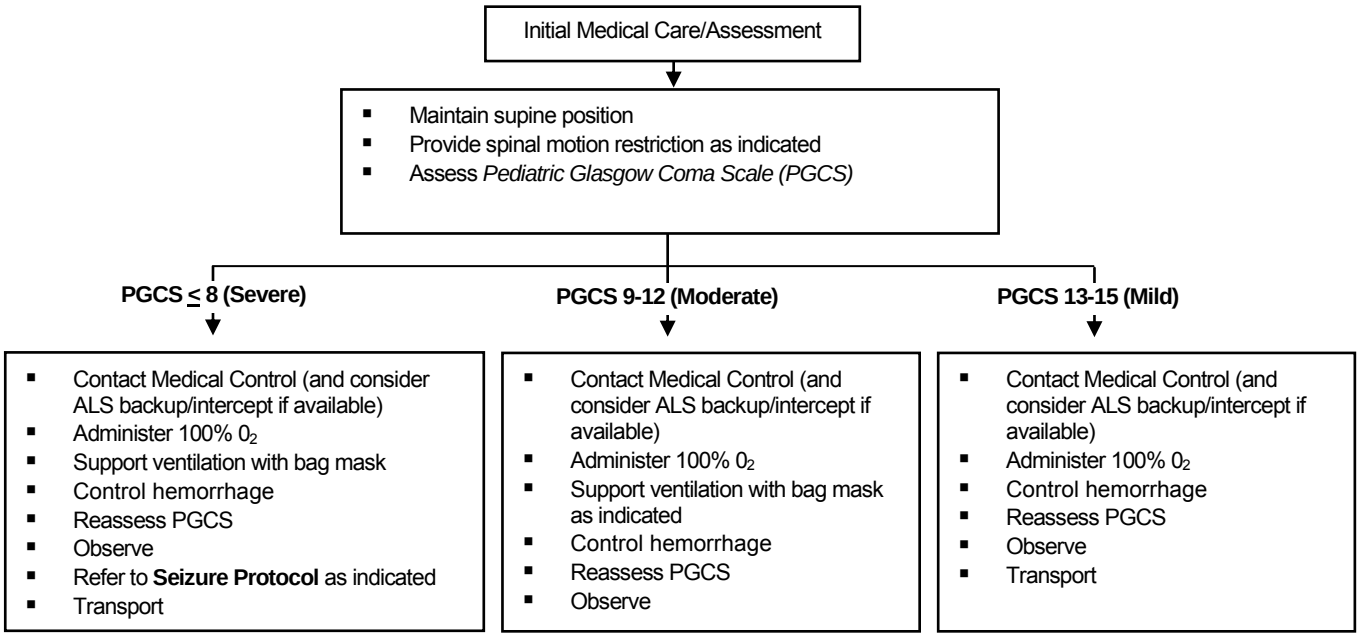
ILLINOIS EMSC
PEDIATRIC HEAD TRAUMA ADDENDUM
BLS/EMR CARE GUIDELINE



PEDIATRIC GLASGOW COMA SCALE (PGCS)			
	< 2 Years	**> 2 Years**	**Score**
EYE OPENING	Spontaneous	Spontaneous	4
	To speech	To speech	3
	To pain	To pain	2
	No response	No response	1
VERBAL RESPONSE	Coos, babbles, appropriate words	Oriented/appropriate words	5
	Irritable, cries but consolable	Confused	4
	Cries to pain, inconsolable	Inappropriate words/persistent cry	3
	Moans to pain	Incomprehensible sounds	2
	No response	No response	1
MOTOR RESPONSE	Normal spontaneous movements	Obeys commands	6
	Withdraws from touch	Localizes to pain	5
	Withdraws from pain	Withdraws from pain	4
	Abnormal flexion (decorticate)	Abnormal flexion (decorticate)	3
	Abnormal extension (decerebrate)	Abnormal extension (decerebrate)	2
	No response	No response	1
TOTAL PEDIATRIC GLASGOW COMA SCORE:			**(3-15)**

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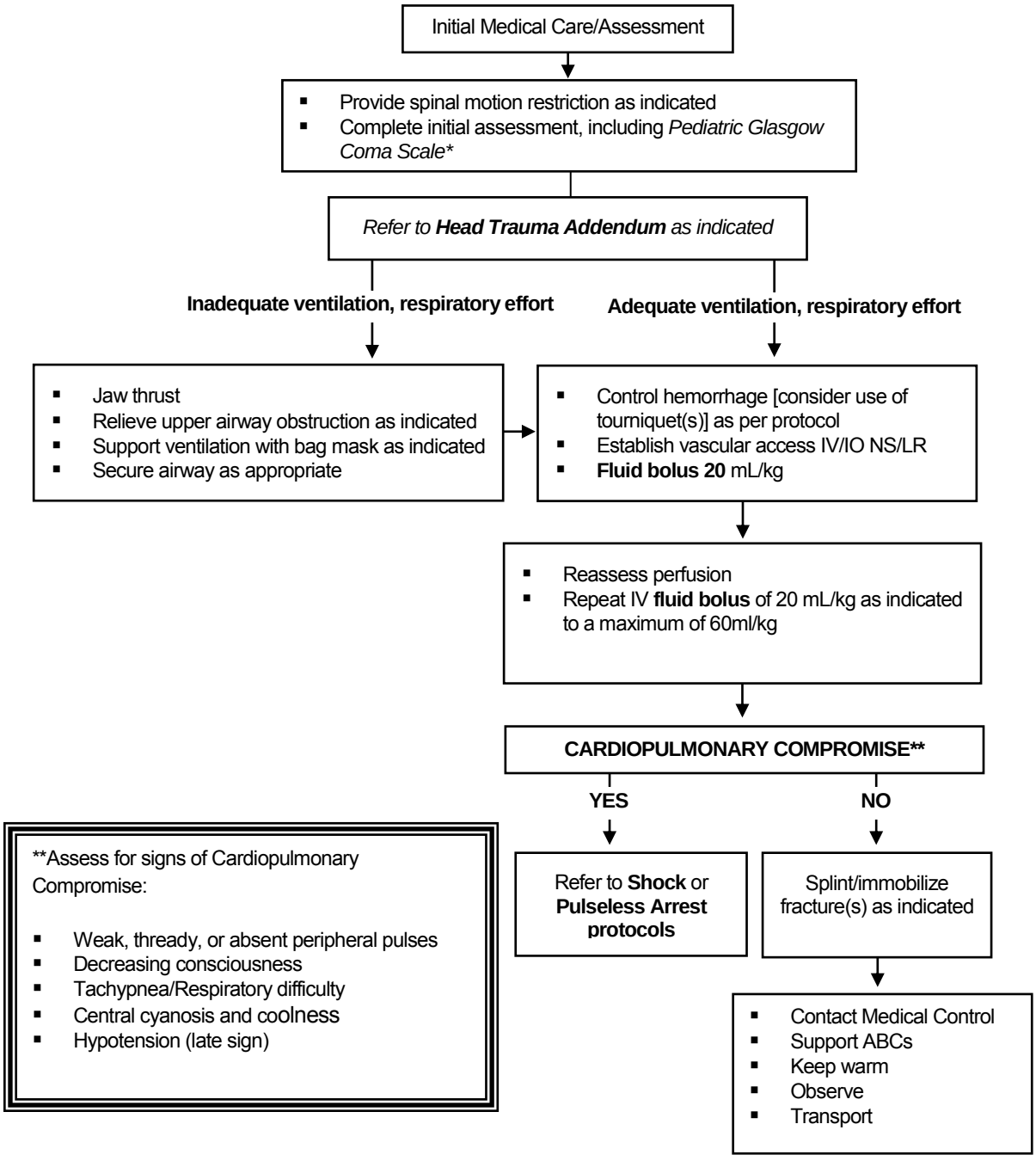
ILLINOIS EMSC
PEDIATRIC TRAUMA
ALS/ILS CARE GUIDELINE



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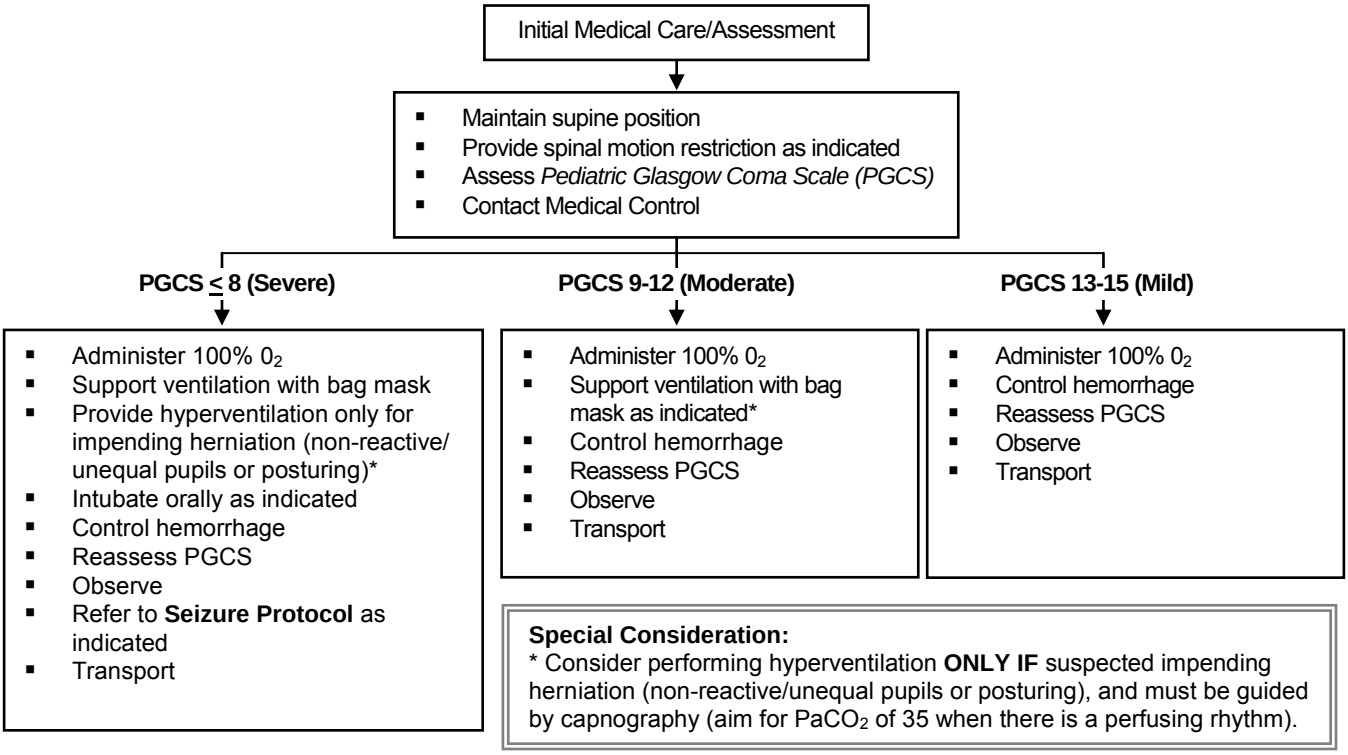

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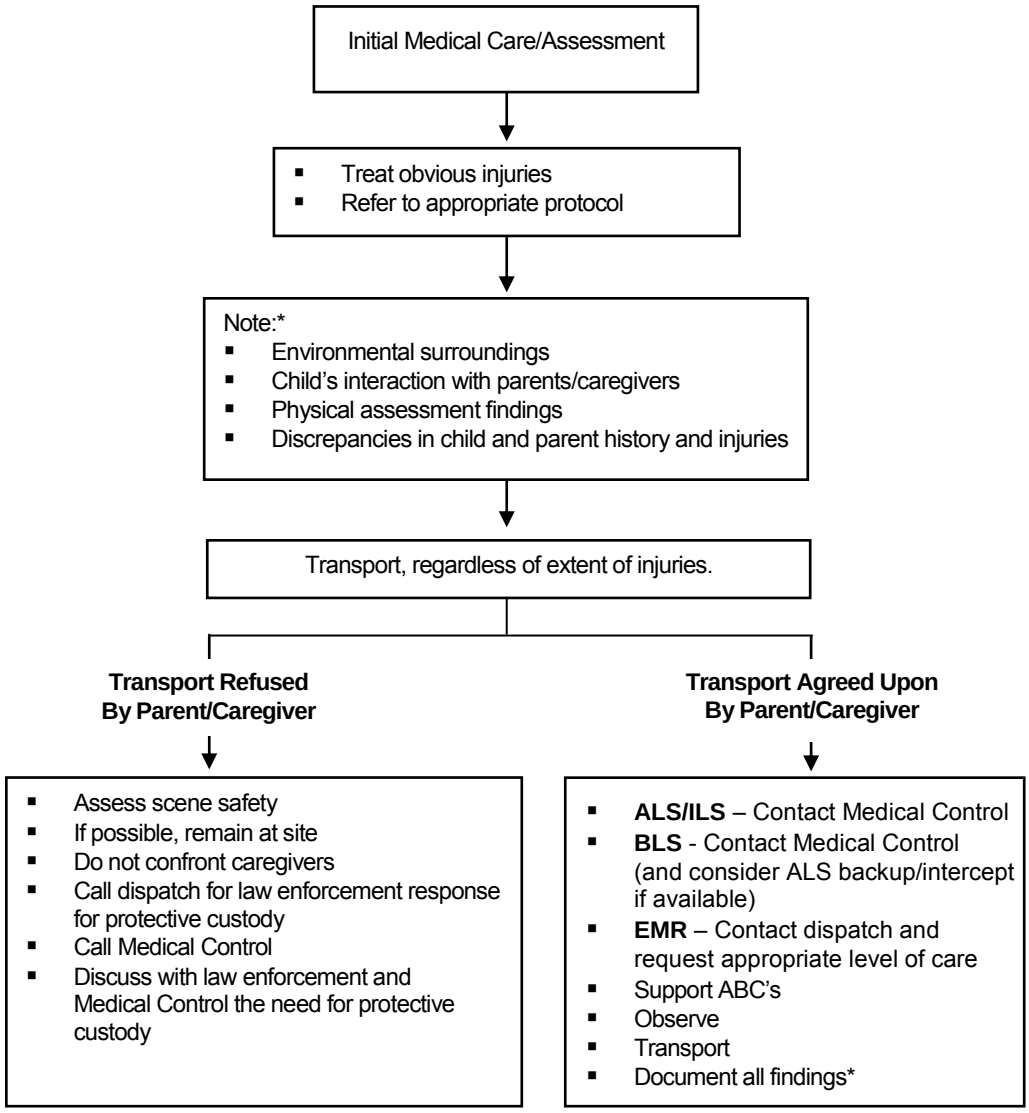
ILLINOIS EMSC
SUSPECTED CHILD ABUSE AND NEGLECT
ALS/ILS/BLS/EMERGENCY MEDICAL RESPONDER CARE GUIDELINE



REPORT TO ED PHYSICIAN, ED CHARGE NURSE AND DCFS (1-800-25-ABUSE). WHEN CONTACTING DCFS, IDENTIFY SELF AS A STATE MANDATED REPORTER TO EXPEDITE PROCESS.

*Refer to next page for special considerations.

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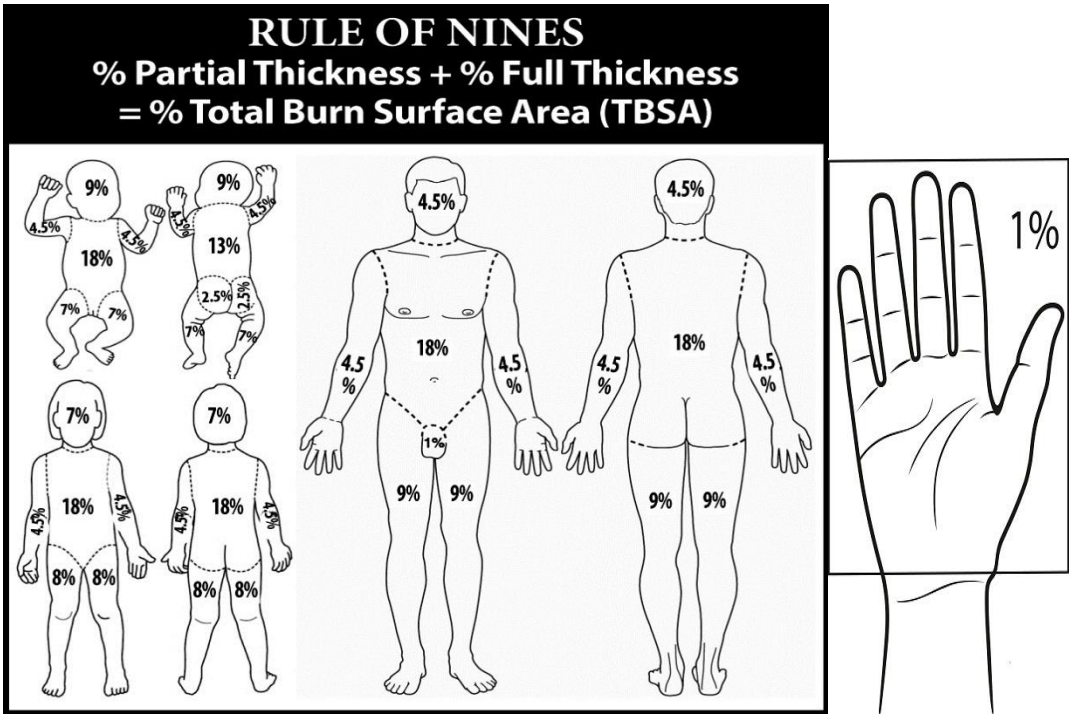
SPECIAL CONSIDERATIONS:

1. You are required by law to report your suspicions.
2. Document findings objectively:
    - Body location of the injury
    - Severity of the injury
    - Patterns of similar injury over time
    - Include verbatim statements offered by the child
    - Note verbatim statements from the parent/caregiver
3. Suspect battered or abused child if any of the following is found:
    - A discrepancy exists between history of injury and physical exam.
    - Caregiver provides a changing or inconsistent history.
    - There is a prolonged interval between injury and the seeking of medical help.
    - Child has a history of repeated trauma.
    - Caregiver responds inappropriately or does not comply with medical advice.
    - Suspicious injuries are present, such as:
        - injuries of soft tissue areas, including the face, neck and abdomen,
        - injuries of body areas that are normally shielded, including the back and chest,
        - fractures of long bones in children under 3 years of age,
        - old scars, or injuries in different stages of healing,
        - bizarre injuries, such as bites, cigarette burns, rope marks, imprint of belt or other object,
        - trauma of genital or perianal areas,
        - sharply demarcated burns in unusual areas,
        - scalds that suggest child was dipped into hot water.
4. The following are some common forms of neglect:
    - Environment is dangerous to the child (e.g., weapons within reach, playing near open windows without screen/guards, perilously unsanitary conditions, etc.).
    - Caretaker has not provided, or refuses to permit medical treatment of child's acute or chronic life-threatening illness, or of chronic illness, or fails to seek necessary and timely medical care for child.
    - Child under the age of 10 has been left unattended or unsupervised. (Although in some situations children under 10 years of age may be left alone without endangerment, EMS personnel cannot make such determinations.) All instances should be reported for DCFS investigation.
    - Abandonment
    - Caretaker appears to be incapacitated (e.g., extreme drug/alcohol intoxication, disabling psychiatric symptoms, severe illness) and cannot meet child's care requirements.
    - Child appears inadequately fed (e.g., seriously underweight, emaciated, or dehydrated) inadequately clothed, or inadequately sheltered.
    - Child is found to be intoxicated or under the influence of an illicit substance(s).

Resources

BURN RESOURCE

%BSA by anatomical area **Palm-and-hand calculation[a]**



[a] Palm of hand (including fingers) of infant or child = 1% of the total body surface

Burn Center Referral Criteria

Any patient with a life threatening condition should be treated until stable at the nearest appropriate facility before being transferred to a burn center. According to the American Burn Association, burn injuries that should be referred to a burn center include:

1. Partial thickness burns greater than 10% total body surface area (TBSA)
2. Burns that involve the face, hands, feet, genitalia, perineum, or major joints
3. Third-degree burns in any age group
4. Electrical burns, including lightning injury
5. Chemical burns
6. Inhalation injury
7. Burn injury in patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality
8. Any patients with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. In such cases, if the trauma poses the greater immediate risk, the patient may be initially stabilized in a trauma center before being transferred to a burn unit. Physician judgment will be necessary in such situations and should be in concert with the regional medical control plan and triage protocols
9. Burned children in hospitals without qualified personnel or equipment for the care of children
10. Burn injury in patients who will require special social, emotional, or rehabilitative intervention

EXPOSURE TO OR INGESTION OF NARCOTICS OR UNKNOWN SUBSTANCES

POTENTIAL TREATMENT

- Contact direct medical oversight for specific information about individual toxic exposures and treatments.
- **DO NOT INDUCE VOMITING, ESPECIALLY IN CASES WHERE CAUSTIC SUBSTANCE INGESTION IS SUSPECTED.**
- Use of an opioid antagonist in the treatment of a suspected or known opioid overdose (with altered mental status and/or respiratory depression) as directed per EMS Medical Control:

  BLS/EMR
  - Weight ≤ 20 kg, administer Naloxone Auto-injector IM
  - Weight > 20kg, administer Naloxone 2.0mg /dose IN via nasal atomizer
    - Or Naloxone Auto-injector IM

  ALS/ILS
  - Weight ≤ 20 kg, administer Naloxone 0.1 mg/kg, IV/IO/SQ/IM/IN, or 0.2 mg/kg ET
  - Weight > 20kg, administer Naloxone 2.0mg /dose

  NOTE: For intranasal administration, use a nasal atomizer and administer no more than 1 mL per nostril.

- Treatment for toxic exposures may be instituted as permitted by medical direction, including the following:
  - High-dose atropine for organophosphates
  - Sodium bicarbonate for tricyclic antidepressants
  - Glucagon for calcium channel blockers or beta-blockers
  - Diphenhydramine for dystonic reactions
  - Dextrose for insulin overdose

POTENTIAL EXPOSURES

- Burning overstuffed furniture = Cyanide
- Old burning buildings = Lead fumes and Carbon Monoxide
- Bismuth subsalicylate (e.g. Pepto-Bismol™)* = Aspirin
- Pesticides = Organophosphates & Carbamates
- Topical benzocaine for dental/gum pain (e.g. Orajel™) = Methemoglobinemia
- Common Plants = Treat symptoms and bring plant/flowers to ED

*Pepto-Bismol™ children's formulation is aspirin-free

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- Almond = Cyanide
- Fruit = Alcohol
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- Mothballs = Camphor
- Natural gas = Carbon monoxide
- Rotten eggs = Hydrogen sulfide
- Silver polish = Cyanide
- Stove gas = Think CO (CO and methane are odorless)
- Wintergreen = Methyl salicylate

VITAL SIGNS AND CARDIOPULMONARY COMPROMISE RESOURCE

Vital Sign/Age Parameters

Age	Pulse	Systolic Blood Pressure	Respiratory Rate
Newborn	100 - 180	>60	30 - 60
3 months	100 - 160	>70	30 - 60
6 months	110 - 160	>70	30 - 60
9 months	110 - 160	>70	30 - 60
12 months	110 - 160	>70	30 - 60
2 years	90 - 150	>70	24 – 40
4 years	90 - 150	>75	22 – 34
6 years	70 - 120	>80	18 – 30
8 years	70 – 120	>80	18 – 30
10 years	70 - 120	>80	18 – 30
12 years	60 - 110	>90	12 - 16

Indicators of Cardiopulmonary Compromise in Children

- Weak, thready, or absent peripheral pulses
- Decreasing consciousness
- Tachypnea/Respiratory difficulty
- Central cyanosis and coolness
- Hypotension (late sign)

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