Fulton County Emergency Medical Services

Clinical Care Guideline – M15

Acute Stroke

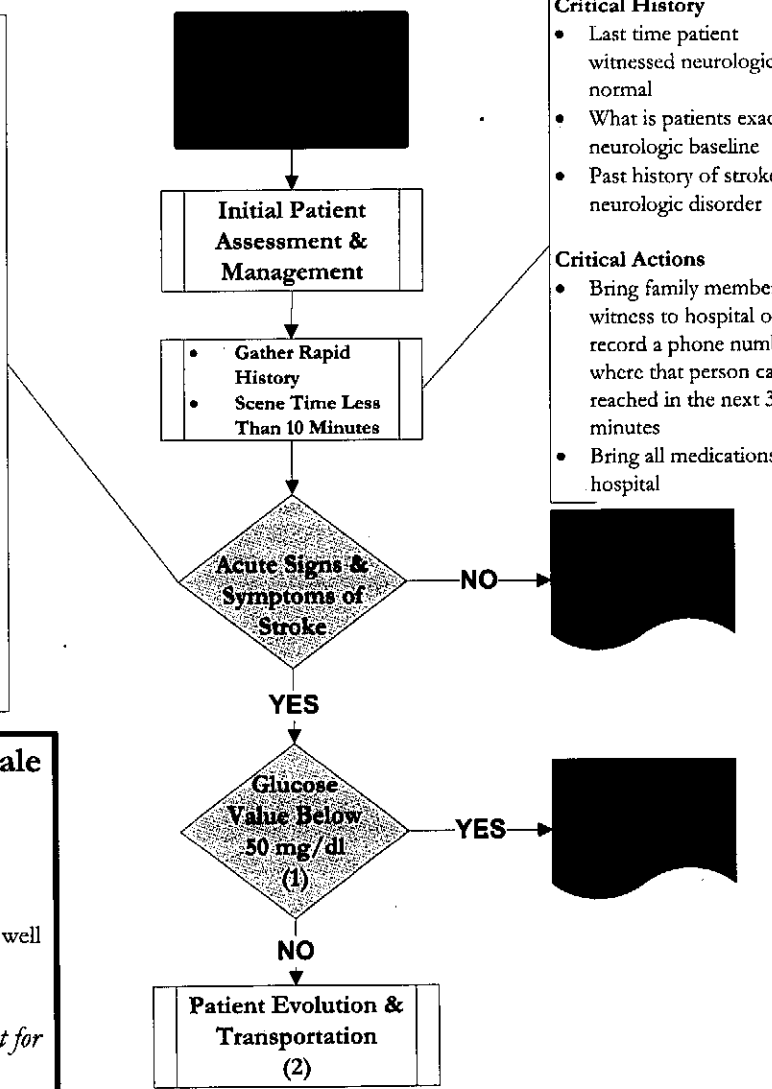
12/12/2014

History: Previous TIA, Stroke, Head Trauma, Hypertension, Coronary Artery Disease

Symptoms: Weakness - usually on one side of the body, Difficulty Speaking, Headache, Loss of Vision, Facial Asymmetry

Signs: Altered Mental Status, Seizure Activity, Aphasia, Abnormal Pupils, Abnormal Respiratory Patterns, Hemiparesis, Hemiplegia, Dysphasia, Facial Assymetry

Signs & Symptoms may include but are not limited to the above!
The most common signs of stroke are weakness / numbness on one side of the body and / or difficulty speaking



Critical History

- Last time patient witnessed neurologic normal
- What is patients exact neurologic baseline
- Past history of stroke or neurologic disorder

Critical Actions

- Bring family member or witness to hospital or record a phone number where that person can be reached in the next 30 minutes
- Bring all medications to hospital

The Cincinnati Prehospital Stroke Scale

Facial Droop

-Have patient show teeth or smile

Normal - both sides of face move equally.

Abnormal - one side of face does not move as well as the other side.

Arm Drift

-Patient closes both eyes and holds arms straight out for 10 seconds

Normal - both arms move the same or both arms do not move at all.

Abnormal - one arm does not move or one arm drifts down when compared to the other.

Abnormal Speech

-Have the patient say "you can't teach an old dog new tricks"

Normal - patient uses correct words with no slurring.

Abnormal - patient slurs words, uses the wrong words, or is unable to speak.

Interpretation:

If any one of the three is abnormal, the likelihood of stroke is high.

1. Profound hypoglycemia can present with signs and symptoms that mimic an acute stroke. However, prehospital care providers should only administer D50 when the glucose value is below 50 mg/dl and the patient history is consistent with induced hypoglycemia; insulin or oral hypoglycemic agent use.
2. Patients with a suspected acute stroke should be taken to the closest appropriate Stroke Center consistent with *Patient Choice* and *Reasonable Distance.*

   The receiving hospital should be contacted as early as possible to alert them to the incoming *Acute Stroke.* Be prepared to report the last time the patient was noted as being normal.
3. Note that seizure activity is a contraindication for thrombolysis.

Fulton County Emergency Medical Services

Clinical Care Guideline – M16

Seizure

12/12/2014

[redacted]

History: Seizure History, Alcohol Use, Diabetes, Trauma, Drug Abuse

Findings: Tonic-Clonic Movements, Decreased LOC, Incontinence, Oral Trauma (i.e., tongue laceration)

Initial Patient Assessment & Management (1)

Glucose Value Below 50 mg/dl — YES → [redacted]

NO

Pregnant — YES → [redacted]

NO

Seizure Resolved — YES

NO

IV Access — NO → [redacted]

YES

[redacted]

Seizure Resolved — NO → [redacted]

YES

OR

[redacted]

[redacted]

Seizure Resolved — YES

NO

[redacted]

Patient Evolution & Transportation

1. Cervical Spine Immobilization in all cases of known or suspected trauma.
2. Valium and Versed will cause hypoventilation and potentially respiratory arrest. Have equipment and help readily available to support the airway when administering these medications.

   Valium and Versed may be repeated x 1 if seizure activity does not resolve within 5 minutes of initial dose.

   If hypotension develops with Valium or Versed administer a 10ml/Kg bolus of normal saline.
3. IO access should only be used in seizure patients refractory to intranasal Versed and exhibiting continuous seizure activity

Fulton County Emergency Medical Services

Clinical Care Guideline – M17

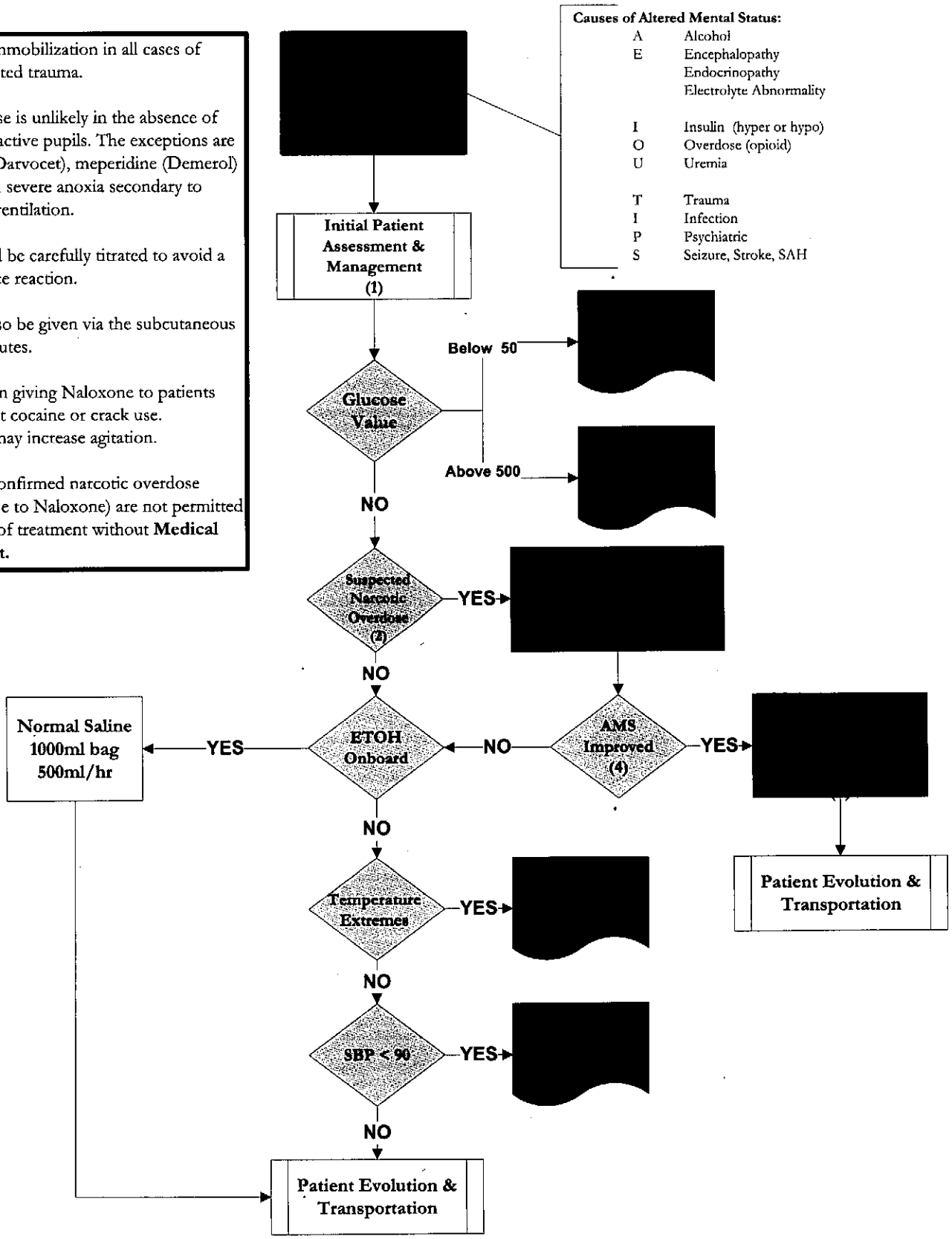
Altered Mental Status

12/12/2014

1. Cervical Spine Immobilization in all cases of known or suspected trauma.
2. Narcotic overdose is unlikely in the absence of pinpoint, non-reactive pupils. The exceptions are propoxyphene (Darvocet), meperidine (Demerol) and patients with severe anoxia secondary to prolonged hypoventilation.
3. Naloxone should be carefully titrated to avoid a violent emergence reaction.

   Naloxone can also be given via the subcutaneous and intranasal routes.

   Use caution when giving Naloxone to patients with concomitant cocaine or crack use. Administration may increase agitation.
4. Patients with a confirmed narcotic overdose (positive response to Naloxone) are not permitted to sign a refusal of treatment without **Medical Control Contact.**

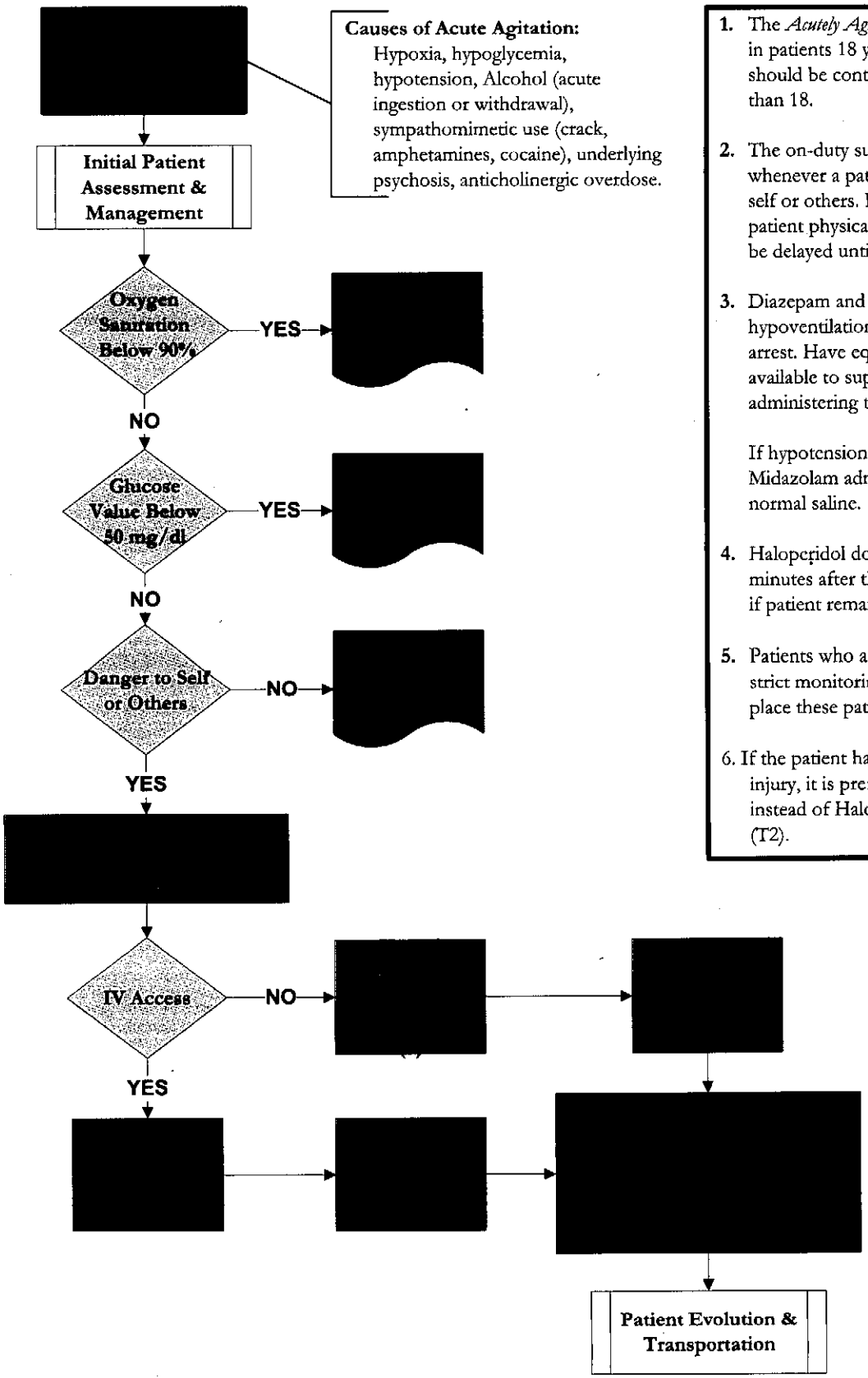


Fulton County Emergency Medical Services

Clinical Care Guideline – M18

Acute Agitation

12/12/2014



1. The *Acutely Agitated Adult Protocol* is only for use in patients 18 years or older. Medical control should be contacted regarding patients younger than 18.

2. The on-duty supervisor must be notified whenever a patient is judged to be a danger to self or others. Police must be notified when patient physical restraint is required. This can be delayed until after situation is stabilized.

3. Diazepam and Midazolam can cause hypoventilation and potentially respiratory arrest. Have equipment and help readily available to support the airway when administering these medications.

   If hypotension develops with Diazepam or Midazolam administer a 10 ml/Kg bolus of normal saline.

4. Haloperidol dose may be repeated one time, 10 minutes after the first dose, for a total of 10 mg if patient remains acutely agitated.

5. Patients who are chemically restrained require strict monitoring and soft restraints. Never place these patients in a face down position.

6. If the patient has evidence of a stroke or head injury, it is preferred to give benzodiazepines instead of Haldol. See Traumatic Brain Injury (T2).

Fulton County Emergency Medical Services

Clinical Care Guideline - M19

Syncope

12/12/2014

1. Patients with other significant symptoms such as chest pain and dyspnea should be treated via symptom specific protocols.
2. Patients at risk for arrhythmia include:
   - Age greater than 55
   - Known history of arrhythmia
   - History of coronary artery disease
   - Significant ectopy on ECG
3. High consideration for 12-lead EKG to identify STEMI as possible cause for syncope.

[redacted]

Initial Patient Assessment & Management

Normal Mental Status

NO

[redacted]

YES

Normal Sinus Rhythm (3)

NO

[redacted]

[redacted]

YES

SBP Above 90 mmHg

NO

Consider:

- Dehydration
- Drug Overdose
- Heat Illness
- GI Bleeding
- Gynecologic Bleeding
- Sepsis

Normal Saline 10 ml/kg IV Bolus

[redacted]

YES

Other Significant Symptoms (1)

YES

[redacted]

NO

Arrhythmia Risk (2)

YES

[redacted]

NO

Patient Evolution & Transportation

History:

Cardiac disease, deizures, trauma, diabetes

Possible Causes:

Vasovagal response, orthostatic changes, dysrhythmias, GI bleed, dehydration, heat illness, TIA, seizure, trauma medications (diuretics, nitrates, antiarrhythmics)

Precipitating Symptoms:

Faintness, dizziness, nausea, pallor, blurred vision, diaphoresis

Findings:

Altered or normal mental status, postural hypotension, dysrhythmias, hypoglycemia,

Fulton County Emergency Medical Services

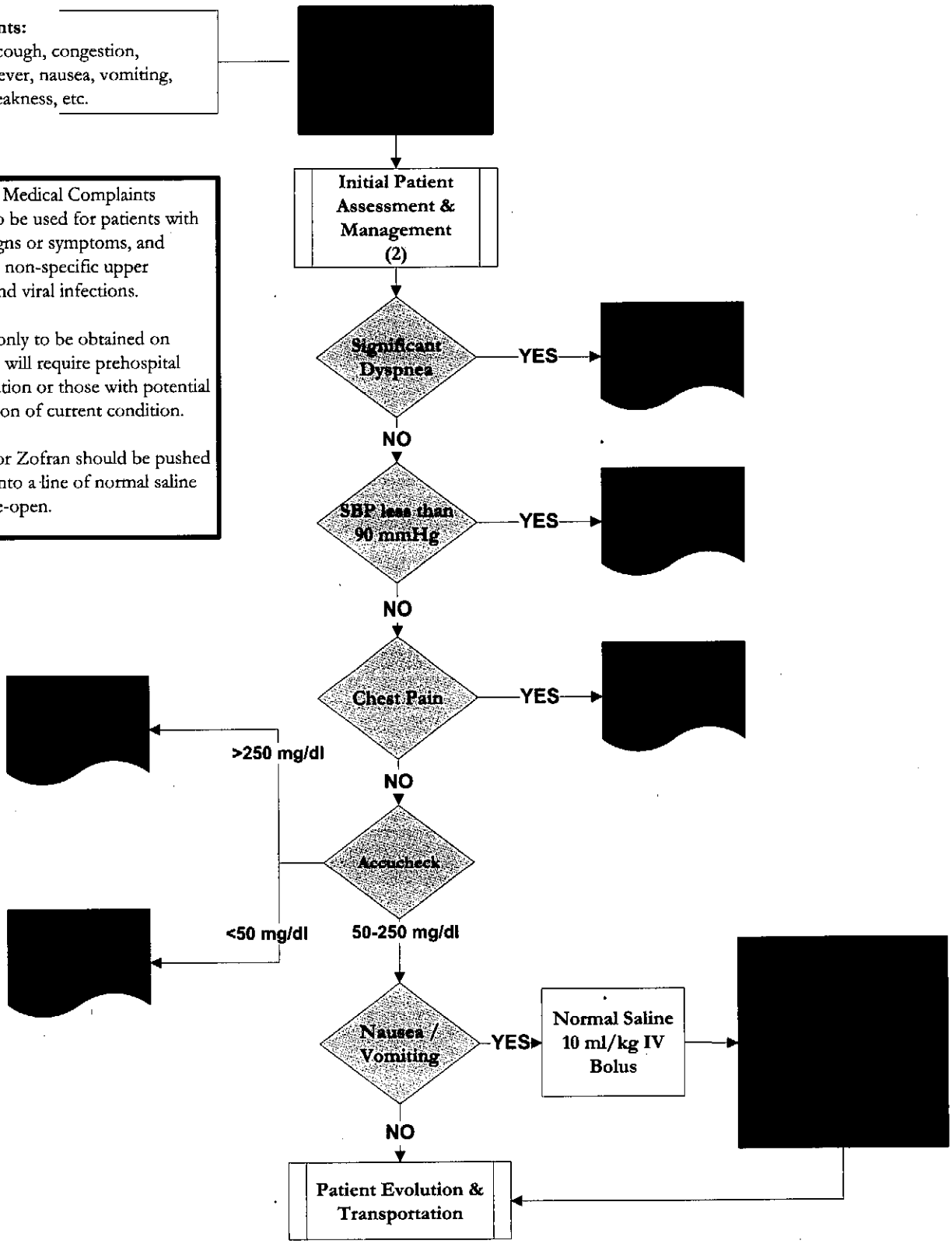
Clinical Care Guideline – M20

General Medical Complaints

12/12/2014

Chief Complaints:
Headache, cough, congestion, weakness, fever, nausea, vomiting, diarrhea, weakness, etc.

1. The General Medical Complaints protocol is to be used for patients with ill-defined signs or symptoms, and patients with non-specific upper respiratory and viral infections.
2. IV access is only to be obtained on patients who will require prehospital fluid/medication or those with potential for degradation of current condition.
3. Compazine or Zofran should be pushed very slowly into a line of normal saline running wide-open.



Fulton County Emergency Medical Services

Clinical Care Guideline – M21

Hyperglycemia

12/12/2014

History: Diabetes, Steroid Use, Recent Illness

Symptoms: Nausea, Vomiting, Diarrhea, Abdominal Pain, Fatigue

Findings: AMS, Tachycardia, Kussmaul respirations, Ketone Odor of breath

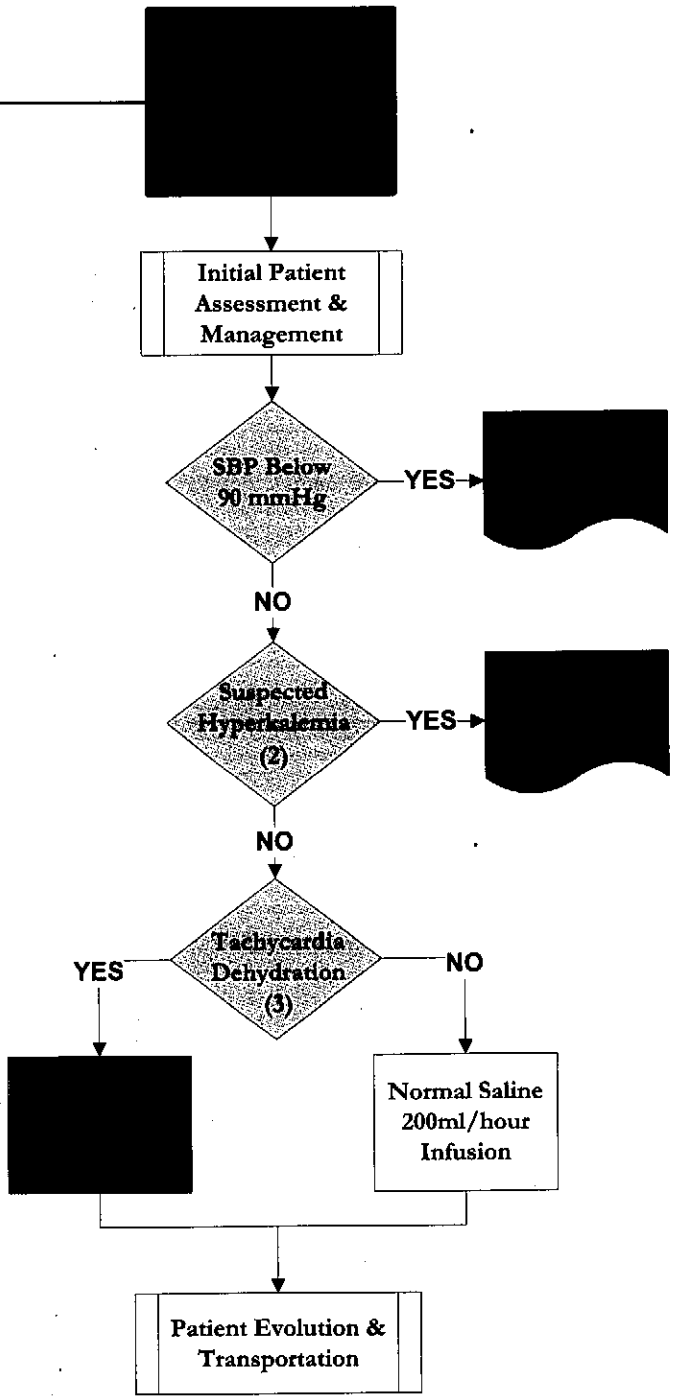
1. The *Hyperglycemia Protocol* is to be used in the case of patients with significant hyperglycemia and potential diabetic ketoacidosis in addition to patients with non-specific symptoms and evidence of hyperglycemia. Patients with more specific complaints such as chest pain or respiratory distress should be treated primarily via the protocol most applicable to their principal complaint.

2. Hyperkalemia is most commonly encountered in the prehospital environment in the context of chronic renal failure and severe metabolic acidosis (DKA). Patients with the aforementioned conditions and ECG changes consistent with hyperkalemia should be treated presumptively via the *Hyperkalemia Protocol.*

   Early ECG Changes:
   - Peaked T waves, flattened p waves & increased PR interval; loss of p waves

   Late ECG Changes:
   - Widened QRS complex, deepened S waves, merging of the S and T waves (sinusoidal ECG)

3. Patients with clinical evidence of tachycardia or dehydration should be hydrated as noted and managed by a paramedic level provider.



Fulton County Emergency Medical Services

Clinical Care Guideline – M22

Hypoglycemia

12/12/2014

History: Insulin Use, Oral Hypoglycemic Use, Alcoholism, Hypermetabolic State, Decreased Food Intake

Symptoms: Confusion, Nausea

Signs: Agitation, AMS, Focal Neurologic Signs, Diaphoresis, Clammy Skin, Pilo-erection

[redacted]

1. Insta-glucose, Juice, Candy, Soda. Only to be used in the awake patient capable of actively swallowing.
2. Glucagon to be administered IM in lateral buttock. Glucagon can sometimes be ineffective in patients with limited glycogen stores (alcoholics, elderly & malnourished).
3. Dextrose can cause severe extravasation necrosis. **Confirm** IV patency with normal saline flush prior to injection. D50 is only to be given IV push through a patent line that is 20 gauge or greater.
4. Contact medical control immediately if patient declines transport after treatment.
5. Any suspected D50 extravasation must be reported to the receiving facility and EMS shift supervisor.

Initial Patient Assessment & Management

Awake & Alert

YES → **Oral Glucose (1)**

NO → **IV Access**

NO → [redacted]

NO ← **Improved**

YES → **Confirm IV Patency with normal saline flush and open running line prior to injection**

YES → **Dextrose 50% 25 gm IV Slow Push (3)**

YES → [redacted]

YES → **Transport Declined**

NO → **Patient Evolution & Transportation**

Improved (4)

YES → **Patient Evolution & Transportation**

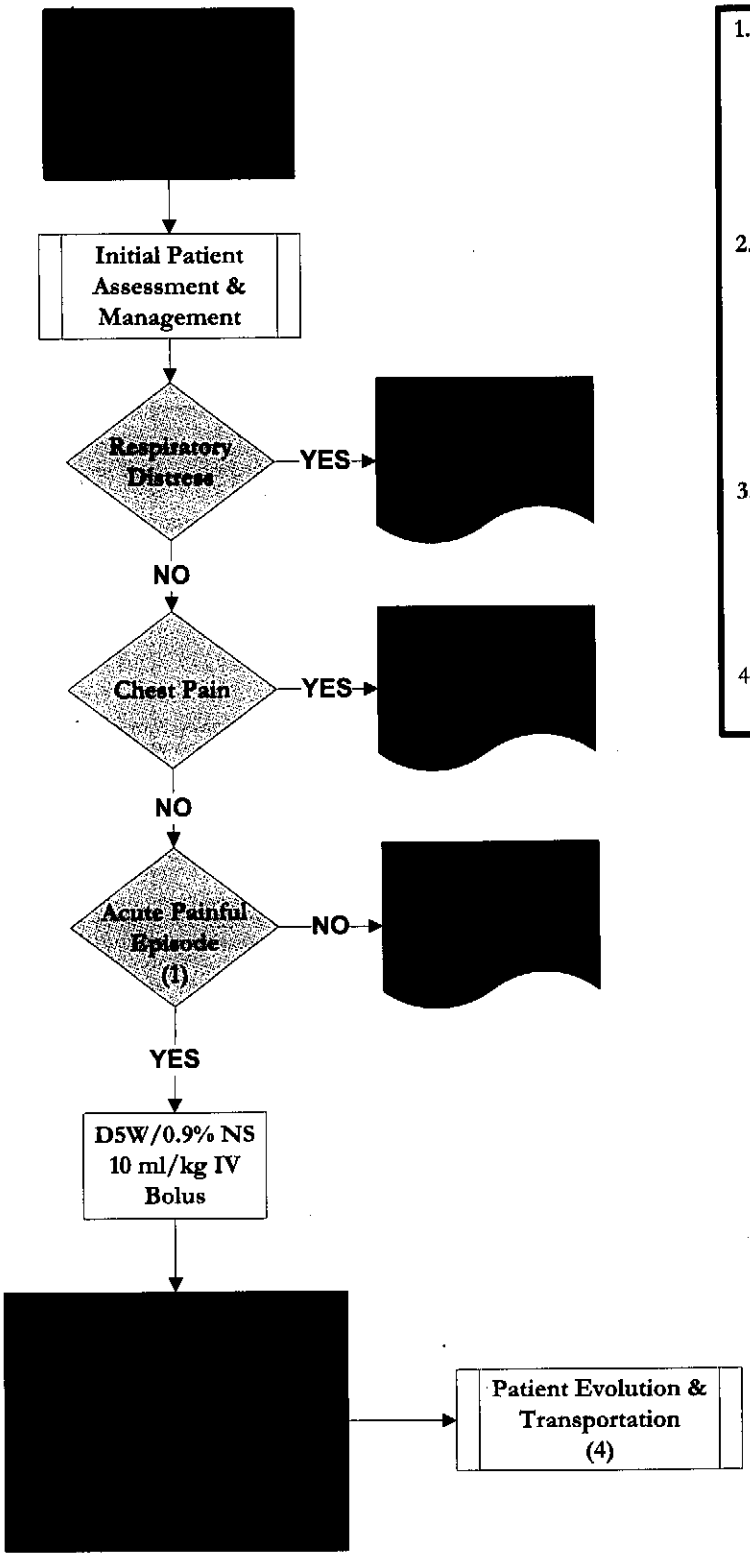
NO → **Consider:** Overdose, Sepsis, Hypothermia, Shock, Alcohol → [redacted]

Fulton County Emergency Medical Services

Clinical Care Guideline – M23

Sickle Cell Disease / Painful Crisis

12/12/2014



1. An acute painful episode may manifest as a bone/joint or abdominal crisis, and occasionally as priapism. Typically the patient will have a prior history of similar painful episodes. Lack of a prior hx of same symptoms may indicate another etiology.

2. Morphine or Fentanyl is to be administered IV to patients without history of allergy and SBP > 90 mm/hg.

   Morphine or Fentanyl may be repeated one time if sufficient relief is not obtained in 5 minutes.

3. Patients that choose Grady Hospital as a destination should be transported to the sickle center directly with the exception of patients that do not have symptoms of a typical painful sickle cell crisis.

4. Narcotics used for pain are determined by service medical direction.

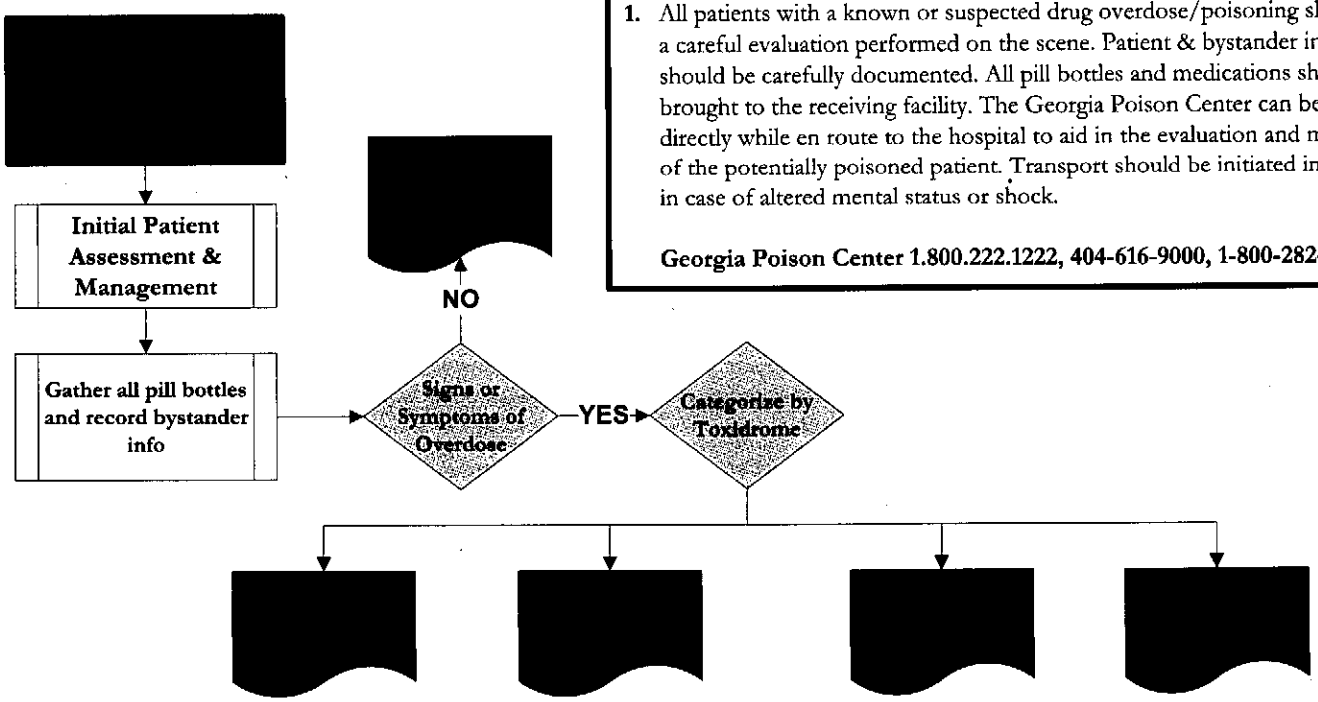
Fulton County Emergency Medical Services

Clinical Care Guideline – M24

Initial Approach to Drug Overdose / Poisoning

12/12/2014

	TYPICAL AGENTS	LEVEL OF CONSCIOUSNESS	PUPILS	SKIN	HEART RATE	OTHER FINDINGS
Sympathomimetic	Cocaine, Crack & Methamphetamine	Alert & Agitated	Mydriasis	Warm & Diaphoretic	Increased	Hypertension & Seizures
Opioid	Heroin, Morphine & Vicodin	Depressed	Miosis	Cool	Normal or Decreased	Respiratory Depression & Hypothermia
Anticholinergic	Scopolamine, Benadryl & Atropine	Altered – Usually Agitated	Mydriasis	Warm & Dry	Increased	Decreased Bowel Sounds, Urinary Retention, Hyperthermia & Seizures
Cholinergic	Organophosphates & Carbamates	Altered – Usually Depressed	Variable	Diaphoresis	Decreased	Salivation, Vomiting, Lacrimation, Rhinorrhea, Urination, Defecation & Bronchorrhea. Muscle Weakness, Respiratory Failure & Seizures
Salicylate	Aspirin & Oil of Wintergreen	Altered – Usually Depressed	Variable	Diaphoresis	Increased	Increased Respiratory Rate, Low Grade Fever, Tinnitus, Nausea & Vomiting
Tricyclic	amitriptyline, doxepin, imipramine, desipramine & nortriptyline	Altered – Usually Depressed	Variable	Warm & Dry	Increased	Anticholinergic Findings, Increased QRS Duration
Sertonin Syndrome	SSRI's (Prozac, Paxil), Meperidine & Dextromethorphan	Altered – Can Be Agitated	Variable	Warm	Increased	Increased Muscle Tone, Hyperreflexia & Hyperthermia
Hypoglycemia	Insulin & Sulfonylureas	Altered – Usually Depressed	Variable	Cool & Diaphoretic	Normal to Increased	Paralysis, Seizures & Bizzare Behavior



1. All patients with a known or suspected drug overdose/poisoning should have a careful evaluation performed on the scene. Patient & bystander information should be carefully documented. All pill bottles and medications should be brought to the receiving facility. The Georgia Poison Center can be contacted directly while en route to the hospital to aid in the evaluation and management of the potentially poisoned patient. Transport should be initiated immediately in case of altered mental status or shock.

Georgia Poison Center 1.800.222.1222, 404-616-9000, 1-800-282-5846

Fulton County Emergency Medical Services

Clinical Care Guideline – M25

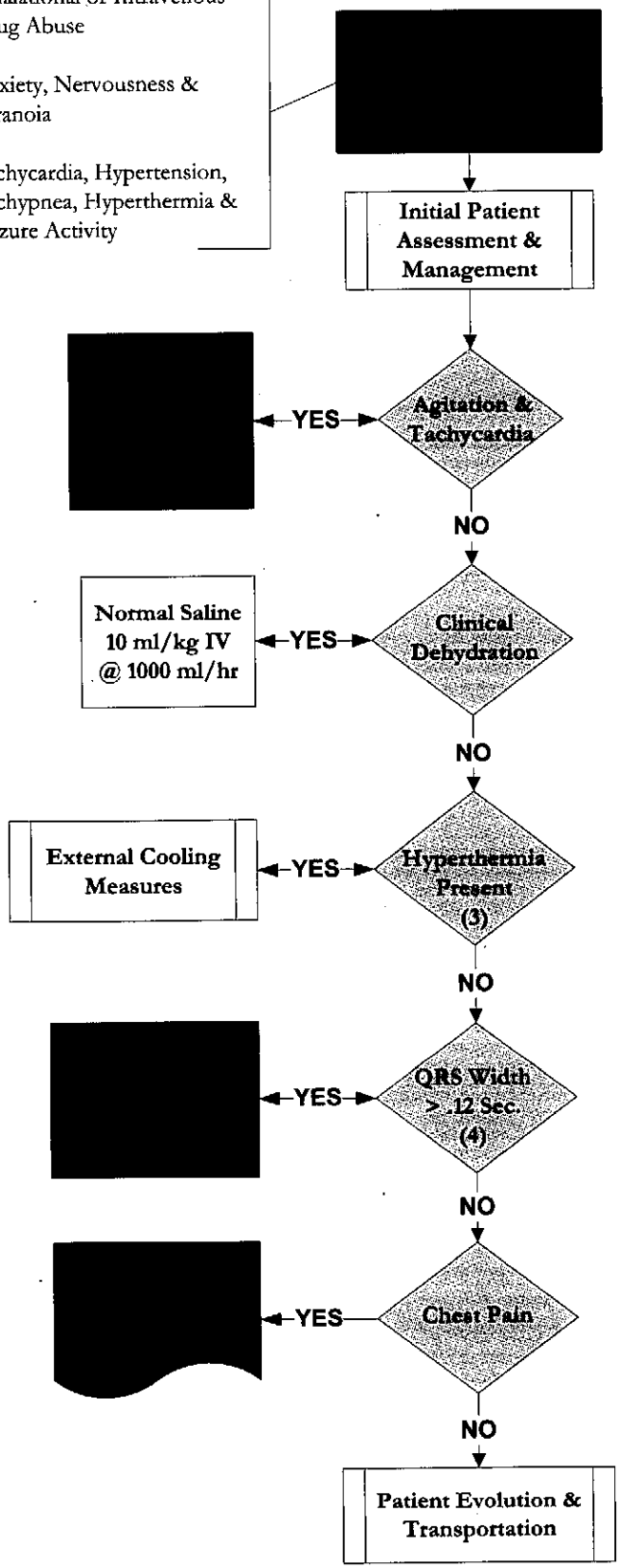
Sympathomimetic Toxidrome

12/12/2014

History: Inhalational or Intravenous Drug Abuse

Symptoms: Anxiety, Nervousness & Paranoia

Findings: Tachycardia, Hypertension, Tachypnea, Hyperthermia & Seizure Activity



1. Sympathomimetic agents include: cocaine, crack, amphetamine, MDMA and Ephedrine.
2. Diazepam/Versed can cause hypoventilation and potentially respiratory arrest. Have equipment and help readily available to support the airway when administering these medications.

   If hypotension develops with Diazepam/ Versed administer a 10 ml/Kg bolus of normal saline.
3. Sympathomimetic intoxicated patients with evidence of hyperthermia should be moved to a cool environment and external cooling measures should be implemented during transport.
4. Significant cocaine intoxication can cause widening of the QRS complex and tachydysrhythmias due to quinidine like effects. Contact medical control to review case and obtain orders for sodium bicarbonate if this is suspected.

Fulton County Emergency Medical Services

Clinical Care Guideline – M26

Opioid Toxidrome

12/12/2014

1. Opioid agents include Heroin, Morphine, Methadone, Fentanyl, Vicodin & Percocet.

   Narcotic overdose is unlikely in the absence of pinpoint, non-reactive pupils. The exceptions are propoxyphene (Darvocet), meperidine (Demerol) and patients with severe anoxia secondary to prolonged hypoventilation.

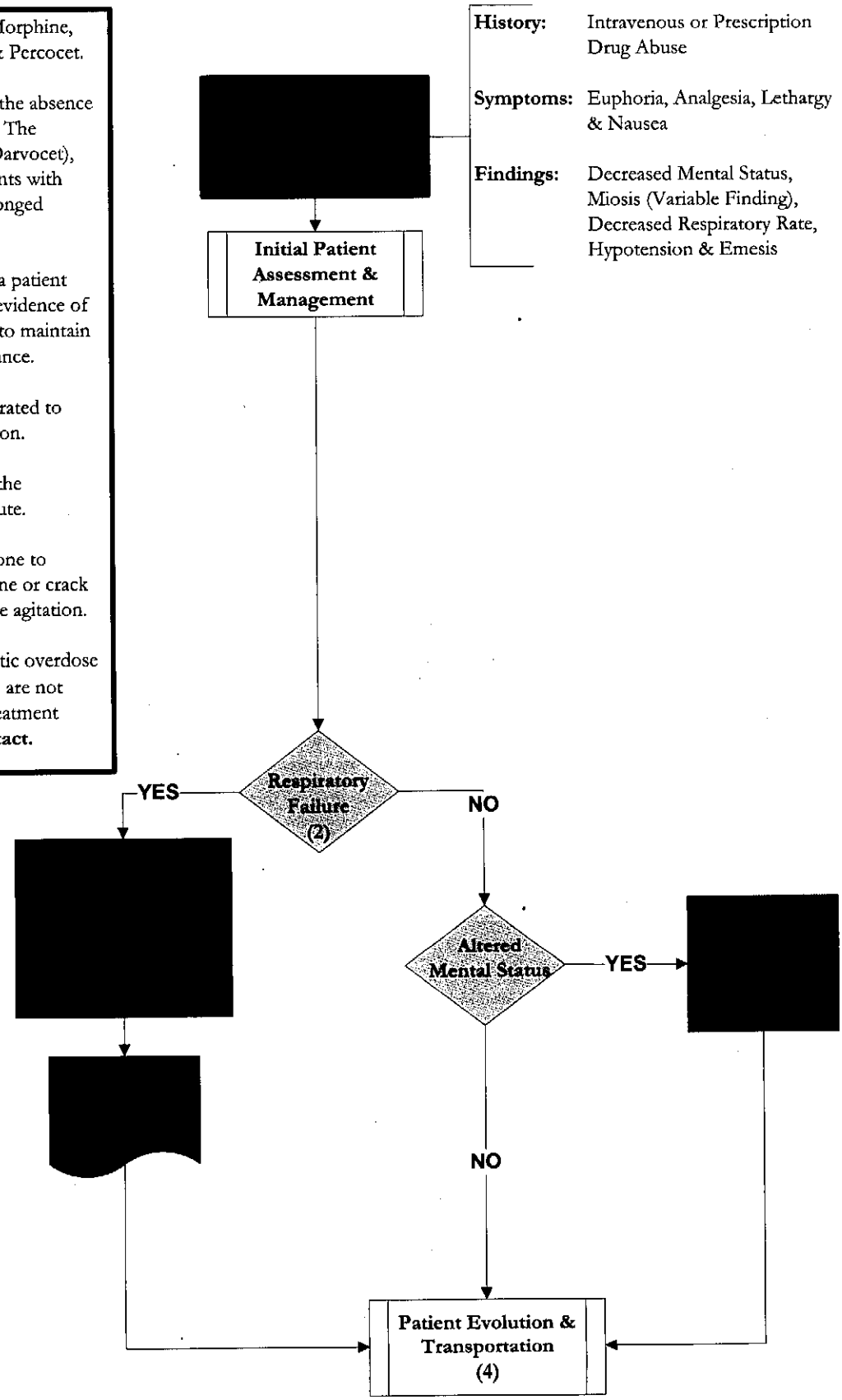
2. Respiratory failure is defined as a patient with a respiratory rate below 8, evidence of hypoxia or evidence of inability to maintain an airway without rescuer assistance.

3. Naloxone should be carefully titrated to avoid a violent emergence reaction.

   Naloxone can also be given via the subcutaneous and intra-nasal route.

   Use caution when giving Naloxone to patients with concomitant cocaine or crack use. Administration may increase agitation.

4. Patients with a confirmed narcotic overdose (positive response to Naloxone) are not permitted to sign a refusal of treatment without **Medical Control Contact.**



Fulton County Emergency Medical Services

Clinical Care Guideline – M27

Cholinergic Toxidrome

12/12/2014

History: Intentional, Accidental or Criminal Exposure to Organophosphate or Carbamate Compounds

Symptoms: Anxiety, Blurred Vision, Headache & Confusion

Findings: DUMBELS

[redacted]

Patient Decontamination (1)

Initial Patient Assessment & Management

[redacted]

Respiratory Failure

Assess Severity

D	Defecation
U	Urination
M	Miosis
B	Bradycardia
	Brochorrhea
	Bronchospasm
E	Emesis
L	Lacrimation
S	Salivation

1. Patients with evidence of a Cholinergic Toxidrome should be carefully evaluated for the presence of skin or clothing contamination.
2. Atropine may be administered IV or IM (via the Duo Dote Kit). Atropine can be administered every 3 to 5 minutes. Treatment should continue until respiratory symptoms and secretions resolve.
3. Valium can be adminitered via Auto-injector or via standard IM injection.

Mild
- Rhinorrhea
- Tearing
- Chest Tightness

Moderate
- Mild +
- Dyspnea
- Wheezing
- Nausea & Vomiting

Severe
- Moderate +
- Severe Dyspnea
- Seizure
- Cardiovascular Collapse

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Patient Evolution & Transportation

Fulton County Emergency Medical Services

Clinical Care Guideline – M28

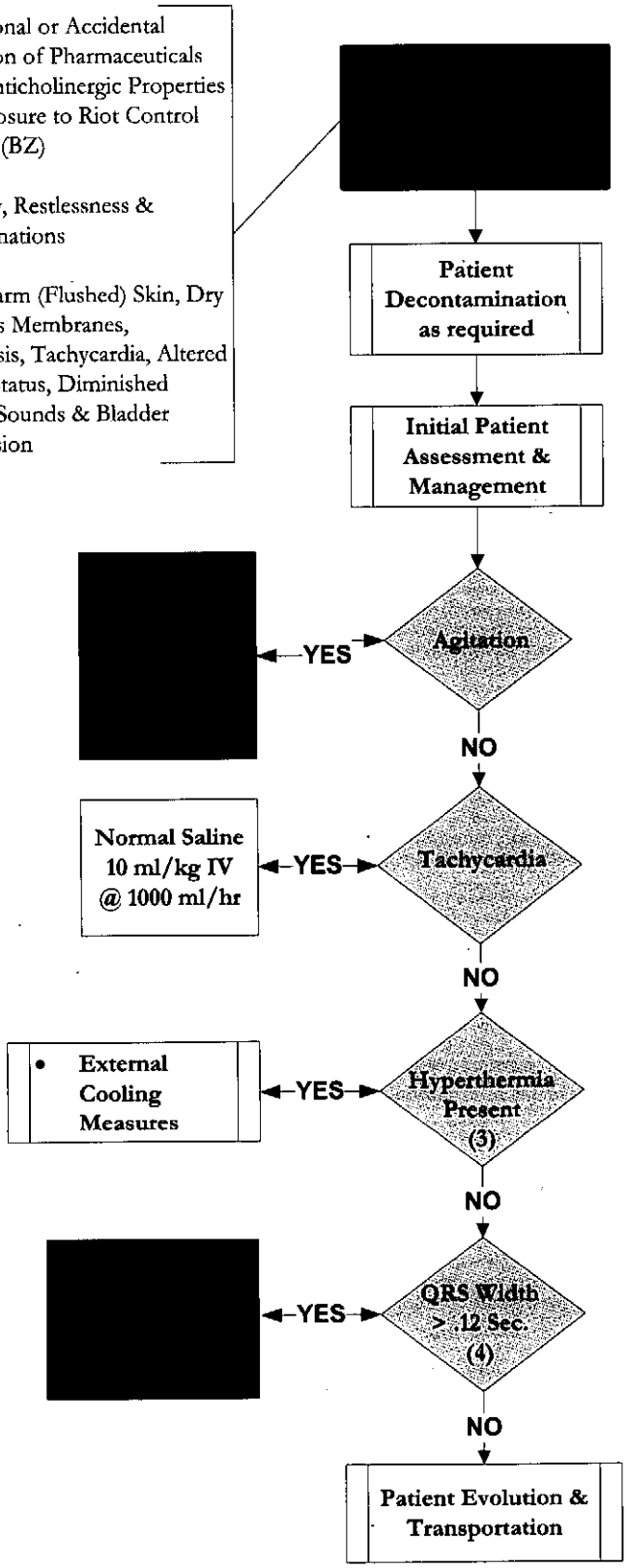
Anticholinergic Toxidrome

12/12/2014

History: Intentional or Accidental Ingestion of Pharmaceuticals with Anticholinergic Properties or Exposure to Riot Control Agents (BZ)

Symptoms: Anxiety, Restlessness & Hallucinations

Findings: Dry Warm (Flushed) Skin, Dry Mucous Membranes, Mydriasis, Tachycardia, Altered Metal Status, Diminished Bowel Sounds & Bladder Distension



1. The Anticholineric Toxidrome can be associated with a broad range of pharmaceuticals. General classes (with a single example) that cause significant Anticholinergic toxicity are as follow:
   Antihistamines
   Benadryl
   Cyclic Antidepressants
   Elavil
   Antipsychotics
   Thorazine
   Skeletal muscle relaxants
   Flexeril
   Antiparkinson drugs
   Cogentin
   Belladonna alkaloids
   Atropine
   Antispasmodics
   Bentyl
   Plants
   Jimson weed

2. Diazepam can cause hypoventilation and potentially respiratory arrest. Have equipment and help readily available to support the airway when administering these medications.

   Diazepam or Versed may be repeated x 1 if agitation does not resolve within 5 minutes of initial dose.

   If hypotension develops with Diazepam administer a 10 ml/Kg bolus of normal saline.

3. Anticholinergic intoxicated patients with evidence of hyperthermia should be moved to a cool environment and external cooling measures should be implemented during transport.

4. Significant anticholinergic intoxication can cause widening of the QRS complex and tachydysrhythmias due to quinidine like effects. Contact medical control to review case and obtain orders for sodium bicarbonate if this is suspected.

Fulton County Emergency Medical Services

Clinical Care Guideline – M29

Allergic Reaction/Anaphylaxis

12/12/2014

History: Insect sting/bite, ingestion of nuts, shellfish or eggs, exposure to contrast media, antibiotics (PCN, Sulfa drugs), contact with new foods or products.

Symptoms: Early findings include hoarse or whisper and diffuse itching

Dyspnea, anxiety, itching, throat or chest tightness, difficulty swallowing.

Signs: Urticaria, erythema, stridor, wheezing, hypotension, agitation, altered mental status, facial swelling.

[redacted]

Initial Patient Assessment & Management

Severe Reaction (1)

Severe Reaction
(Symptoms include Horse or difficult speech, Hypotension, Strider)

Epinephrine 1:1,000 0.3 mg IM (AEMT and Paramedic Only) EpiPen (EMT-I) (2)

Normal Saline 20 ml/kg IV Bolus

[redacted]

[redacted]

Improved

YES

NO

[redacted]

Mild/Moderate Reaction

Normal Saline 10 ml/kg IV Bolus

[redacted]

Patient Evolution & Transportation

1. Severe findings include: dyspnea, hypotension, and/or altered mental status. Patients with evidence of facial swelling should be evaluated for the presence of intra-oral swelling. If swelling of the tongue is present then the patient should be treated for a ***Severe Reaction.*** Swelling of the lips and mid-face without evidence of respiratory distress or intra-oral swelling may be treated as a ***Mild/Moderate Reaction.***
2. Epinephrine should be used with caution in patients over 40 years of age or individuals with a history of coronary heart disease or hypertension.

	EPINEPHRINE DRIP
D5W	250 mL or 500 mL
Medication	1 mg or 2mg Epinephrine
Concentration	**4 mcg/mL**

Fulton County Emergency Medical Services

Clinical Care Guidelines – M30

Environmental Hypothermia

12/12/2014

[redacted]

High Risk Patients:
Homeless persons, chronically ill patients, alcohol/drug abusers, elderly/pediatric patients, injuries causing immobility and exposure to cool conditions

- **Remove patient from environment**
- **Remove wet clothing**
- **Protect from additional heat loss and wind chill**
- **Avoid rough movement and excess activity**

Mild - Rectal temp = 34 - 36°C
Findings: shivering, normal mental status or mild confusion, ataxia

Moderate - Rectal temp = 30 - 34°C
Severe - Rectal temp < 30°C
Findings: Shivering stops, altered mental status (stuporous/comatose), dysrhythmias, decreased pulse-RR-BP, dilated pupils, arrest

- **Initial Patient Assessment & Management (1)**
- **Check Glucose (2)**
- **Place on Cardiac Monitor**

Pulse/Breathing Absent

VF/VT — **YES** → **Defibrillation x 1**

NO → Initiate CPR → Airway Management

- **Warm Humidified Oxygen**
- **Active Rewarming (3)**

Normal Saline (warm) 200 ml/hr IV

[redacted]

Core Temp Less Than 30°C
- Continue CPR
- Consider withholding IV medications
- Limit to 1 shocks for VF/VT

Core Temp Greater Than 30°C
- Continue CPR
- Give IV medications at longer than standard intervals
- Repeat defibrillation for VF/VT as temperature rises

Pulse/Breathing Present

ROSC — **NO** → Initiate CPR

YES → Airway Management

- **Warm Humidified Oxygen**
- **Passive Rewarming (3)**

Normal Saline (warm) 200 ml/hr IV

- **Minimize all Unnecessary Movements**
- **Patient Evolution and <u>Gentle</u> Transportation**

1. Consider trauma and spinal injuries, immobilize all patients with a suspected spinal injury prior to movement.

   In the profoundly hypothermic organized cardiac activity may be present in the absence of pulses - **Listen Carefully to Heart Tones**

2. Abnormal glucose findings should be managed according to the Hypo/Hyperglycemia Protocols.

3. **Passive rewarming** - warm dry blankets, warm environment.

   Active rewarming - in addition to passive rewarming measures the patient should be warmed with hot packs applied to the truck, armpits, neck and groin.

   Hot packs can be wrapped with oxygen tubing

Conversions

- F = (1.8 x C) + 32
- C = (F-32) / 1.8

Fulton County Emergency Medical Services

Clinical Care Guidelines – M31

Hyperthermia

12/12/2014

1. Patients with significant environmental exposure should be cooled with wet towels in the axilla, groin and around neck. Remove to a cool environment with fan if possible.

Heat Cramps:
Painful spasms of heavily used muscle groups. Typically occurs with heavy exertion in a warm environment

Heat Exhaustion:
Symptoms: weakness, thirst, dizziness, nausea
Signs: cool clammy skin, tachycardia, occasionally hypotension, agitation, mild confusion

Heat Stroke:
Signs: alteration in mental status, hyperthermia, tachycardia, common hypotension, commonly skin is warm and dry, but does not occur in all cases.

[redacted]

Initial Patient Assessment & Management

Risk Factors:
- **Extremes of age**
- **Debilitation**
- **Lack of acclimation**
- **Underlying Illness:**
  - Seizure
  - Thyrotoxicosis
  - Psychosis
  - Obesity
- **Drugs:**
  - Sympathomimetics
  - Anticholinergics
  - Barbiturates
  - Diuretics
  - Alcohol
  - Beta Blockers

Temperature is greater than 40.5 C or 105 F

YES → Heat Stroke

- Remove from environment
- Cool with water soaked towels, sheet and apply fan (1)
- Supplemental oxygen
- Ventilatory assistance as needed

Normal Saline 20 ml/kg IV Bolus Chilled if available

NO

Heat Cramps

- **Remove from environment**

Water / Hydration Solution PO

Heat Exhaustion

- Remove from environment
- Cool with water soaked towels and fan **(1)**
- Supplemental oxygen
- Repeat Primary Survey

Improving

YES → **Water / Hydration Solution PO**

NO → **Normal Saline 20 ml/kg IV Bolus**

Patient Evolution & Transportation

Fulton County Emergency Medical Services

Clinical Care Guidelines – M32

Return of Spontaneous Circulation (ROSC)

12/12/2014

Inclusion Criteria:

- Patient with V.Fib and Non-V.Fib Arrest
- Received Chest Compressions and/or Defibrillation
- Patient has ROSC
- Age > 18 years old
- Patient not following commands (or a GCS of <8)

Exclusion Criteria:

- Traumatic Arrest
- Actual or Suspected Active Bleeding (GI Bleeding, AAA, etc…)
- Pregnancy (obvious or known)
- Cardiac Instability (refractory or recurrent dysrhythmia)
- Hypotension (MAP <70mmHg) ***despite*** the use of a vasopressor.
- Frank Pulmonary Edema
- Pre-existing Environmental Hypothermia

[redacted]

See Inclusion and Exclusion Criteria

ROSC

NO

[redacted]

YES

Temperature obtainable

YES

T<34°C

NO

[redacted]

NO

SBP > 90mm Hg

YES

SBP > 90mm Hg

YES

[redacted]

NO

Ice Packs (2)

Expose Patient (preserving modesty)

[redacted]

NO

SBP > 90mm Hg

YES

YES

NO

SBP > 90mm Hg

YES

Shivering

YES

[redacted]

NO

NO

Patient Evolution & Transportation to a STEMI facility

Notify Receiving Hospital that Therapeutic Hypothermia has been initiated

1. Start Dopamine Drip at 5 mcg/kg/min, titrate by 2.5 mcg/kg/min increments to keep SBP>90 mmHg.

2. If available, place ice packs (6) to the following areas:
   - Bilateral Groin
   - Bilateral Axilla
   - Bilateral lateral aspects of the neck

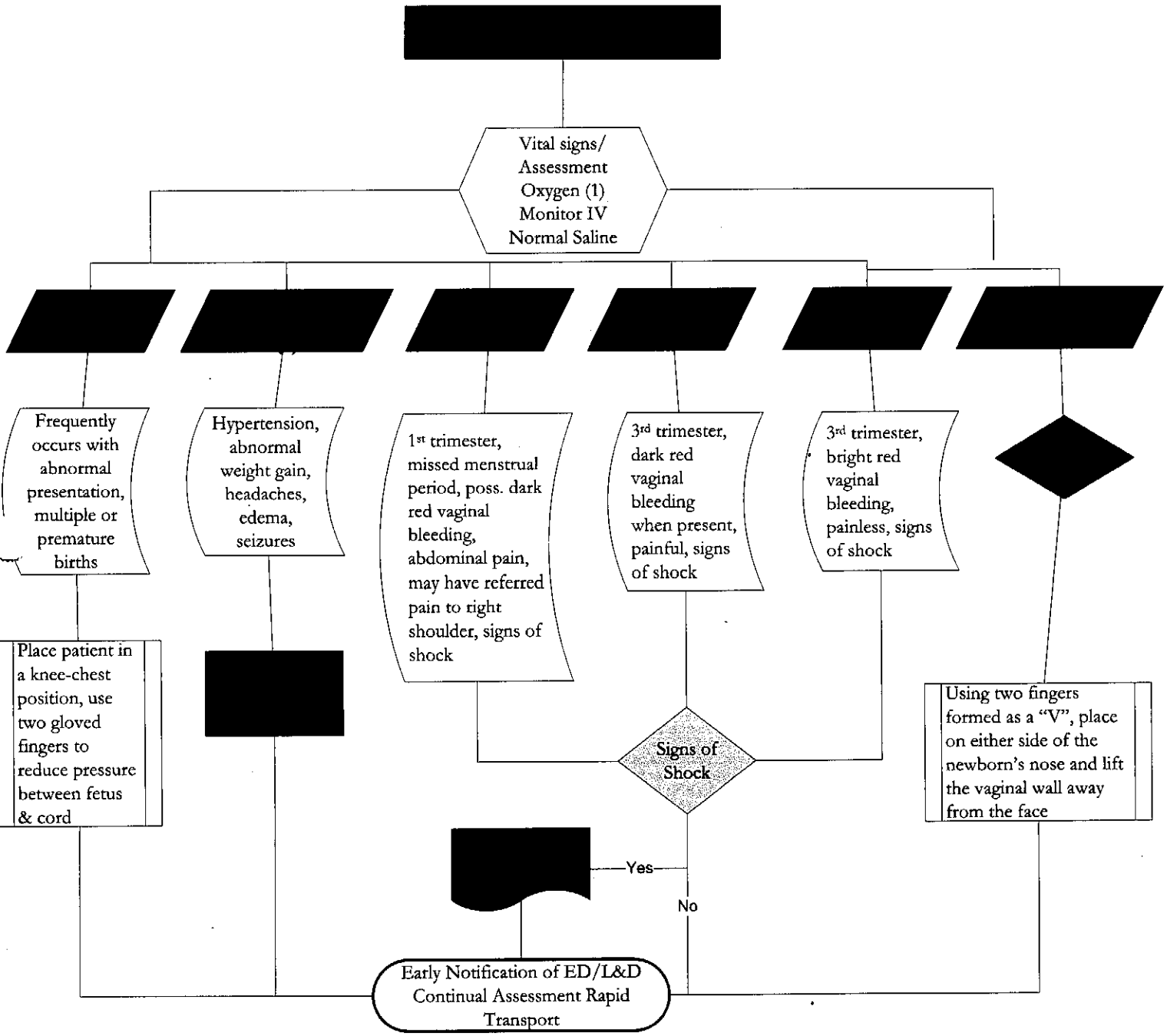
3. Diazepam will cause hypoventilation, closely monitor ventilatory/respiratory rate when administering this medication.

Fulton County Emergency Medical Services

Clinical Care Guidelines

Obstetric Emergencies – O1

12/5/2014



(1) Partial Rebreather @ 12-15 1pm

Preeclampsia typically presents in the 3rd trimester and may even present up to 4 weeks post-partum

(3) Magnesium Sulfate for control of Blood Pressure (SBP > 180/DBP > 120)

Administer 2 gm in 100 ml Normal Saline over 10 minutes Magnesium Sulfate for control of seizures administer 1 gm every minute to a max of 4 gms.

Fulton County Emergency Medical Services

Pediatric Patient Care Protocols

Section 5

12/12/2014

- ❑ P1 - Pediatric Primary Survey
- ❑ P2 - Pediatric Airway Obstruction
- ❑ P3 - Pediatric Cardiac Arrest
- ❑ P4 - Pediatric Bradycardia
- ❑ P5 - Pediatric Shock / Hypotension
- ❑ P6 - Pediatric Tachycardia
- ❑ P7 - Pediatric Altered Level of Consciousness
- ❑ P8 - Pediatric Altered Blood Glucose
- ❑ P9 - Pediatric Allergic Reaction
- ❑ P10 - Pediatric Fever
- ❑ P11 - Pediatric Hyperthermia / Heat Emergencies
- ❑ P12 - Pediatric Hypothermia
- ❑ P13 - Pediatric Poisoning
- ❑ P14 - Pediatric Respiratory Distress
- ❑ P15 - Pediatric Seizure
- ❑ P16 - Pediatric Submersion Event
- ❑ P17 - Pediatric Thermal Injuries
- ❑ P18 - Suspected Child Abuse
- ❑ P19 - Pediatric Major Trauma
- ❑ P20 - Pediatric Trauma Triage Decision Plan
- ❑ P21 - Pediatric Orthopedic Trauma
- ❑ P22 - Newborn Resuscitation
- ❑ P23 - Pediatric Pain Management

Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Primary Survey - P1

12/12/2014

[redacted]

Assess General Appearance Scene Survey

C-Spine Immobilization if Indicated see 5.1{3}

Assess LOC / General Appearance:

- Position
- Interaction
- Anxiety
- Distress
- Playful
- Eye Contact
- Distractibility
- Color
- Consolability

LOC (AVPU)

[redacted]

[redacted]

Approach Slowly at Patient's Level

Signs of Airway Obstruction & Respiratory Distress:

- Grunting
- Drooling
- Nasal Flaring
- Tachypnea
- Intercostal Retractions
- Apnea / Bradypnea
- Accessory Muscle Use
- Stridor
- Bradycardia
- Choking
- Cyanosis

[redacted]

YES

[redacted]

NO

[redacted]

Adequate

Labored

Compromised or Absent

[redacted]

Assist Ventilation BVM 100% Oxygen Nasal/Oral Airway

[redacted]

Continued Next Page

Fulton County Emergency Medical Services

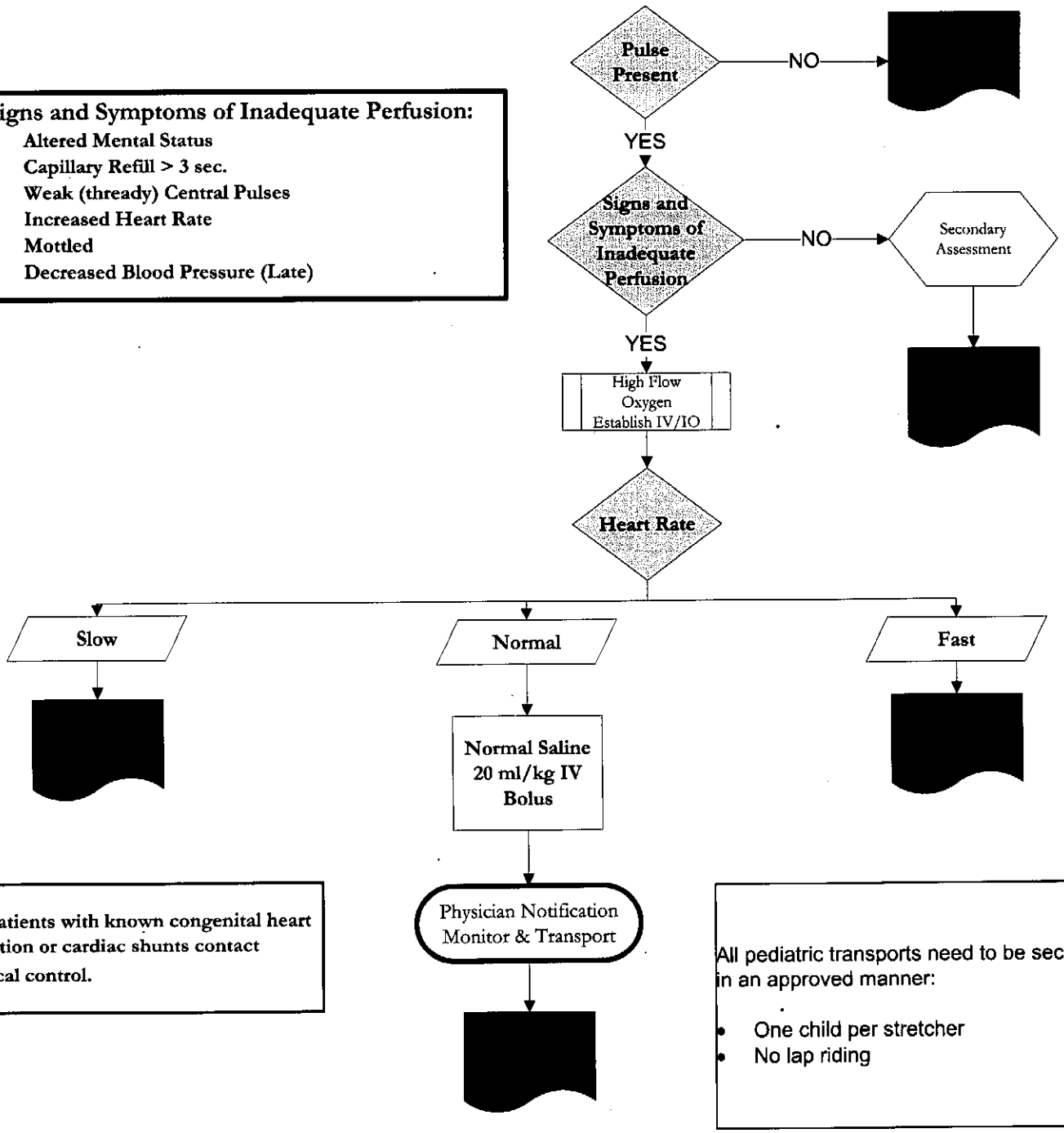
Patient Care Protocols

Pediatric Primary Survey - P1 (2)

12/12/2014

Signs and Symptoms of Inadequate Perfusion:

- Altered Mental Status
- Capillary Refill > 3 sec.
- Weak (thready) Central Pulses
- Increased Heart Rate
- Mottled
- Decreased Blood Pressure (Late)



For patients with known congenital heart condition or cardiac shunts contact medical control.

All pediatric transports need to be secured in an approved manner:

- One child per stretcher
- No lap riding

Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Primary Survey - P1 (3)

12/12/2014

C-spine Protocol

All patients sustaining actual or suspected injury to the cervical spine are fully and correctly immobilized prior to or upon arrival to the ED. These patients include:

A. Any trauma patient with an altered mental status

B. All patients with symptoms consistent with spinal cord injury, including:
- History of transient paresthesias, dysesthesias, shooting pains or subjective extremity paralysis
- Complaints of neck pain or discomfort or presence of muscle spasms, limited range of motion or tenderness over the spine
- Presence of sensory-motor deficits

C. Patients in whom the mechanism of injury is likely to have resulted in significant trauma to the spine, including:

- Child struck by a motor vehicle if at moderate or high speed
- Driver/passenger involved in MVC if ejected from the care seat, car seat became loose from restraints or patient is complaining of back and/or neck pain
- Driver/passenger involved in motorcycle and ATV collisions
- All falls greater than 10 feet or 2-3 times the pediatrics height if is complaining of back and/or neck pain
- Diving injuries if is complaining of back and/or neck pain
- All vehicle crashes (sled, bicycle, skateboard) where the patient was thrown (not fell) from the vehicle
- Other mechanisms raising a high index of suspicion

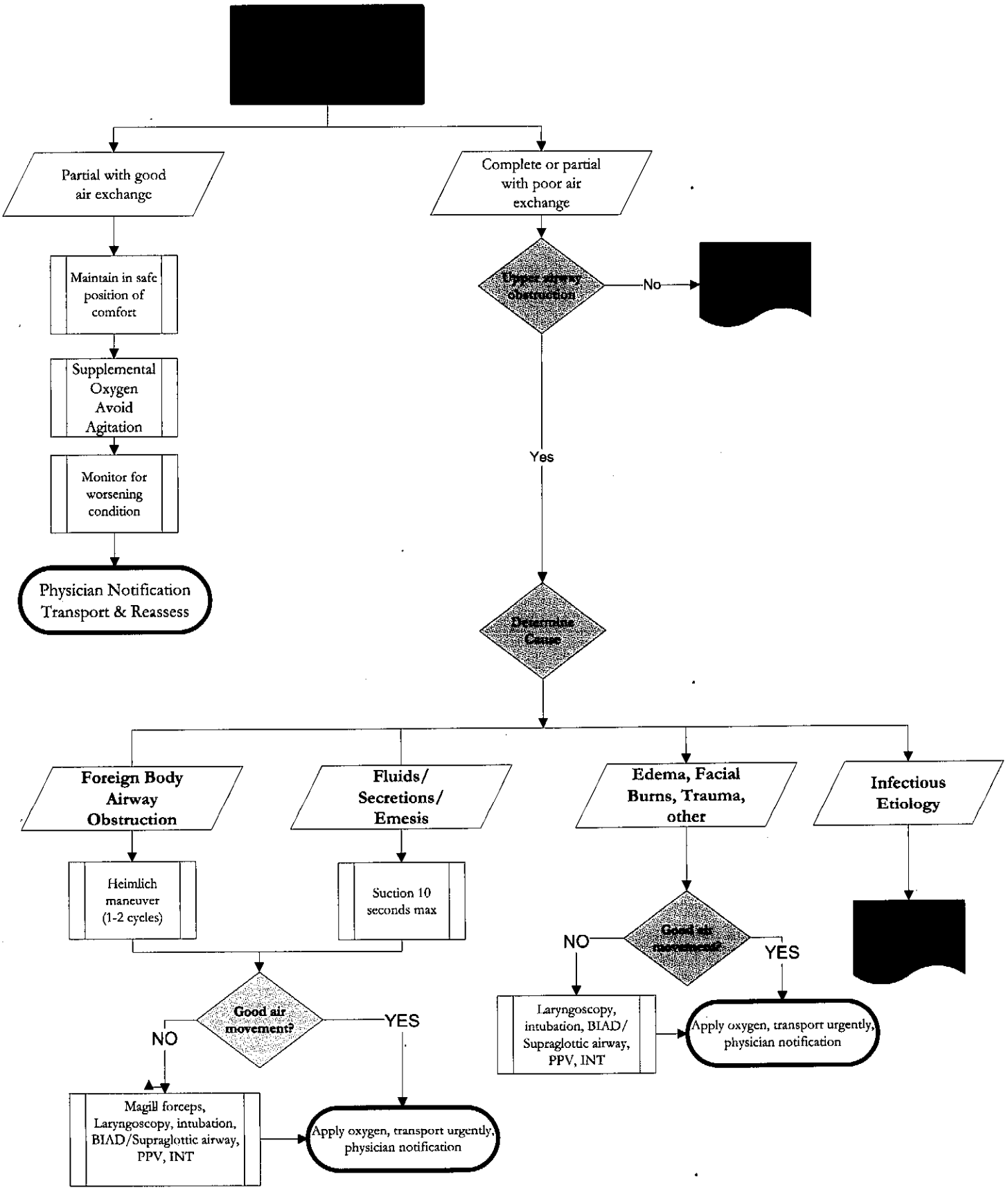
Generally children who are fully awake, have no signs of neurologic, have no complaint of neck or back pain and who are ambulatory at the scene do not require cervical immobilization.

Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Airway Obstruction - P2

12/12/2014

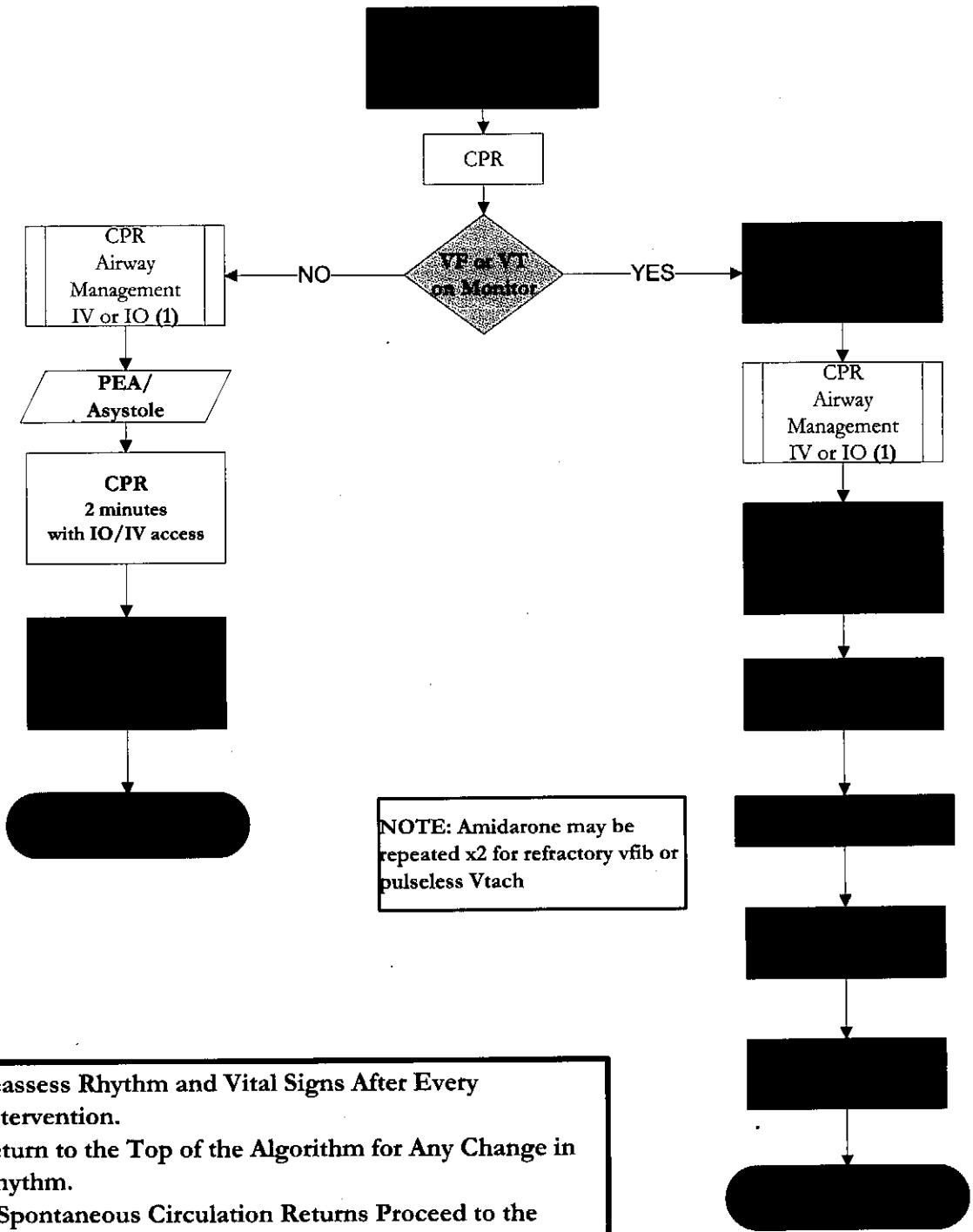


Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Cardiac Arrest - P3

12/12/2014



NOTE: Amidarone may be repeated x2 for refractory vfib or pulseless Vtach

- **Reassess Rhythm and Vital Signs After Every Intervention.**
- **Return to the Top of the Algorithm for Any Change in Rhythm.**
- **If Spontaneous Circulation Returns Proceed to the Appropriate Algorithm and Contact Medical Control Immediately.**
- **CPR and Ventilation with 100% Oxygen Throughout.**

(1) Limit IV attempt to 60 seconds, if unsuccessful proceed immediately to IO.

(2) Initial dose of epinephrine may be administered using the 1:10,000 concentration via IV/IO or utilizing the 1:1000 concentration ET.

(3) Subsequent doses of epinephrine may be administered ET using the 1:1000 concentration.

Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Bradycardia- P4

12/12/2014

[redacted]

Primary Survey
Pulse Oximetry
100% Oxygen
Ventilatory assistance
as needed

Age	Mean Heart Rate
Premie	125 +/- 50
Newborn	140 +/- 50
1 – 6 months	130 +/- 45
6 – 12 months	115 +/- 40
12 – 24 months	110 +/- 40
2 – 6 years	105 +/- 35
6 – 12 years	95 +/- 30
> 12 years	82 +/- 25

Perfusion appropriate i.e.: good color, good cap refill, mentating

NO

Establish IV or IO (1)

YES

Continue assessment
Support ABCs
Monitor for change

[redacted]

Heart rate > 60 and/or improving systemic perfusion

NO

[redacted]

[redacted]

YES

[redacted]

(1) IO route is to be only used after failed IV access in a patient exhibiting signs of inadequate perfusion.

(2) Administration of epinephrine via ETT is to be 1:1,000 concentration only.

(3) **Minimum dose of atropine = 0.1 mg**
Maximum dose of atropine for child = 0.5 mg
Maximum dose of atropine for adolescent = 1.0 mg

- **Reassess Rate, Perfusion and Vital Signs After Every Intervention.**
- **If cardiac arrest go to cardiac arrest protocol**
- **FOR NEWBORN: See appropriate protocol**

Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Shock / Hypotension - P5

12/12/2014

[redacted]

Primary Survey
Pulse Oximetry
100% Oxygen
Ventilatory assistance
as needed

Age	Heart Rate	Respiratory Rate	Systolic BP
Premie	125 +/- 50	30 – 60	35 – 56 systolic
Newborn	140 +/- 50	30 – 60	75 / 50
1 – 6 months	130 +/- 45	30 – 40	80 / 46
6 – 12 months	115 +/- 40	24 – 30	96 / 65
12 – 24 months	110 +/- 40	20 – 30	99 / 65
2 – 6 years	105 +/- 35	20 – 25	100 / 60
6 – 12 years	95 +/- 30	16 – 20	110 / 60
> 12 years	82 +/- 25	12 – 16	120 / 60

Signs and Symptoms of Inadequate Perfusion:

- **Altered Mental Status**
- **Capillary Refill > 3 sec.**
- **Weak (thready) Central Pulses**
- **Increased Heart Rate**
- **Mottled**
- **Decreased Blood Pressure (Late)**

Perfusion Status

Adequate

Secondary Assessment

Physician Consultation

Transport & Monitor

Inadequate

Establish IV or IO

Normal Saline 20 ml/kg IV Bolus

Volume Loss Trauma Infection

YES

[redacted]

NO

NO

Bradycardia

[redacted]

Tachycardia

[redacted]

Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Tachycardia - P6

12/12/2014

(1) IO route is to be only used after failed IV access in a patient exhibiting signs of inadequate perfusion.

(2) If patient condition permits, pretreat with midazolam. If unable to establish IV/IO or patient is severely compromised proceed directly to cardioversion.

(3) Adenosine should be administered via antecubital IV access.

Age	Mean Heart Rate
Premie	125 +/- 50
Newborn	140 +/- 50
1 – 6 months	130 +/- 45
6 – 12 months	115 +/- 40
12 – 24 months	110 +/- 40
2 – 6 years	105 +/- 35
6 – 12 years	95 +/- 30
> 12 years	82 +/- 25

[redacted]

Primary Survey
Pulse Oximetry
100% Oxygen
Ventilatory assistance
as needed

Heart Rate Rapid for Age

NO → [redacted]

YES

Establish IV or IO (1)

Wide Complex (QRS > .12sec)

>120 Infant >120 Child

NO → [redacted]

YES

Evidence of Inadequate Perfusion

Yes → [redacted]

NO → [redacted]

Narrow Complex

>230 Infant >200 Child

NO → **Consider:**
Volume Loss
Trauma
Infection

→ **Normal Saline 20 ml/kg IV Bolus**

YES

Evidence of Inadequate Perfusion

Yes → [redacted]

[redacted]

[redacted]

[redacted]

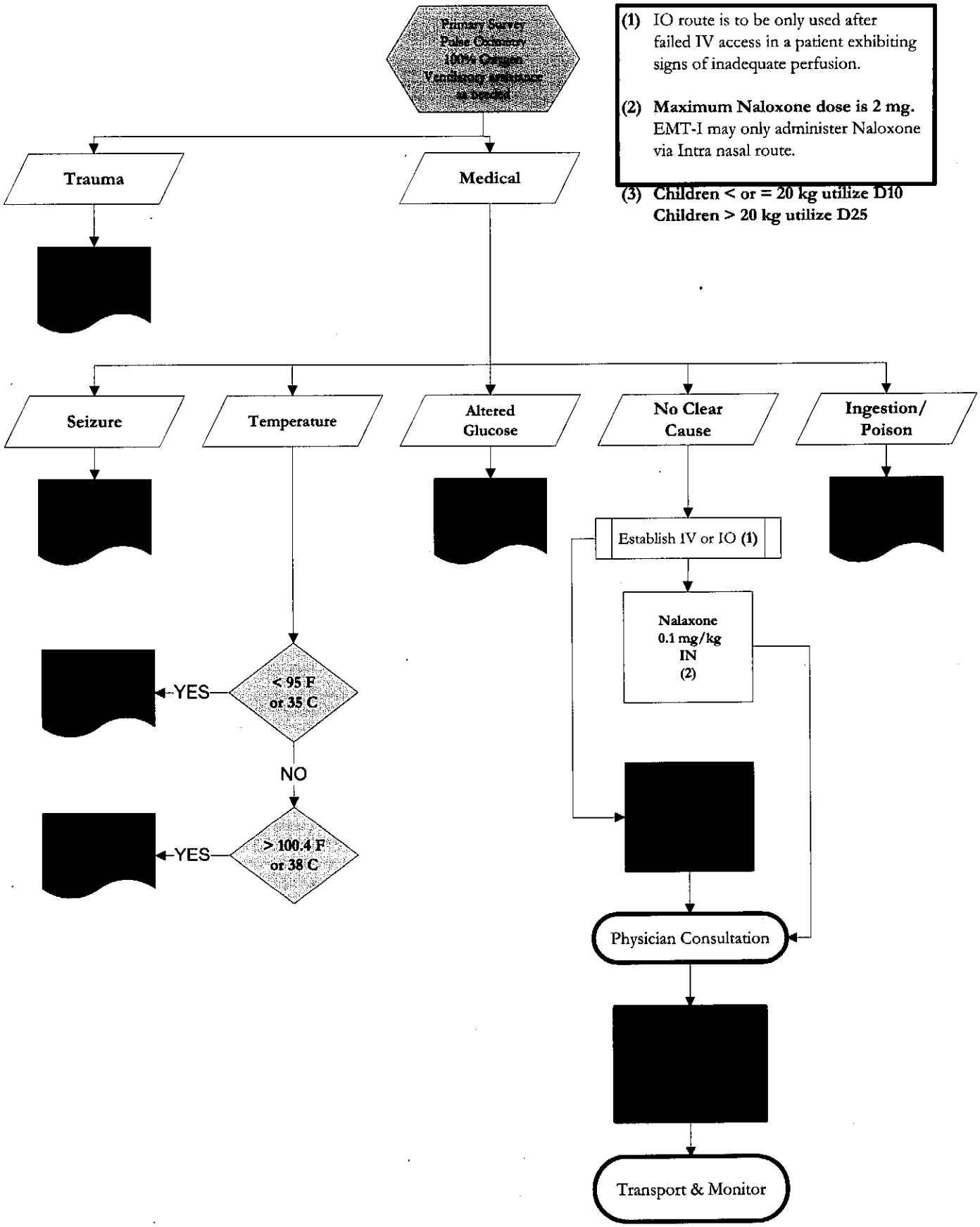
[redacted]

Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Altered Level of Consciousness- P7

12/12/2014



(1) IO route is to be only used after failed IV access in a patient exhibiting signs of inadequate perfusion.

(2) **Maximum Naloxone dose is 2 mg.** EMT-I may only administer Naloxone via Intra nasal route.

(3) **Children < or = 20 kg utilize D10**
Children > 20 kg utilize D25

Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Altered Blood Glucose - P8

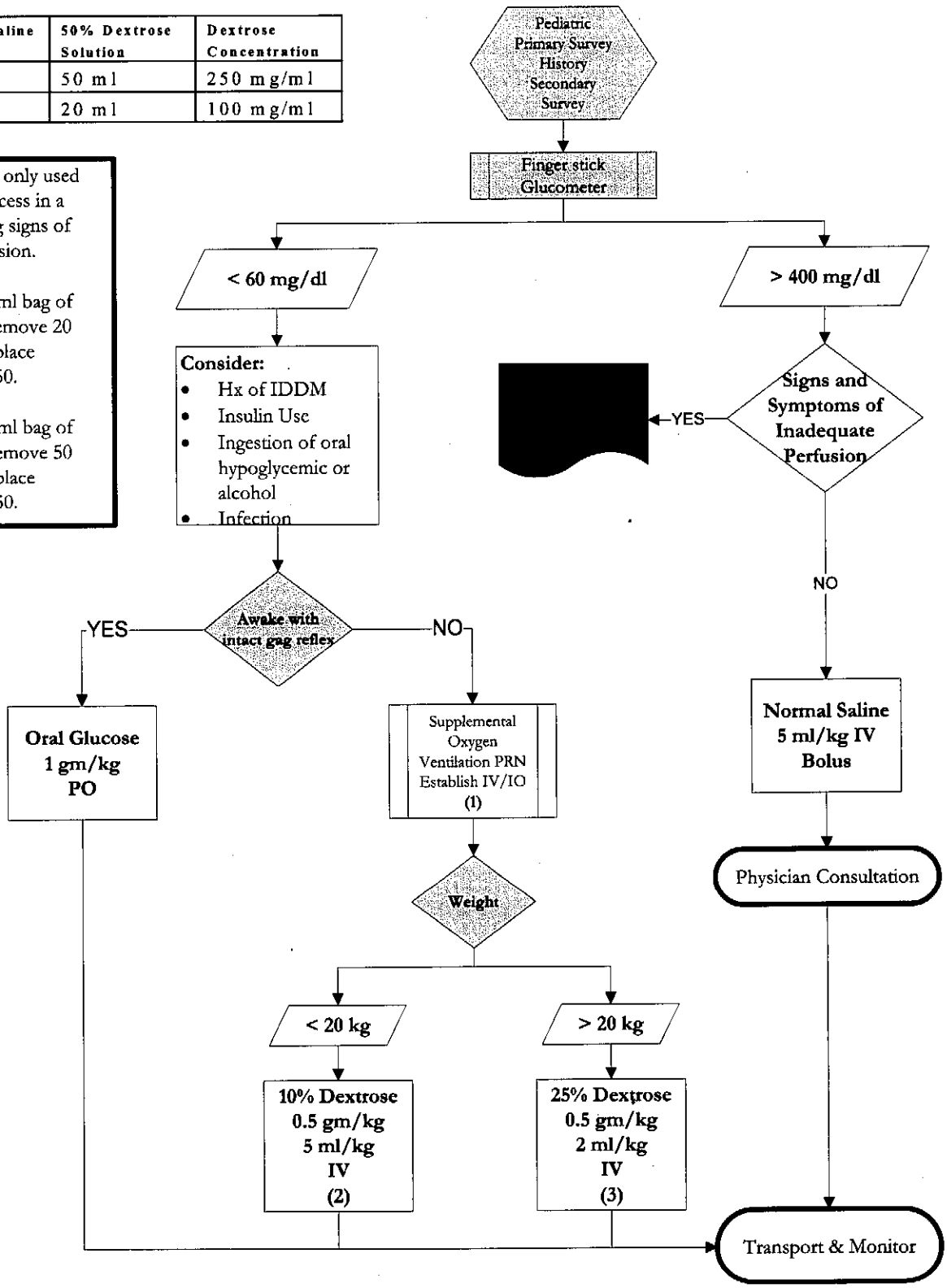
12/12/2014

Solution	Normal Saline	50% Dextrose Solution	Dextrose Concentration
D25	50 ml	50 ml	250 mg/ml
D10	80 ml	20 ml	100 mg/ml

(1) IO route is to be only used after failed IV access in a patient exhibiting signs of inadequate perfusion.

(2) Mix D10 in 100 ml bag of normal saline. Remove 20 ml of NS and replace with 20 ml of D50.

(3) Mix D25 in 100 ml bag of normal saline. Remove 50 ml of NS and replace with 50 ml of D50.

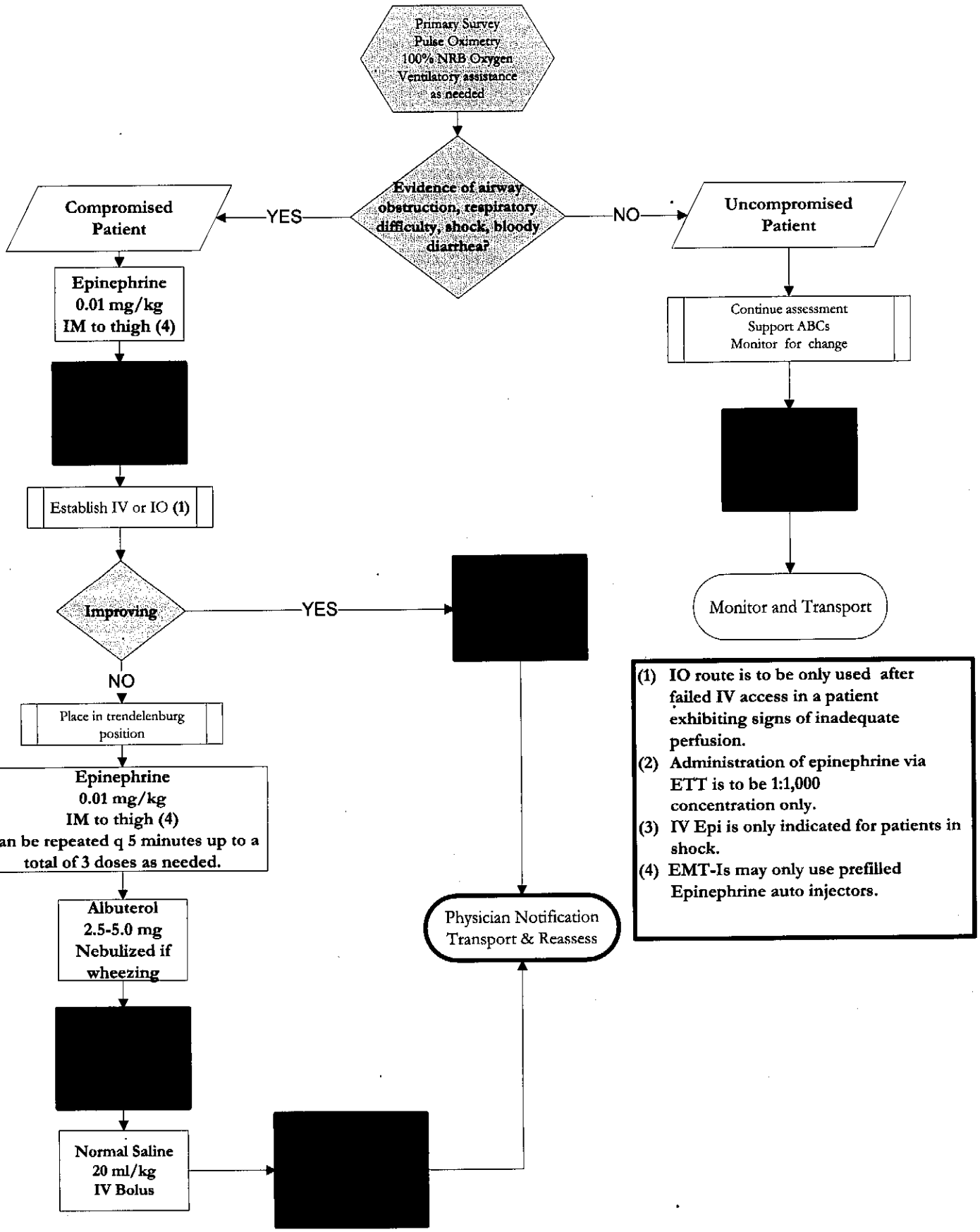


Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Allergic Reaction- P9

12/12/2014



(1) IO route is to be only used after failed IV access in a patient exhibiting signs of inadequate perfusion.

(2) Administration of epinephrine via ETT is to be 1:1,000 concentration only.

(3) IV Epi is only indicated for patients in shock.

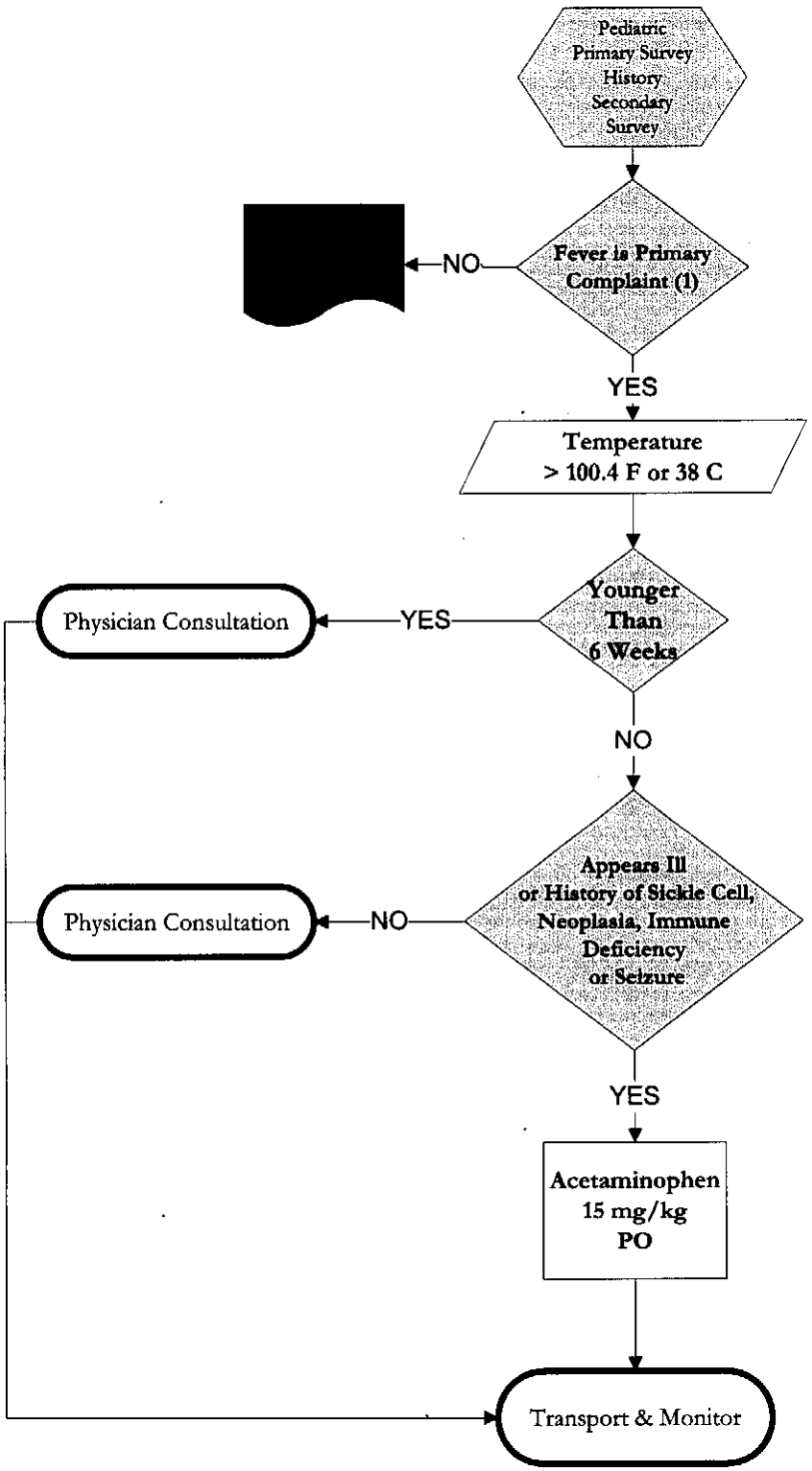
(4) EMT-Is may only use prefilled Epinephrine auto injectors.

Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Fever - P10

12/12/2014



(1) This protocol is to be utilized for pediatric patients that are not treated more appropriately by an alternative protocol after a thorough History and Physical is performed.

(2) Do not give Tylenol if given in the last 4 hours.

Fulton County Emergency Medical Services

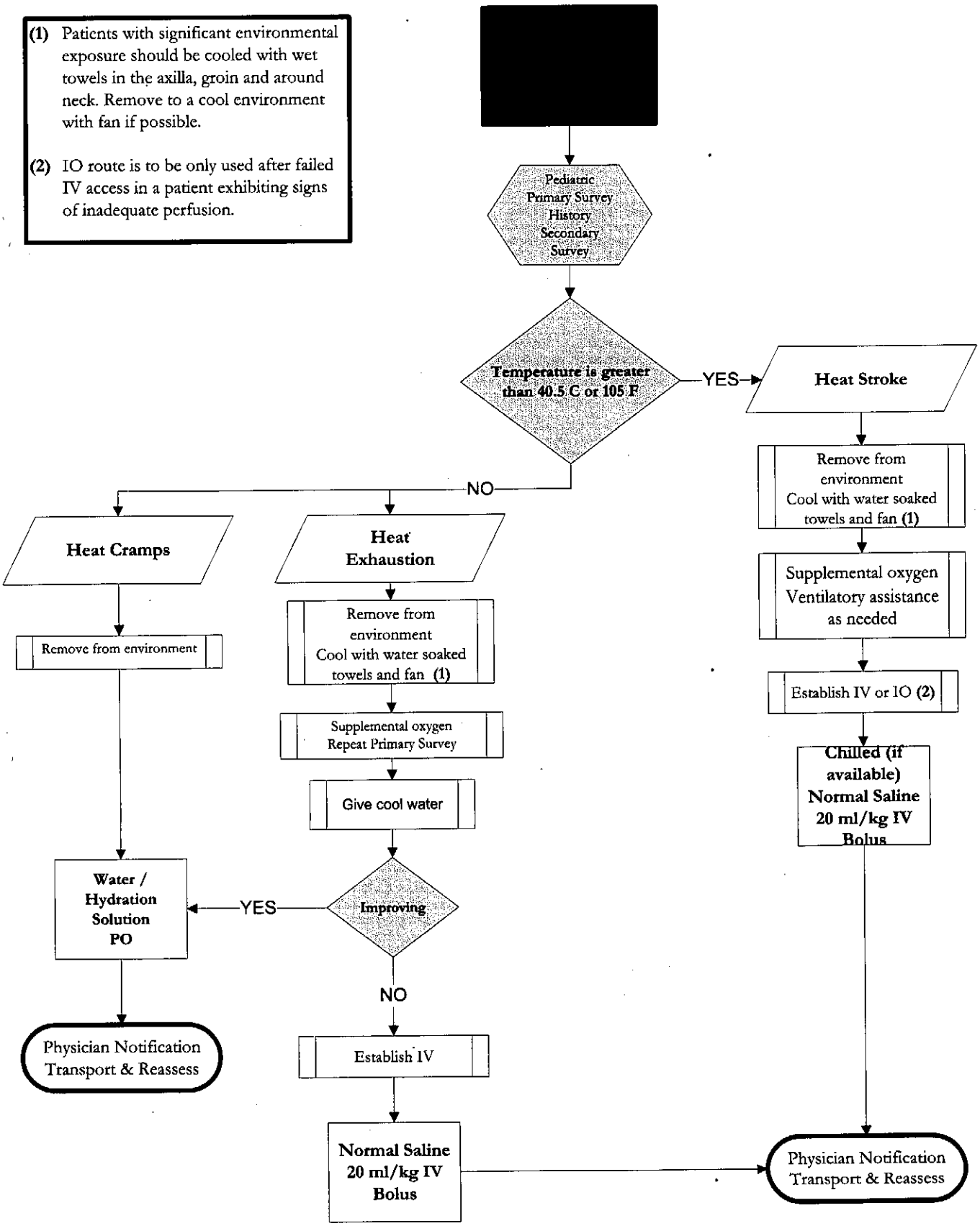
Patient Care Protocols

Hyperthermia/Heat Emergencies P11

12/12/2014

(1) Patients with significant environmental exposure should be cooled with wet towels in the axilla, groin and around neck. Remove to a cool environment with fan if possible.

(2) IO route is to be only used after failed IV access in a patient exhibiting signs of inadequate perfusion.



Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Environmental Hypothermia - P12

12/12/2014

(1) IO route is to be only used after failed IV access in a patient exhibiting signs of inadequate perfusion.

(2) Limit IV attempt to 60 seconds, if unsuccessful proceed immediately to IO.

CPR with Ventilation is to be performed throughout the resuscitation.

[redacted]

Primary Survey
Pulse Oximetry
100% Oxygen
Ventilatory assistance
as needed

Cardiac Arrest

YES → **Rhythm**

NO → Provide Warm Environment
Remove Wet Clothing
Preserve Body Heat (3)

(3) Provide warm environment and wrap in thermal blankets - avoid stimulation or rubbing the skin.

In the setting of cardiac arrest or profound hypothermia, avoid excessive movement and jostling.

(4) Signs and symptoms of severe hypothermia include:
Stupor, unconsciousness, loss of shivering reflex, diminishing respiratory effort, paradoxical undressing

Rhythm

Pulseless VT or VF

[redacted]

CPR
Airway
Management
IV or IO (2)

[redacted]

Provide Warm Environment
Remove Wet Clothing
Preserve Body Heat (3)

Finger stick
Glucometer

[redacted]

Signs and Symptoms of Hypothermia (4)

Asystole PEA

CPR
Airway
Management
IV or IO (2)

Warm Supplemental Oxygen
Ventilation as Needed

Establish IV or IO (1)

Warmed Normal Saline 10 ml/kg IV Bolus

Glucose below 60 mg/dl

YES → [redacted]

NO

[redacted]

Transport & Monitor

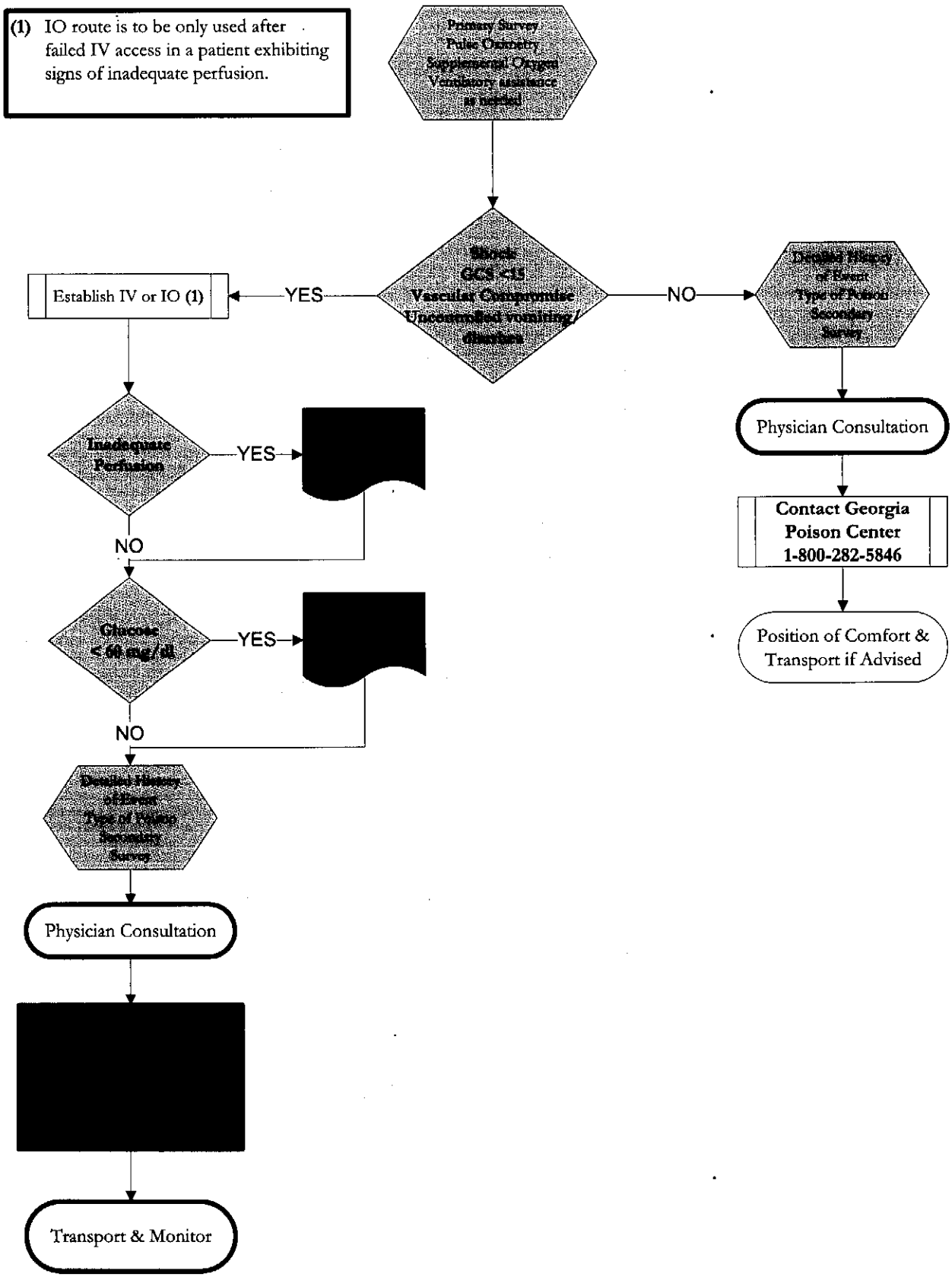
Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Poisoning P13

12/12/2014

(1) IO route is to be only used after failed IV access in a patient exhibiting signs of inadequate perfusion.



Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Respiratory Distress - P14

12/12/2014

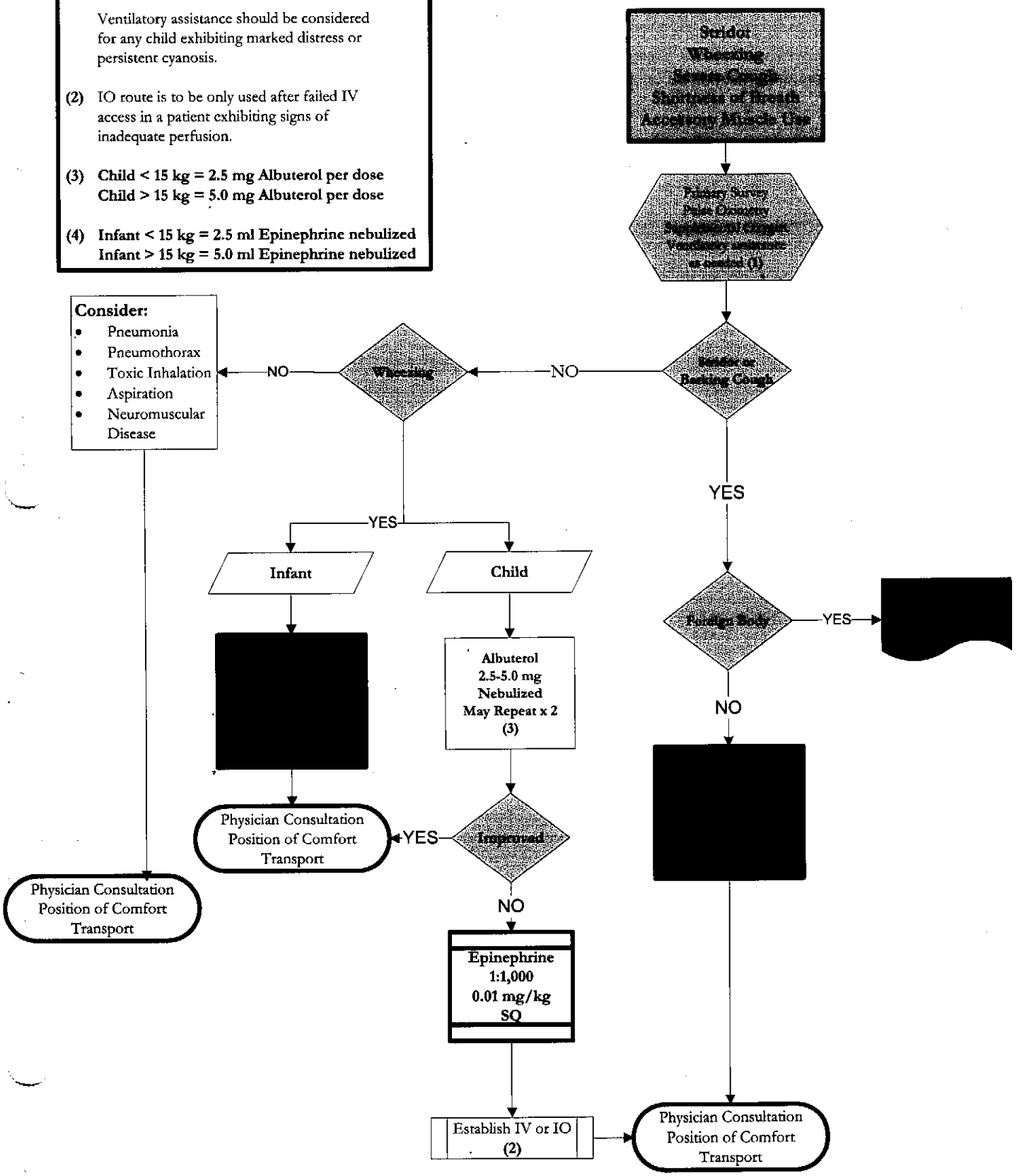
(1) Oxygen supplementation as needed to keep oxygen saturation above 93%.

Ventilatory assistance should be considered for any child exhibiting marked distress or persistent cyanosis.

(2) IO route is to be only used after failed IV access in a patient exhibiting signs of inadequate perfusion.

(3) **Child < 15 kg = 2.5 mg Albuterol per dose**
Child > 15 kg = 5.0 mg Albuterol per dose

(4) **Infant < 15 kg = 2.5 ml Epinephrine nebulized**
Infant > 15 kg = 5.0 ml Epinephrine nebulized

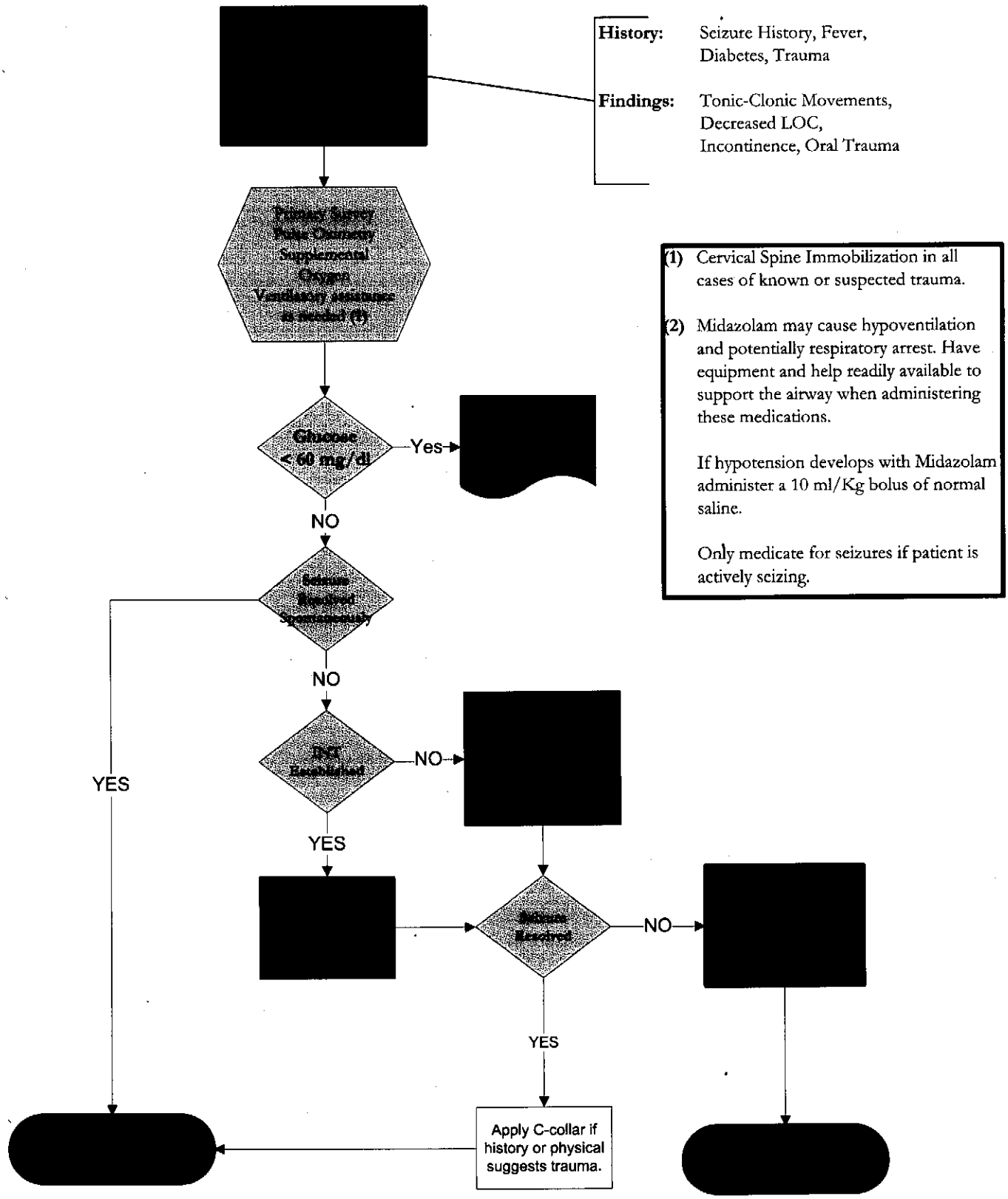


Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Seizure P15

12/12/2014



(1) Cervical Spine Immobilization in all cases of known or suspected trauma.

(2) Midazolam may cause hypoventilation and potentially respiratory arrest. Have equipment and help readily available to support the airway when administering these medications.

If hypotension develops with Midazolam administer a 10 ml/Kg bolus of normal saline.

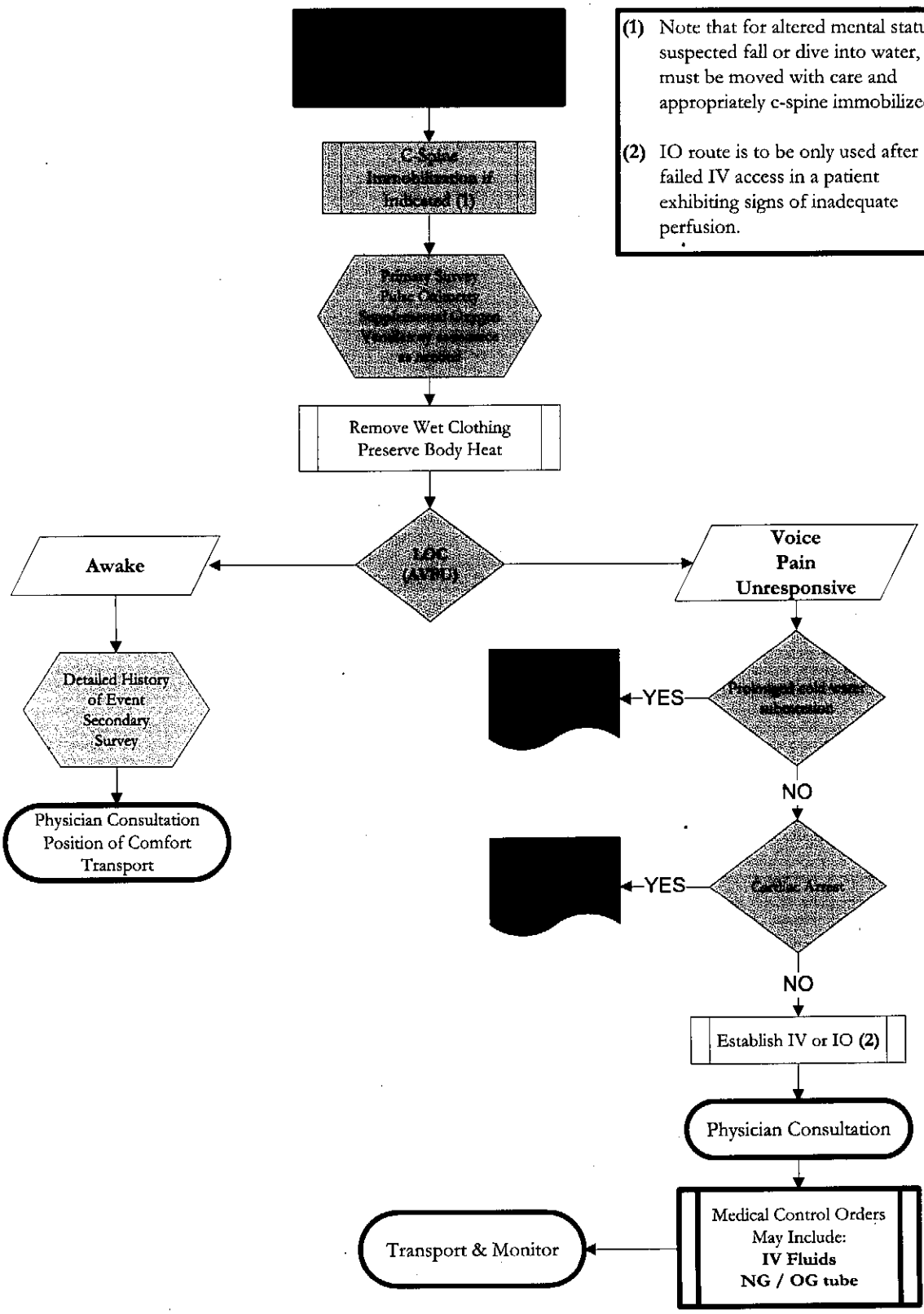
Only medicate for seizures if patient is actively seizing.

Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Submersion Event - P16

12/12/2014



(1) Note that for altered mental status, or suspected fall or dive into water, patient must be moved with care and appropriately c-spine immobilized.

(2) IO route is to be only used after failed IV access in a patient exhibiting signs of inadequate perfusion.

Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Thermal Injuries - P17

12/12/2014

Inhalation Injury Risk

History of the following:

Explosion with burns to face & torso
Confinement in burning environment

Clinical findings:

Stridor, AMS, tachypnea, facial burns, singing of eyebrows and nasal hairs, carbon deposits in nares and oropharynx, oropharyngeal inflammation

[redacted]

[redacted] YES → [redacted]

NO

Inhalation Injury Risk (1)

NO — YES

Vital signs
Supplemental Oxygen
Monitor

Vital signs
100% Oxygen
Monitor
IV x 2 (2)

Major Burn Criteria

NO — YES

Establish IV or IO (3)

General Burn Care

General Burn Care

Normal Saline 10 ml/kg IV Bolus

[redacted] YES ← Severe Pain

NO

Position of Comfort & Transport

Severe Pain YES → [redacted]

NO

Position of Comfort & Transport to GMH Burn Center

(1) Patients with at risk for inhalation injury may require early definitive airway management.

(2) All patients at any risk for inhalation injury should receive 100% oxygen via partial rebreather.

(3) IO route is to be only used after failed IV access in a patient exhibiting signs of inadequate perfusion.

The pulse oximeter will not accurately reflect oxygenation in the presence of carbon monoxide toxicity.

(3) Fentanyl is to be administered slow IVP to patients without history of allergy and vital signs in age appropriate range.

No patient with head, face, abdominal or thoracic injuries should receive fentanyl without physician evaluation.

Fulton County Emergency Medical Services

Patient Care Protocols

Suspected Child Abuse P18

12/12/2014

CAREFULLY DOCUMENT:
Statements of bystanders
Observations of behavior
Appearance of other children
Demeanor of caregiver

[redacted]

Pediatric Primary
Survey
History
Secondary Survey

Obtain detailed history of events

NO

[redacted]

YES

[redacted]

Attempt to maintain sample integrity

Attempt to maintain chain of custody

[redacted]

NO

Physician Notification
Transport & Reassess

YES

Contact supervisor for on scene assistance

Physician Consultation

Transport & Reassess

Simply notifying hospital personnel about concerns of maltreatment does not meet mandated EMS reporting responsibilities. If any maltreatment is suspected, the EMS provider MUST, by law, notify the local public children services agency or law enforcement as soon as possible.

- **Maintain high index of suspicion**
- **Remain objective and professional**
- **Document careful and factual observations**
- **Do NOT make any accusations**
- **Avoid conjecture in documentation**

The following are indicators of possible abuse:

- Injuries scattered on many areas of the body
- Malnutrition or lack of cleanliness
- Any fracture in an child under 2 years of age
- Injuries in various stages of healing
- More injuries than are usually seen in other children of the same age.

Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Major Trauma - P19

12/12/2014

(1) Life threat, respiratory distress or O2 Sat < 90% - Non-Rebreather @ 12-15 lpm
O2 Sat > 90% - Nasal Cannula @ 2-4 lpm

(2) Consider only if **all** the following are present: diminished or absent breath sounds; increased work of breathing or difficulty ventilating; shock or hypotension. Bilateral decompression is only to be used in the intubated patient.

(3) Check for other life threats; once finished cover patient to retain body heat

(4) Splint extremity fractures and pad board for patient comfort, apply dressing to abrasions and lacerations

History of the following:

- MVC with significant damage to vehicle or associated with rollover, entrapment or ejection
- Motorcycle accident
- Pedestrian Struck
- Penetrating trauma to head, trunk or proximal extremities
- Falls greater than 10 ft
- Blast injuries

[redacted]

[redacted]

[redacted]

YES

NO

[redacted]

Absent

Assist Ventilation
BVM 100% Oxygen
Nasal / Oral Airway

Adequate

Oxygen
(1)

Labored

Oxygen
Assist Ventilation PRN
(1)

[redacted]

[redacted]

[redacted]

YES

Hemorrhage Control

NO

Shock: Tachycardia, absent peripheral pulses, cool / diaphoretic skin, decreased capillary refill, pallor.

Disability: GCS, pupil size and reactivity, gross motor and sensory function.

Assess for Shock & Disability

Expose & Examine
(3)

Spinal Immobilization
(5)

(5) For penetrating trauma, immobilization is indicated if the patient is complaining of back pain, sensory or motor deficit, and when patient is unable to respond.

(6) Monitor fluid infusion carefully. Administer 20 ml/kg bolus for hypotension.

[redacted]

YES

Scene time less than 10 minutes

Large bore IV x 2 Enroute **(6)**

Physician Notification Transport & Reassess

NO

Secondary Survey AMPLE history

Package Patient **(4)**

Physician Notification Transport & Reassess

Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Trauma Triage Decision Plan - P20

12/12/2014

[redacted]

(1) Consult with the Pediatric Trauma Center (PTC) if desiring to transport a patient older than 14 to their facility.

(2) Contact Scottish Rite Medical Control before transporting any penetrating injury to their facility.

(3) Trauma patients with pregnancy >20 weeks gestation should transported to an OB capable trauma center.

Pediatric Trauma Centers
Egleston Children's Hospital (Level 1)
Scottish Rite Children's

Measure vital signs and level of consciousness:
- GCS less than < 14.
- Systolic BP less than < 90.
- Respiratory Rate less than < 10 or > 28 (< 20 in infant < one year)

[redacted] — YES

NO

Assess anatomy of injury:
- All penetrating injuries to head, neck, torso and extremities proximal to elbow or knee. **(2)**
- Chest wall instability or deformity (e.g. flail chest)
- Two or more proximal long-bone fractures
- Crushed, degloved, mangled, or pulseless extremity
- Amputation proximal to wrist and ankle
- Pelvic fracturse
- Open or depressed skull fracture
- Paralysis

Transport to a Trauma Center. These criteria attempt to identify the most seriously injured patients. They should be transported preferentially to the highest level of care in the defined trauma system.

[redacted] — YES

NO

Assess mechanism of injury and evidence of high-energy impact:
- Falls > 10 ft. or 2-3 times the height of the child
- High-Risk Auto Crash
  - Intrusion, including roof: >12 in. occupant site; >18 in. ay site
  - Ejection (partial or complete) from automobile
  - Death in same passenger compartment
  - Vehicle telemetry data consistent with high-risk of injury
- Auto vs. pedestrian/bicyclist thrown, run over, or with significant (> 20 MPH) impact
- Motorcycle crash > 20 MPH

[redacted] — YES

Transport to a Trauma Center. Need not be the highest level trauma center.

NO

- Children should be triaged preferentially to pediatric-capable trauma centers
- Anticoagulation and bleeding disorders
  - Patients with head injury are at high risk for rapid deterioration
- Burns
  - Without other trauma mechanism: Triage to burn center
  - With trauma mechanism: Triage to trauma center
- Pregnancy > 20 weeks **(3)**
- EMS Provider Judgment

NO — Transport to patient's destination of choice or contact PTC medical control to make a destination determination

YES — Contact PTC medical control and consider transport to a PTC or specific resource hospital

GCS Scoring

Best eye response: (E)
4. Eyes opening spontaneously
3. Eye opening to speech
2. Eye opening to pain
1. No eye opening

Best verbal response: (V)
5. Smiles, oriented to sounds, follows objects, interacts.
4. Cries but consolable, inappropriate interactions.
3. Inconsistently inconsolable, moaning.
2. Inconsolable, agitated.
1. No verbal response.

Best motor response: (M)
6. Infant moves spontaneously or purposefully
5. Infant withdraws from touch
4. Infant withdraws from pain
3. Abnormal flexion to pain for an infant (decorticate response)
2. Extension to pain (decerebrate response)
1. No motor response

Fulton County Emergency Medical Services

Patient Care Protocols

Pediatric Trauma Triage Decision Plan - P20 (2)

12/12/2014

[redacted]

Exceptions to Pediatric Triage Plan

Presence of one of the following:

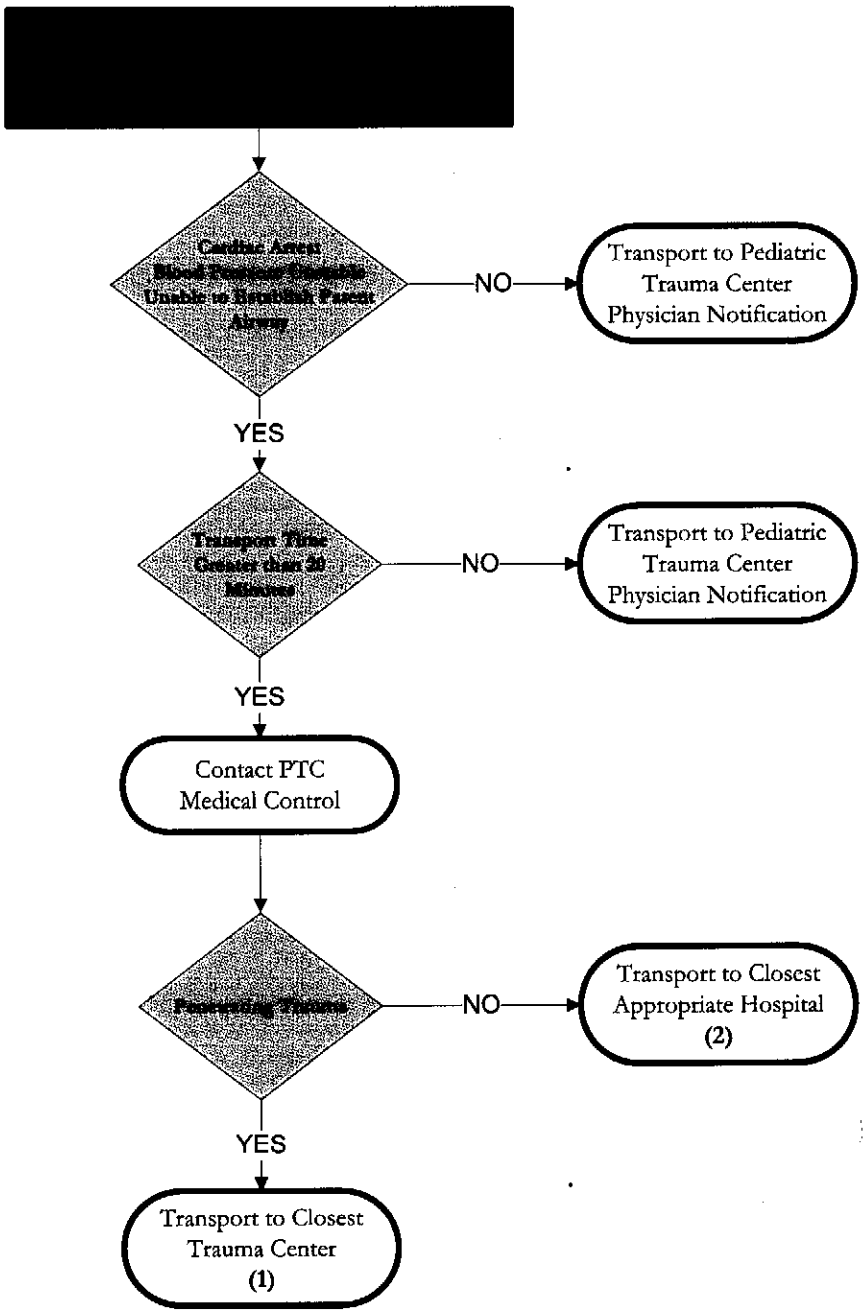
- Continuing cardiac arrest due to penetrating trauma.
- Continuing Cardiac Arrest due to Blunt trauma.
- Inability to Establish Patent Airway.
- Blood Pressure Unstable.

And

- Transport time greater than 20 minutes to appropriate PTC.

(1) For penetrating trauma transport to the nearest trauma center.

(2) For cardiac arrest, blood pressure instability and inability to establish a patent airway; transport to the closest appropriate hospital.



Fulton County Emergency Medical Services

Patient Care Protocols

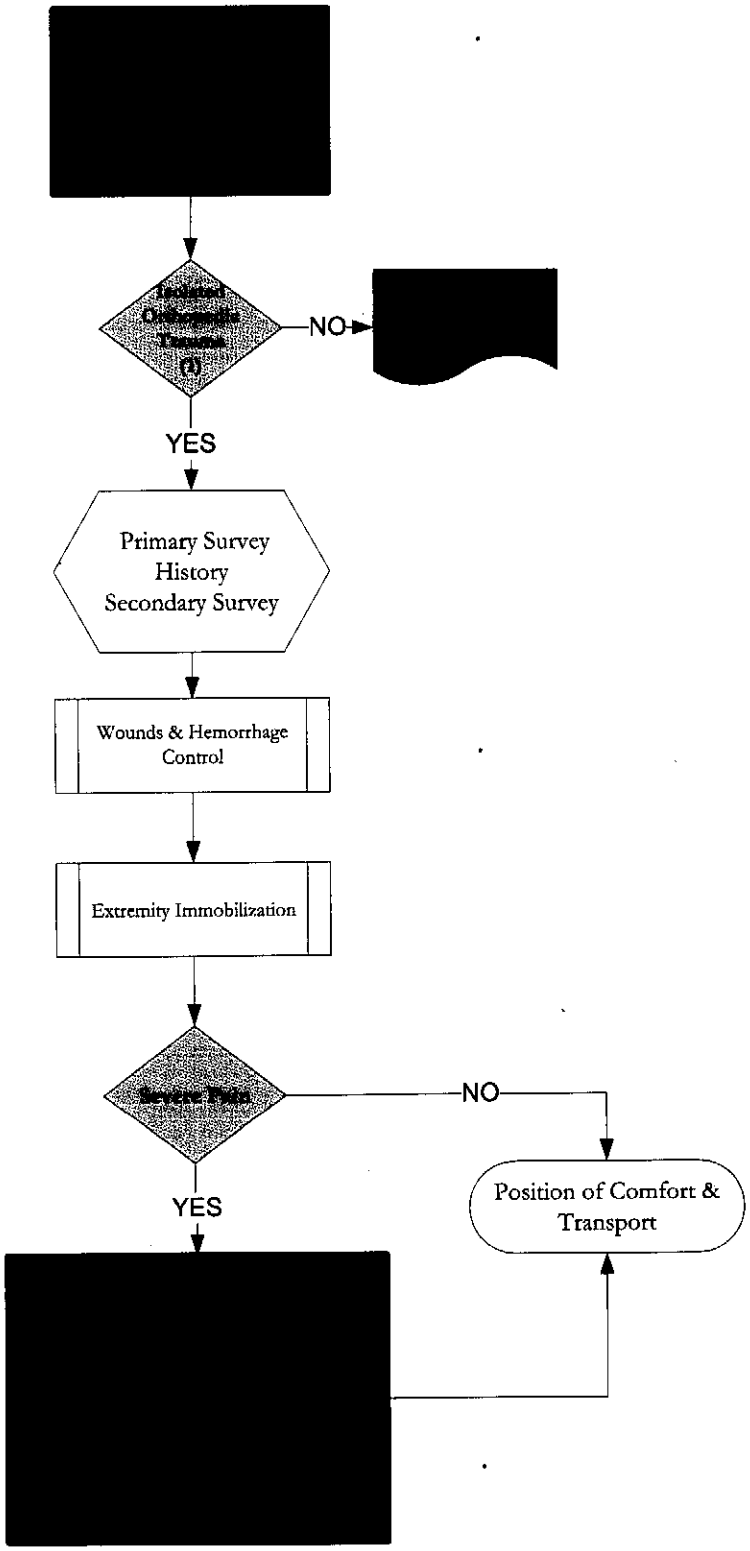
Pediatric Orthopedic Trauma - P21

12/12/2014

(1) Patients with multisystem injuries will be treated per the Major Trauma Protocol.

(2) Fentanyl is to be administered slow IVP to patients without history of allergy and vital signs in age appropriate range.

No patient with head, face, abdominal or thoracic injuries should receive morphine prior to direct physician evaluation.

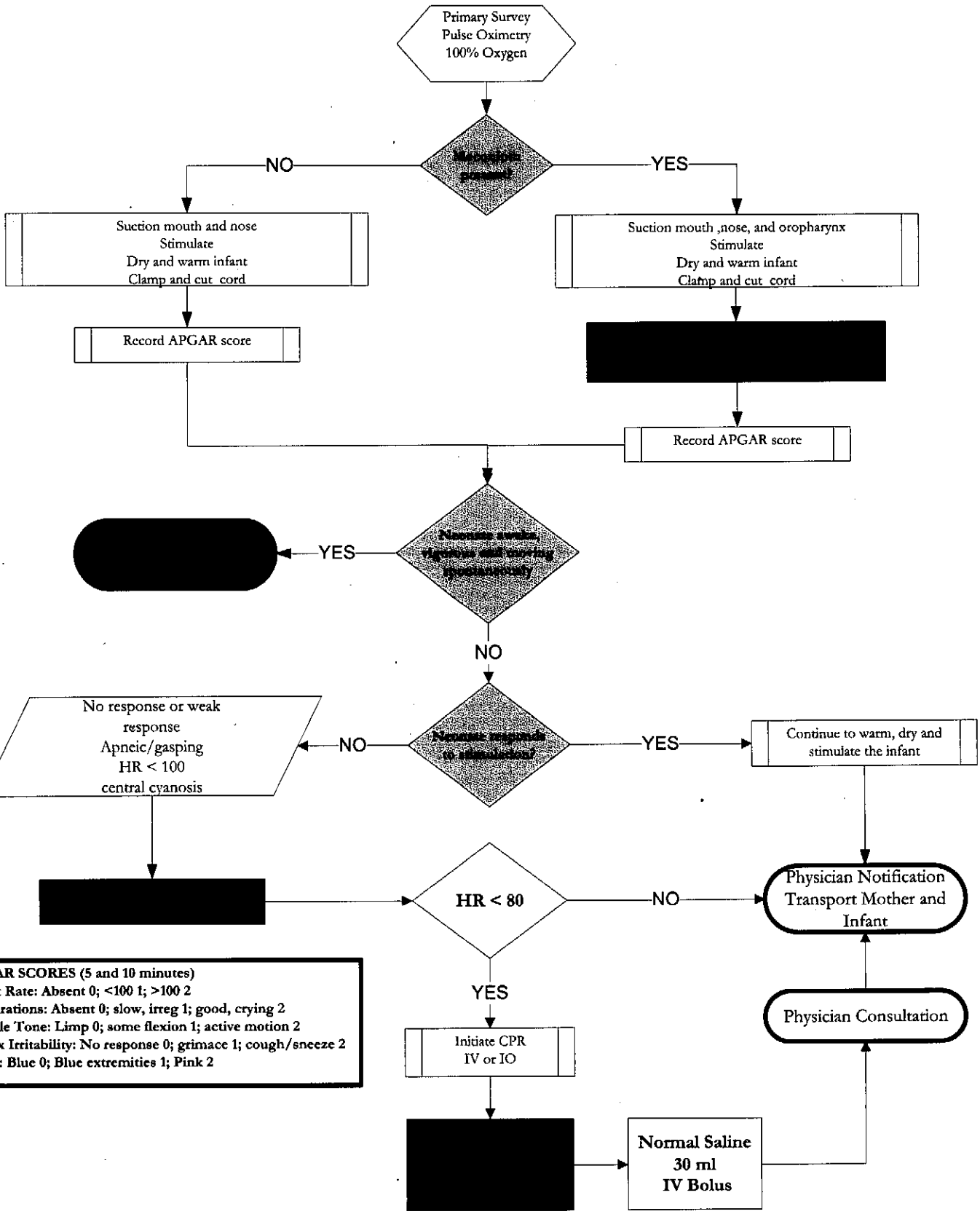


Fulton County Emergency Medical Services

Patient Care Protocols

Newborn Resuscitation P22

12/12/2014



APGAR SCORES (5 and 10 minutes)
Heart Rate: Absent 0; <100 1; >100 2
Respirations: Absent 0; slow, irreg 1; good, crying 2
Muscle Tone: Limp 0; some flexion 1; active motion 2
Reflex Irritability: No response 0; grimace 1; cough/sneeze 2
Color: Blue 0; Blue extremities 1; Pink 2

Fulton County Emergency Medical Services

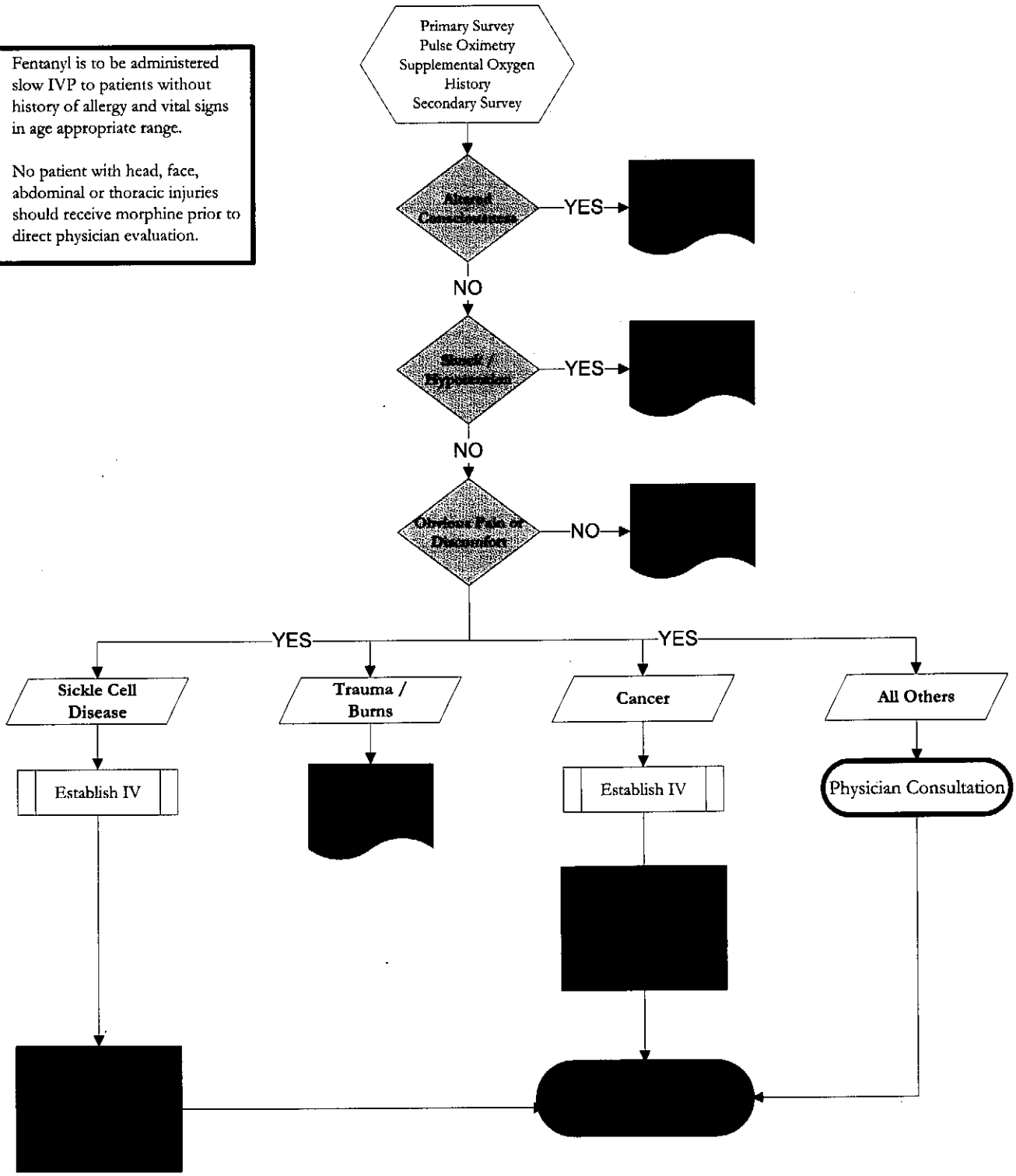
Patient Care Protocols

Pediatric Pain Management P23

12/12/2014

(1) Fentanyl is to be administered slow IVP to patients without history of allergy and vital signs in age appropriate range.

No patient with head, face, abdominal or thoracic injuries should receive morphine prior to direct physician evaluation.



Fulton County Emergency Medical Services

Clinical Care Guidelines

Adult Trauma

12/12/2014

T1	Major Trauma	12/12/2014
T2	Traumatic Brain Injury	12/12/2014
T3	Orthopedic Trauma	12/12/2014
T4	Burn Categorization	12/12/2014
T5	Thermal Injuries	12/12/2014
T6	Inhalation Injury	12/12/2014
T7	Traumatic Arrest	12/12/2014

Fulton County Emergency Medical Services

Clinical Care Guideline – T1

Major Trauma

12/12/2014

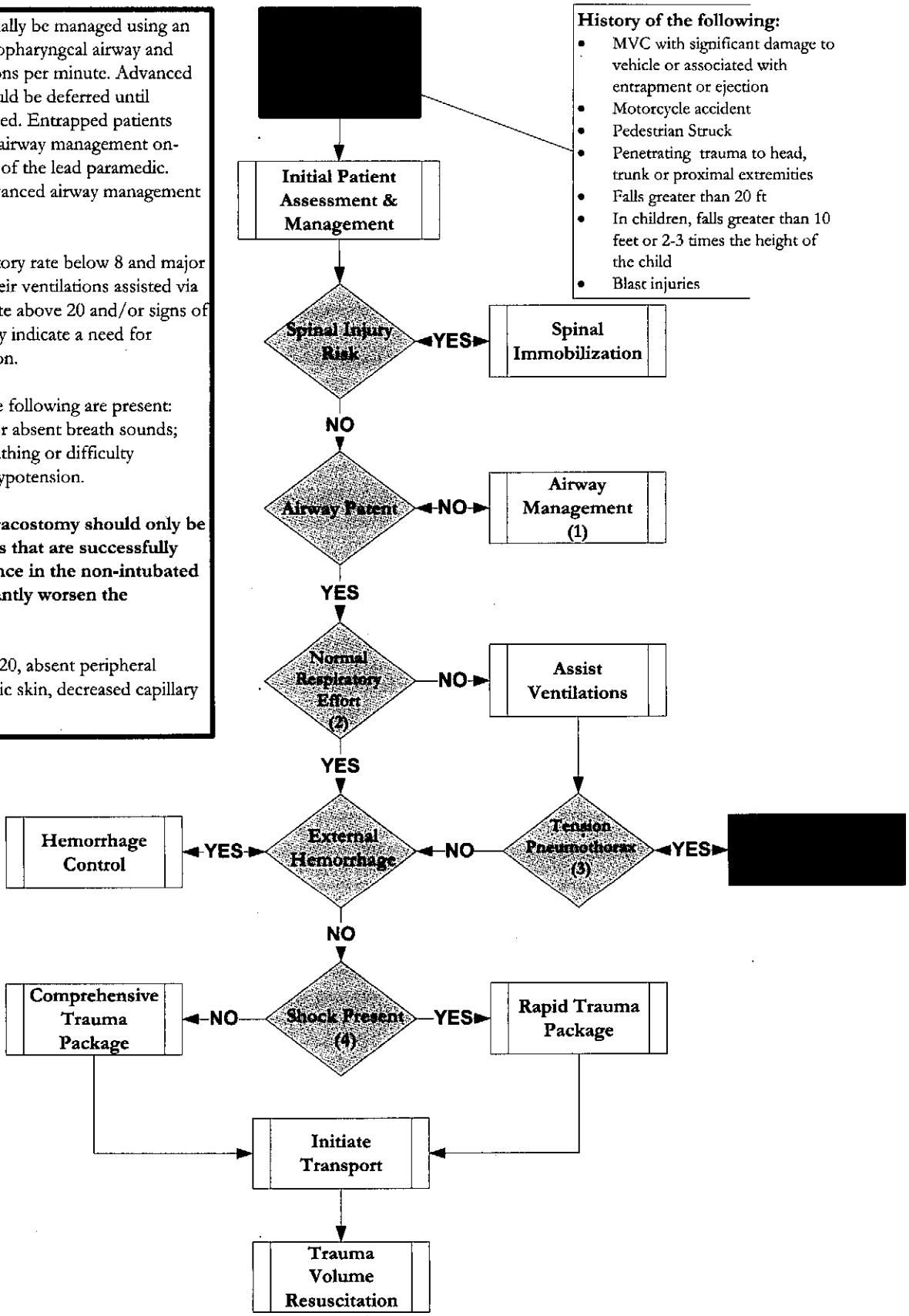
1. The airway should initially be managed using an oral pharyngeal or nasopharyngeal airway and BVM at 8-10 ventilations per minute. Advanced airway maneuvers should be deferred until transportation is initiated. Entrapped patients may receive advanced airway management on-scene at the discretion of the lead paramedic. King Airway is the advanced airway management device of choice.

2. Patients with a respiratory rate below 8 and major trauma should have their ventilations assisted via BVM. A respiratory rate above 20 and/or signs of respiratory distress may indicate a need for supplemental ventilation.

3. Consider only if **all** the following are present: unilateral diminished or absent breath sounds; increased work of breathing or difficulty ventilating; shock or hypotension.

   Bilateral needle thoracostomy should only be performed in patients that are successfully intubated. Performance in the non-intubated patient may significantly worsen the respiratory status.

4. Tachycardia: adult > 120, absent peripheral pulses, cool/diaphoretic skin, decreased capillary refill, pallor.



Fulton County Emergency Medical Services

Clinical Care Guideline – T2

Traumatic Brain Injury

12/12/2014

1. Oxygenation and Ventilation are of the utmost importance in the head injured patient. Patients that have a GCS of 8 or below require aggressive airway management including supportive ventilation with BVM, BIAD/Supraglottic Airway Device or ETT. The optimal rate of ventilation in the adult is between **8** and **10** ventilations per minute. Over-ventilation is to be avoided and may worsen the condition of the brain injured patient.

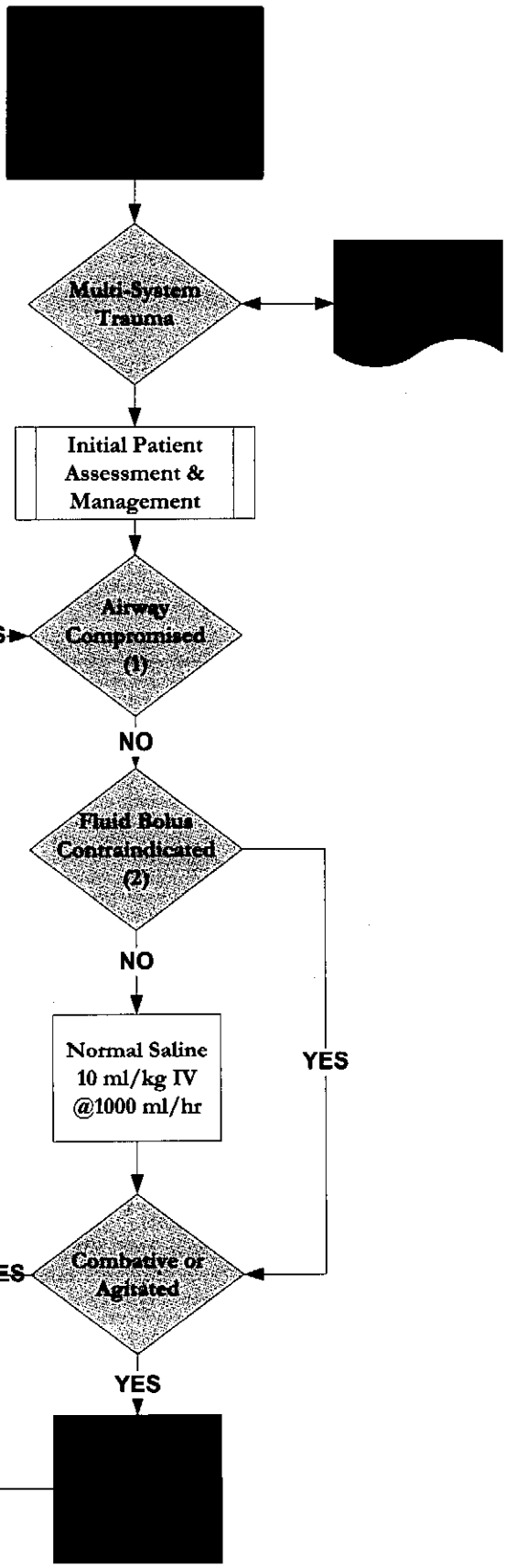
   The SpO2 should be maintained at 95% or better.

2. Hypotension in the setting of TBI should be rapidly treated with crystalloid infusion. A second IV may be required. The SBP should be maintained above 90 mmHg at all times.

3. Seizures in the setting of TBI will be treated via the adult seizure protocol. Watch carefully for the development of hypotension after benzodiazepine administration.

Glasgow Coma Scale

Eye Opening	
spontaneous	4
to voice	3
to pain	2
none	1
Best Verbal Response	
oriented	5
confused	4
inappropriate words	3
incomprehensible	2
none	1
Best Motor Response	
obeys commands	6
localizes pain	5
withdraws to pain	4
abnormal flexion	3
abnormal extension	2
none	1



Fulton County Emergency Medical Services

Clinical Care Guideline – T3

Orthopedic Trauma

12/12/2014

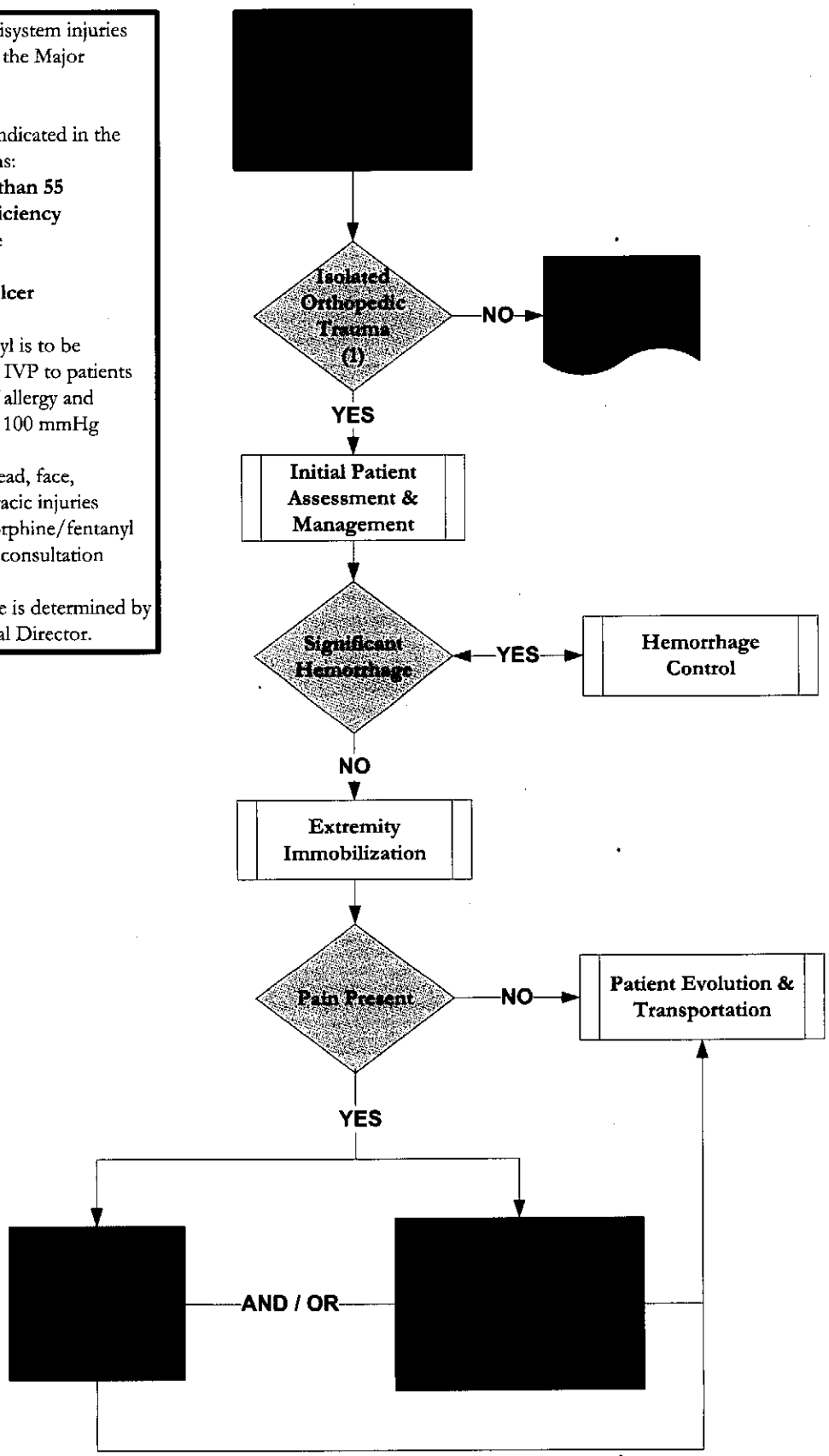
1. Patients with multisystem injuries will be treated per the Major Trauma Protocol

2. Toradol is contraindicated in the following situations:
   - **Age greater than 55**
   - **Renal insufficiency**
   - **Renal failure**
   - **GI Bleeding**
   - **History of Ulcer**

3. Morphine/Fentanyl is to be administered slow IVP to patients without history of allergy and Systolic BP above 100 mmHg

   No patient with head, face, abdominal or thoracic injuries should receive morphine/fentanyl prior to physician consultation

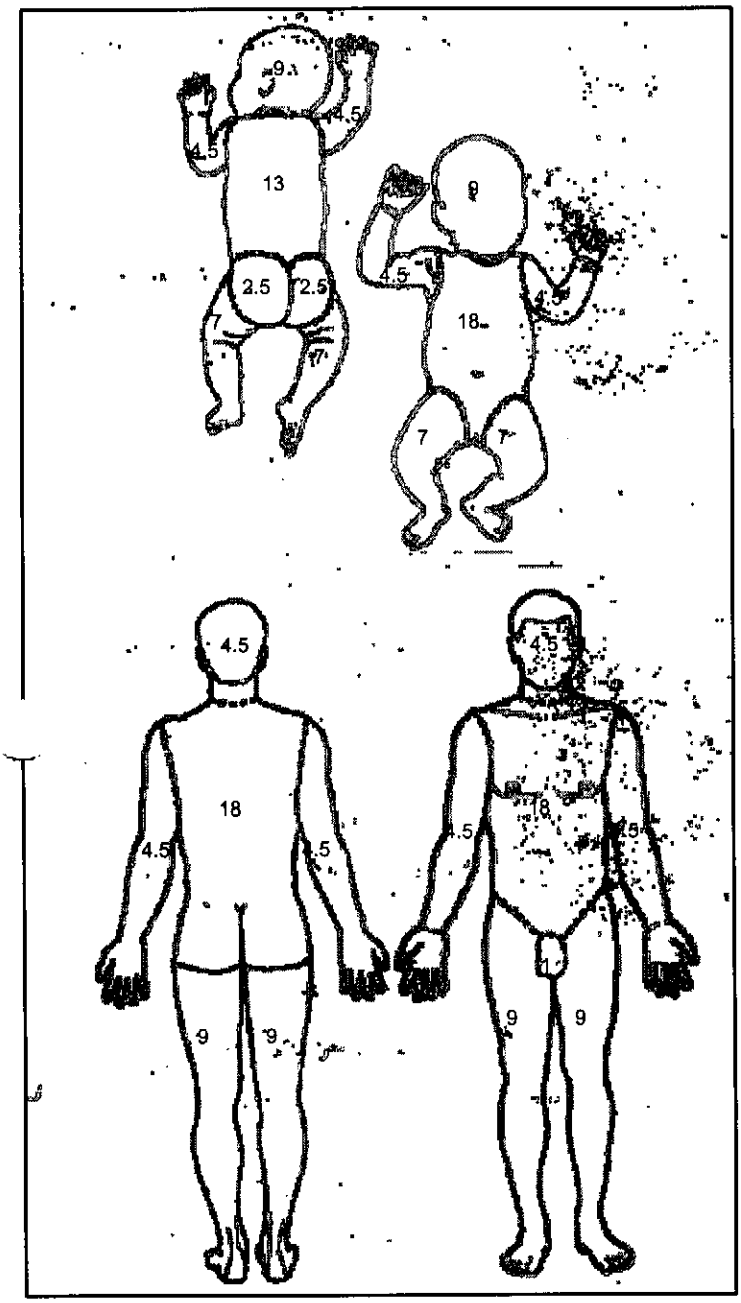
4. Narcotic preference is determined by the Service Medical Director.



Fulton County Emergency Medical Services

Burn Size Estimate – T4

12/12/2014



Major Burn Criteria

- Partial-thickness and full-thickness burns greater than 10% of the total body surface area (BSA) in patients under 10 years of age or over 50 years of age
- Partial-thickness and full-thickness burns greater than 20% in other age groups
- Partial-thickness and full-thickness burns involving the face, eyes, ears, hands, feet, genitalia, perineum, or those that involve the skin overlying a major joint
- Full-thickness burns greater than 5% BSA in any age group
- Significant electrical burns including lightening injury
- Significant chemical burns
- Inhalational injury
- Any burn injury with concomitant trauma

Depth of Burn

Shallow partial-thickness or second degree burn Injury

- Result from contact with hot liquids or flash burns from explosions
- Red or mottled appearance
- Blistered and broken epidermis
- Considerable swelling
- Weeping, wet surfaces
- Painful
- Sensitive to air

Deep-partial, full-thickness or third degree burns

- Caused by fire, prolonged exposure to hot liquids, contact with hot objects or electricity
- Initially may resemble second-degree burn injuries
- Pale, white, charred, leathery, mottled , or red appearance
- Broken skin with fat exposed
- Dry surface
- Painless and insensate
- Edema

Fulton County Emergency Medical Services

Clinical Care Guideline – T5

Thermal Injuries

12/12/2014

Inhalation Injury Risk

History of the following:

Explosion with burns to face & torso
Confinement in burning environment
Substance abuse prior to injury with AMS

Clinical findings:

Stridor, AMS, tachypnea, facial burns, singeing of eyebrows and nasal hairs, carbon deposits in nares and oropharynx, oropharyngeal inflammation

1. Patients with at risk for inhalation injury may require early definitive airway management

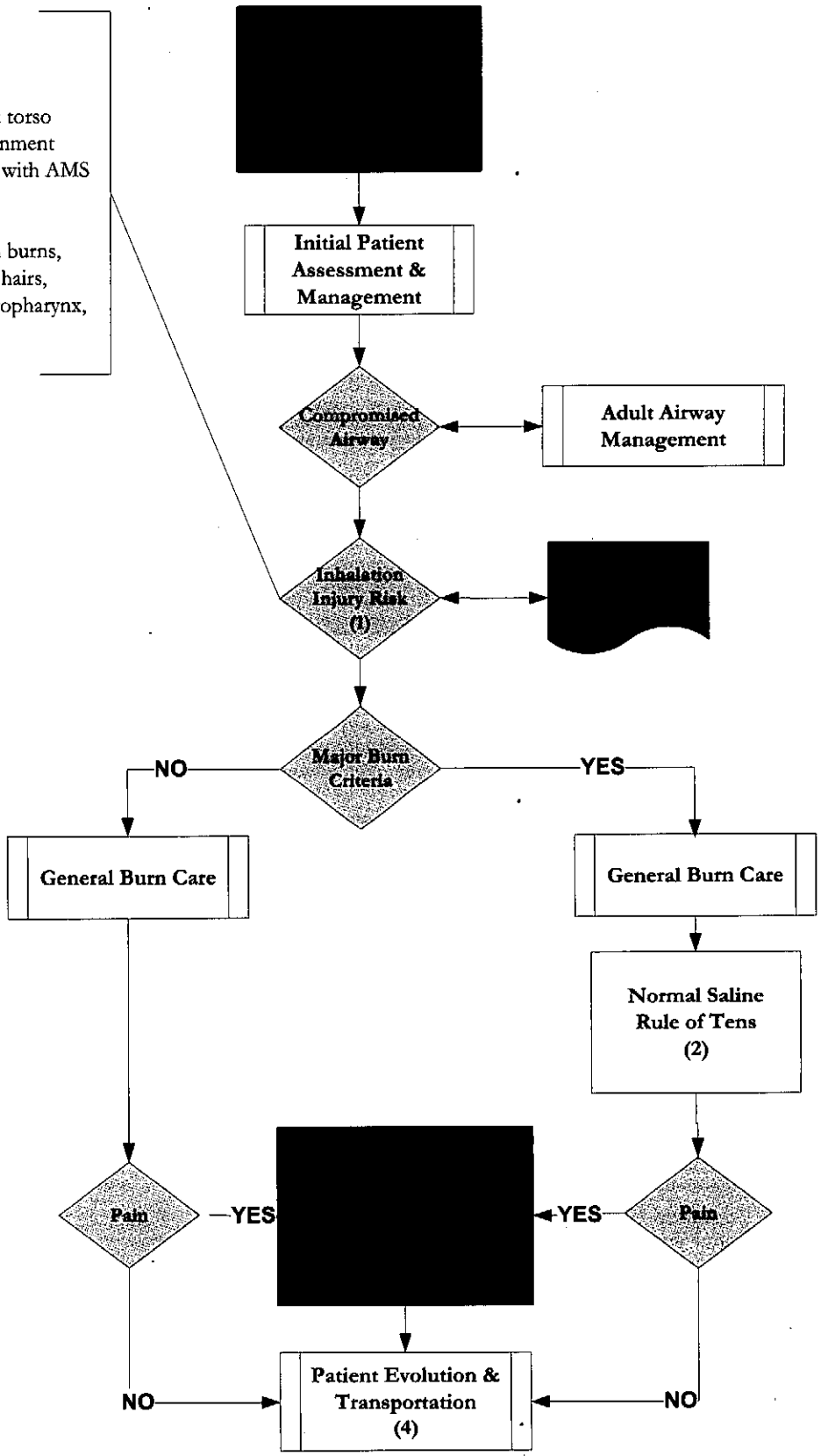
   The pulse oximeter will not accurately reflect oxygenation in the presence of carbon monoxide toxicity.

2. USAISR Rule of Ten
   A) Estimate burn area to the nearest 10% using the rule of nines.
   B) For an Adult patient weighing 40-80kg use %TBSA x 10=Initial fluid rate in ml/hr
   C) for every 10kg above 80kg increase the fluid infusion rate by 100ml/hr
   ***Do not exceed 1 liter of IV fluid unless authorized by medical control**
   ***Fluid should be given at a controlled rate – NOT a fluid bolus.**

3. Morphine/Fentanyl is to be administered slow IVP to patients without history of allergy and Systolic BP above 100 mmHg

   No patient with head, face, abdominal or thoracic injuries should receive morphine prior to physician consultation

4. Refer to A-11 for destination.



Fulton County Emergency Medical Services

Clinical care Guideline – T6

Inhalation Injury

12/12/2014

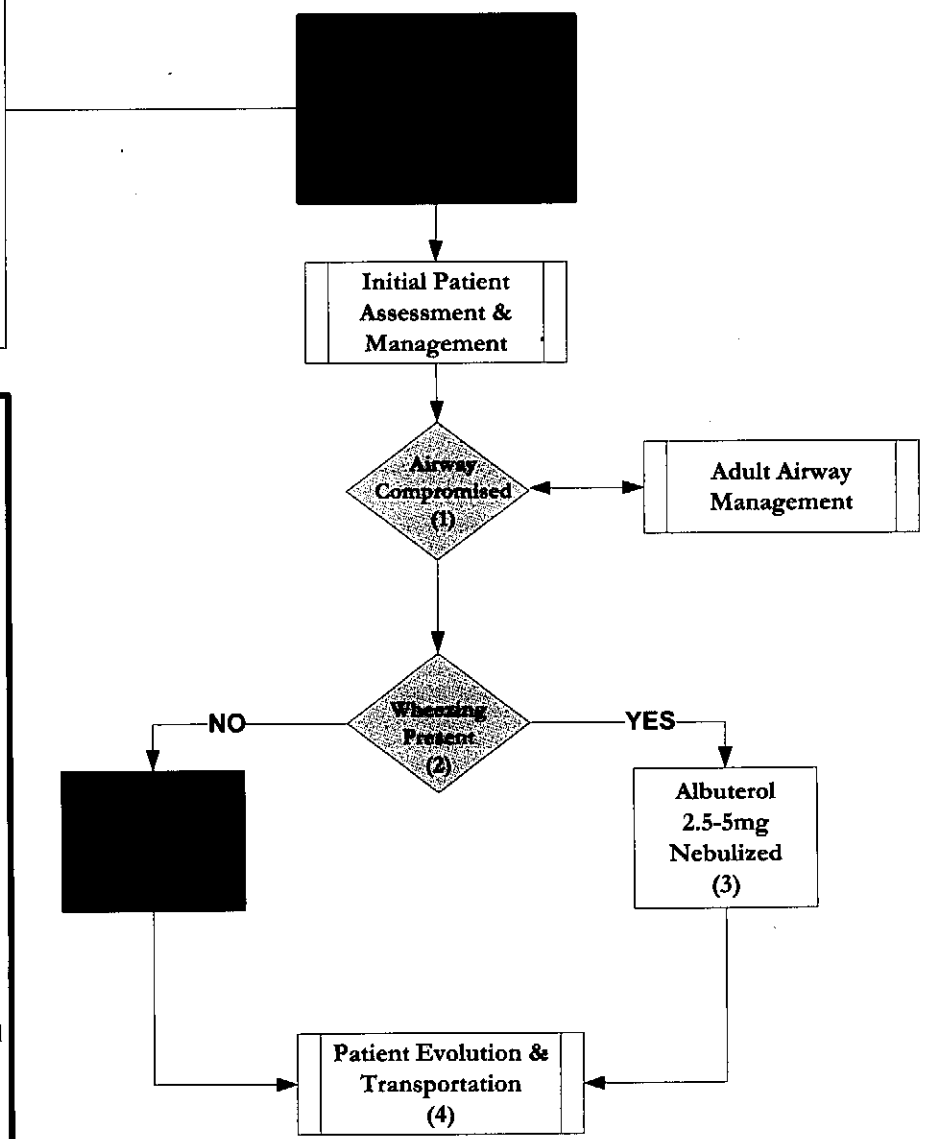
Inhalation Injury Risk

History of the following:

Explosion with burns to face & torso
Confinement in burning environment
Inhalation of a caustic gas
Inhalation of steam or super-heated air
Substance abuse prior to injury with AMS

Clinical findings:

Stridor, AMS, tachypnea, facial burns, carbon deposits in nares and oropharynx, oropharyngeal inflammation, inability to speak



1. Patients with at risk for inhalation injury may require early definitive airway management if respiratory compromise is associated with decreased mental status.

   Pulse oximetry should be continuously monitored in patients at risk for inhalational injuries.

   In the presence of carbon monoxide poisoning the pulse oximeter will not provide an accurate reading.

2. Patients with evidence of bronchospasm, typically manifesting as wheezing and an increased expiratory phase on clinical exam, will require albuterol.

3. Patients with inhalational injuries should be given given continuous nebulizations until symptomatically improved.

   The nebulizer should be run on oxygen at a flow of 6 to 8 liters/min.

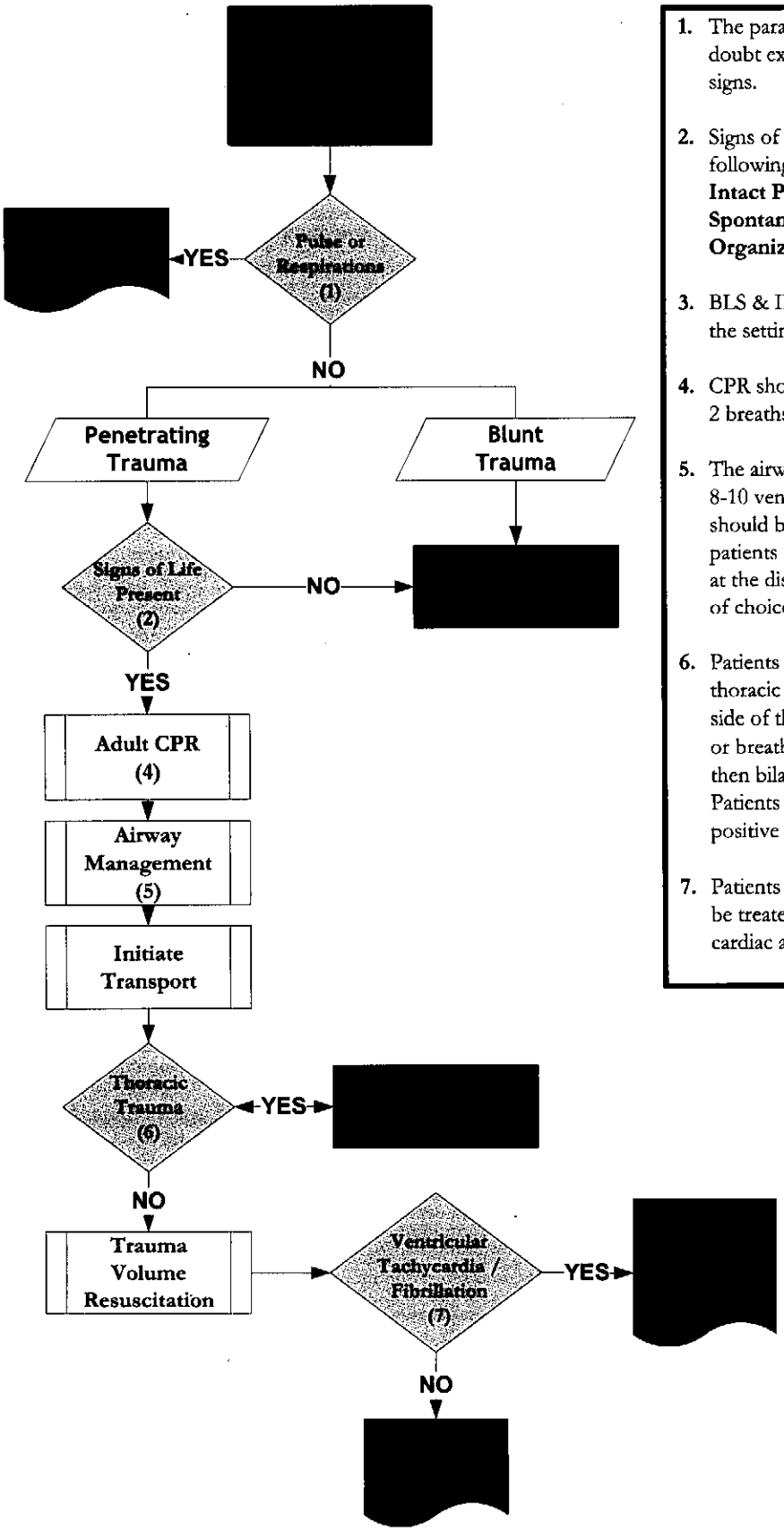
4. Refer to A-11 for destination.

Fulton County Emergency Medical Services

Clinical Care Guideline – T7

Traumatic Arrest

12/12/2014



1. The paramedic in charge may elect to initiate resuscitation if doubt exists concerning the time of arrest or absence of vital signs.

2. Signs of life in a penetrating trauma patient can be any of the following:
   Intact Pupillary Reflexes
   Spontaneous Movement
   Organized Rhythm on ECG with Rate Greater Than 40

3. BLS & ILS crews will always initiate resuscitative measures in the setting of blunt or penetrating traumatic arrest.

4. CPR should be initiated at 100 compressions per minute and 2 breaths per cycle.

5. The airway should initially be managed using a King airway at 8-10 ventilations per minute. Advanced airway maneuvers should be deferred until transportation is initiated. Entrapped patients may receive advanced airway management on-scene at the discretion of the lead paramedic. King airway is airway of choice.

6. Patients in traumatic cardiac arrest secondary to penetrating thoracic trauma should receive pleural decompression on the side of the injury. If the patient remains difficult to ventilate or breath sound are absent on the side opposite the injury then bilateral needle thoracostomies may be performed. Patients receiving bilateral needle thoracostomies will require positive pressure ventilation.

7. Patients in persistent cardiac arrest secondary to trauma may be treated with the appropriate protocol for the underlying cardiac arrest rhythm.