Prehospital Patient Care Protocols

REVISED May 2021

SWVEMS Council Prehospital Care Protocols

Index

CARD COLOR KEY

RED - Cardiac Emergencies

GREEN - Medical Emergencies

YELLOW - Injury Emergencies

ORANGE-Enviornmental Emergencies

PURPLE – Exposure Emergencies

PINK – OB/GYN Emergencies

BLUE - Medications

CREAM - Communication Directory

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INTRODUCTION

This operational protocol has been designed to serve as a guide for agencies in providing pre-hospital care. It also should serve as a guide to nurses and physicians who are involved in the delivery of Advanced Life Support through pre-hospital personnel. At the time of writing this manual, the protocols were written with current medical treatment in mind. However, given the complexity of medical care, these protocols should not be expected to provide the definitive care needed by every patient. These are guidelines that can be used to support patient care in a majority of cases, but cannot replace careful assessment of each patient and the specific setting in which they present.

Physicians that will be rendering treatment orders are encouraged to use this manual as a source for such orders, with the realization that many times, once contact has been made with a physician and a full description of the circumstances of the patient are revealed, certain treatments may differ from these protocols. It certainly remains the on-line physician's prerogative to deviate from theses protocols.

A "Reference Table" and "Algorythm Flow Chart" format has been selected for these protocols which will facilitate their use by all EMS providers. A provider need only reference the column of procedures headed by his/her level of training and follows them in sequential order. Symbols used in these protocols are defined as follows:

"**A"**-First Responder

"**B**"-EMT-Basic

"**C"-**Advanced EMT

"**I**"-Intermediate

"**E**"-Paramdeic

"**S**" - Standing Order, to be performed prior to contact with on-line Medical Control.

"**O**" - On-line Order, to be performed with approval of on-line Medical Control.

In some cases, "**O**" procedures may be performed IF Medical Control cannot be contacted via radio or telephone and with the OMD's prior approval. Also, please note that when dealing with critical patients, the receiving facility should be contacted as early as possible. In the event that NO means of communication with Online Medical Control is available and an "**O**" procedure is performed the provider must submit all documentation to the following for review: agencies OMD, agency supervisor, and Southwest Virginia EMS Council's Performance Improvement Committee.

We hope that this manual will help to provide some degree of standardization for the Southwest Virginia area, and will help to define the level of care that should routinely be given by pre-hospital personnel. Any questions or concerns about this manual are welcomed, and should be directed through the Council Office at 276-628-4151.

SKILLS FOR CERTIFICATION LEVELS

Please refer to the Virginia Office of EMS Medication schedule and Procedures schedule, which can be found on the OEMS website. These schedules are intended to be used as operational maximums and training minimums, as per each agency's OMD. The Agency OMD will determine which skills on this checklist will be permitted for each certification level.

Advanced Life Support Assist / Intercept Guidelines

Patients with evidence of the following shall indicate **immediate dispatch of ALS (Intermediate/Paramedic) if available**:

I. AIRWAY / RESPIRATORY EMERGENCIES:

A. Obstructed Airway

B. Breathing which is:

1. ABSENT 2. SEVERELY Labored

3. Rate above 40 / below 10

C. Skin cyanotic (blue color)

II. CIRCULATORY / CARDIAC EMERGENCIES:

A. Pulse which is:

1. ABSENT 2. IRREGULAR (new onset)

3. Very weak 4. Rate above 160 / below 40

B. Blood Pressure: - above 200/120 or below 90/60

C. SEVERE Chest Pain / Pale, clammy skin

D. Severe, Uncontrolled bleeding

III. LEVEL of CONSCIOUSNESS:

A. UNRESPONSIVE

B. Decreased - below normal for Pt.

(I.e. overdose, diabetic, stroke)

IV. TRAUMA ***

A. Severe injury to the HEAD, CHEST, or Abdomen

B. Multiple fractures

C. MVA with: 1. Entrapment 2. Ejection from vehicle

3. Multiple injuries 4. Pedestrian at >20 mph or

5. Death of same vehicle occupant

D. Falls greater than 15 feet.

*** Should also indicate activation of Aeromedical helicopter if more than 15 minutes from Trauma Center

V. INDEX OF SUSPICION:

ALS should be dispatched for any patient who sounds or looks "Bad" - as if death may be imminent!

DO NOT WAIT

For ALS at the scene . . . Meet them enroute.

AIR MEDICAL TRANSPORT GUIDELINES

If Ground Transport time to a Trauma Center is greater than Air Transport time and patient meets the following; the closest appropriate Air Medical Transport should be utilized.

Adult Patient	Pediatric Patient
	All pediatric patients with Pediatric Trauma Scores ≤ 6 * See pediatric trauma score page 50
Respiratory • Bilateral thoracic injuries • Significant unilateral injuries in pt's >60 (e.g. pneumothorax, hemo- pneumothorax, pulmonary contusion, >5 rib fractures) • Significant unilateral injuries in patients with pre-existing cardiac and/or respiratory disease • Respiratory compromise requiring intubation • Flail chest	**Respiratory** • Bilateral thoracic injuries • Significant unilateral injuries in patients with pre-existing cardiac and/or respiratory disease • Flail chest
CNS • Unable to follow commands • Open skull fracture • Extra-axial hemorrhage on CT, or any intracranial blood • Paralysis • Focal neurological deficits • GCS ≤ 12	**CNS** • Open skull fracture • Extra-axial hemorrhage on CT Scan • Focal neurological deficits
Cardiovascular • Hemodynamic instability as determined by the treating physician • Persistent hypotension • Systolic B/P (<100) without immediate availability of surgical team	
Injuries • Any penetrating injury to the head, neck, torso or extremities proximal to the elbow or knee without a surgical team immediately available. • Serious burns/burns with trauma (see below) • Significant abdominal to thoracic injuries in patients where the physician in charge feels	**Injuries** • Any penetrating injury to the head, neck, chest abdomen or extremities proximal to the knee or elbows without a surgical team immediately available • Combination of trauma with burn injuries • Any injury or combination of injuries where the physician in charge feels treatment of the injuries would exceed the capabilities of the medical center

treatment of injuries would exceed capabilities of the medical center	
Special Considerations • Trauma in pregnancy (≥ 24 weeks gestation) • Geriatric • Bariatric • Special needs individuals	

DO NOT WAIT

For Air Medical at the scene . . . Meet them enroute.

MASS CASUALTY INCIDENT

RESPONSE OUTLINE

Use "5S" approach.

1. Scene safety survey.

2. Size up-how many patients? How severe?

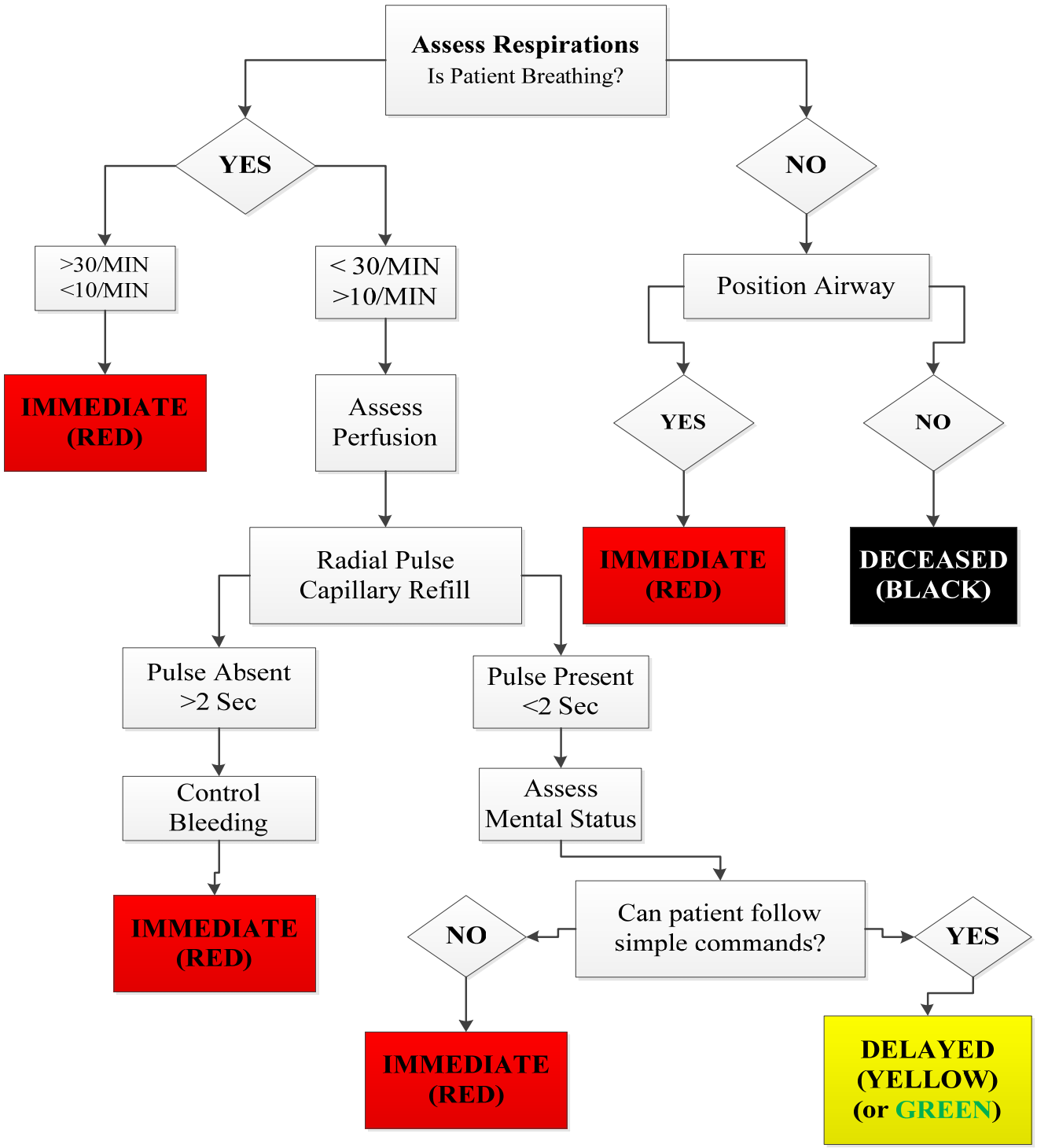
3. Send info to dispatch and initial mutual aid request as needed.

4. Setup-establish incident command including triage officer.

5. S.T.A.R.T. Triage

S.T.A.R.T. Simple Triage and Rapid Treatment

Remember **RPM** (**R**espirations, **P**erfusion, **M**ental Status)



Secondary Triage

Immediate (Red Tag)

Life threatening injuries with reasonably high probability of survival if treated and transported immediately.

Airway compromise and respiratory distress
Uncontrolled external bleeding or suspected severe internal bleeding
Non-catastrophic head injuries with altered LOC
Open chest or abdominal wounds
Shock
Severe medical problems
Thermal injury to the respiratory tract
3rd degree burns to 25%-50% BSA
Unconscious in absence of obvious head injury
Hypothermia

Delayed (Yellow Tag)

Potentially life threatening or severely debilitating injuries which can withstand a slight delay. These patients could deteriorate into Immediate, necessitating frequent reassessment.

Multiple/severe fractures
Back injuries with or without spinal cord damage
3rd degree burns to <25%BSA
Eye injuries
Significant blunt or penetrating trauma in the absence of immediate criteria

Minor (Green Tag)

Non life threatening injuries and requiring a minimum of care without deteriorating.

Minor fractures
Minor burns
Lacerations without significant blood loss

Deceased (Black Tag)

Unresponsive with no circulation or respirations: unable to support life.

Catastrophically injured patients not yet deceased with low probability of survival even with immediate treatment and transport should not be tagged.

Unresponsive with severe head injury
3rd degree burns to >50% BSA
Crushed chest injury (traumatic asphyxia)

PATIENT ASSESSMENT GUIDELINES

EVALUATE THE SCENE

Hospital personnel must rely on the information that you can give them regarding a scene. You also owe it to yourself and others (co-workers and the public) to continually assess each scene for potential dangers to you and them, as well as the patient. While on the scene you should assess mechanisms of injury, the total number of victims, and what resources are immediately available versus those that may be needed.

Specific Hazards that are most commonly found:

- Fire
- Electrical charges
- Hazardous Materials
- Traffic
- Severe Weather
- Weapons (You should always have law enforcement officers secure this type of scene before entering!!!)

Initial Patient Assessment

A - AIRWAY

ALWAYS ensure an open AIRWAY. Many simple techniques are available to deal with the compromised airway. ALWAYS consider mechanisms of injury and the POTENTIAL OF CERVICAL SPINE INJURY. If the potential of spinal injury exists, appropriate measures to stabilize this are mandated with the initiation of airway care.

B - BREATHING

Once assured that a patent airway is present, evaluation of BREATHING comes next. ALL PATIENTS must have the proper amount of air to enter the lungs. If spontaneous ventilation is not present, or is not adequate, artificial ventilation or assisted ventilation is often life-saving. After ventilations are effectively dealt with advanced airway placement may be considered for the situation based on patient's condition, and the pre-hospital care provider's skill level. Advanced airway use should almost always be considered in the patient with a respiratory rate of less than 10 or greater than 30. With assessment of breathing it is also important to evaluate the chest by exposure, inspection, and auscultation of breath sounds, with palpation of the chest wall most important if trauma has occurred.

C - CIRCULATION/BLEEDING

Check for the presence of a pulse; remember that the presence of a carotid pulse indicates a systolic of approximately 60, the presence of a femoral pulse means a systolic BP of 70, and the presence of a radial indicates a systolic BP of 80 or higher. In the absence of a palpable pulse, chest compressions should be started at a rate and depth appropriate to the patient. Refer to appropriate protocol. If a pulse is present quickly evaluate the condition for the skin to include capillary refill. Attempt to control all major bleeding sources immediately.

D - DISABILITY

Reassess the level of consciousness by using the AVPU scale:

A - Alert

V - Verbal stimuli produce a response

P - Painful stimuli produce a response

U - Unresponsive even to painful stimuli

E - EXPOSE / ENVIRONMENT

Expose the patient and remove clothing to evaluate the patient entirely, so that any injuries can be properly examined. With this exposure remember that it is important to maintain normal body temperature and prevent hypothermia.

IF EARLY OR IMMEDIATE TRANSPORT IS INDICATED, IV's and Secondary Survey are to be completed enroute to the hospital!!!!

Initial Patient Assessment

I. Proper Body Substance Isolation

II. Evaluate the Scene

a. Safety

b. Number of Patients

c. Mechanism of Injury

d. Nature of Illness

III. Assess Airway and maintain airway as certified

IV. Assess Breathing and Assist Ventilations if Inadequate

V. Assess Circulation

VI. Perform Secondary Assessment if no life-threatening Injuries or Conditions

Secondary Assessment

Head to Toe examination

Neurological Baseline

Pupil Response

Eye Opening

Verbal Response

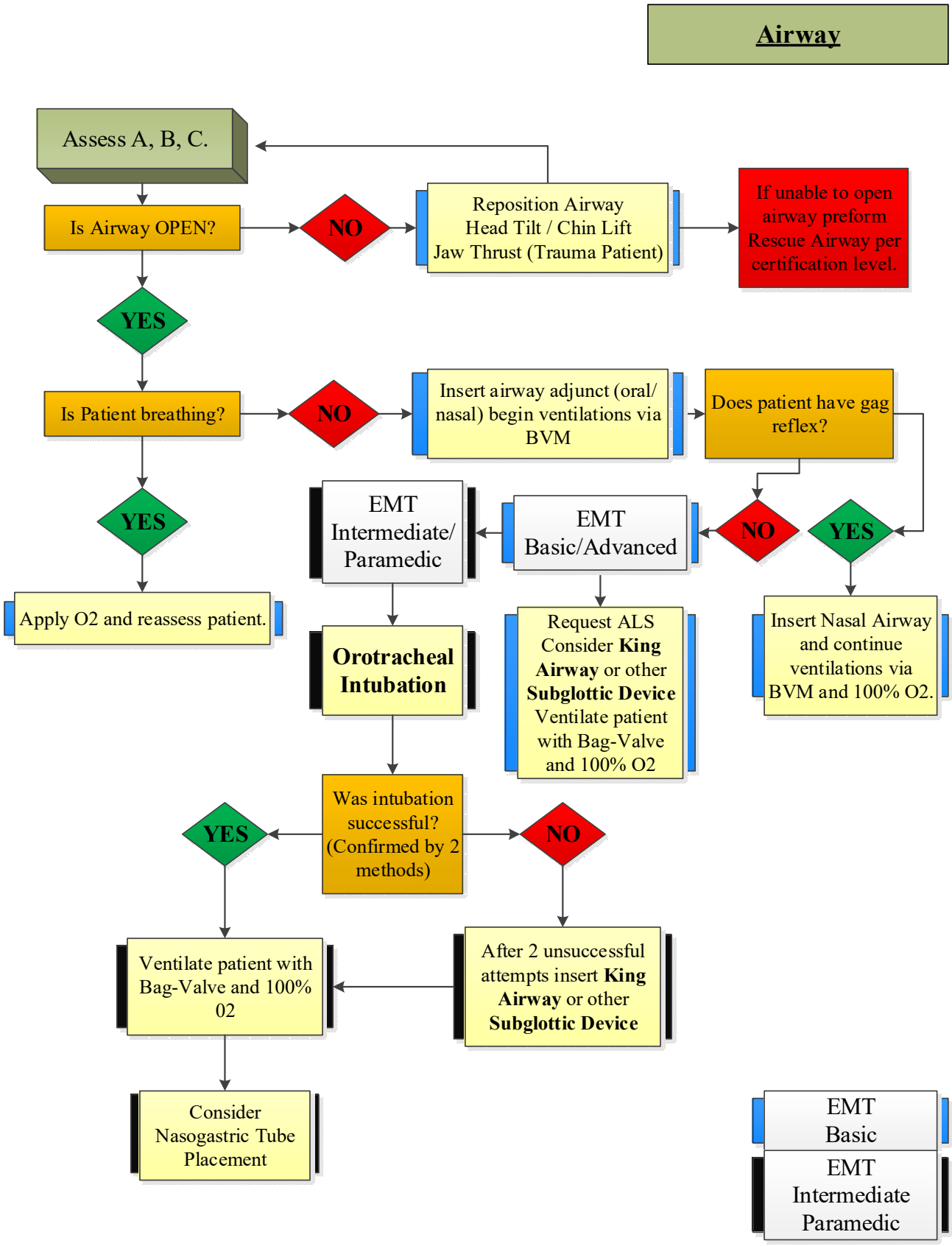
Motor Response

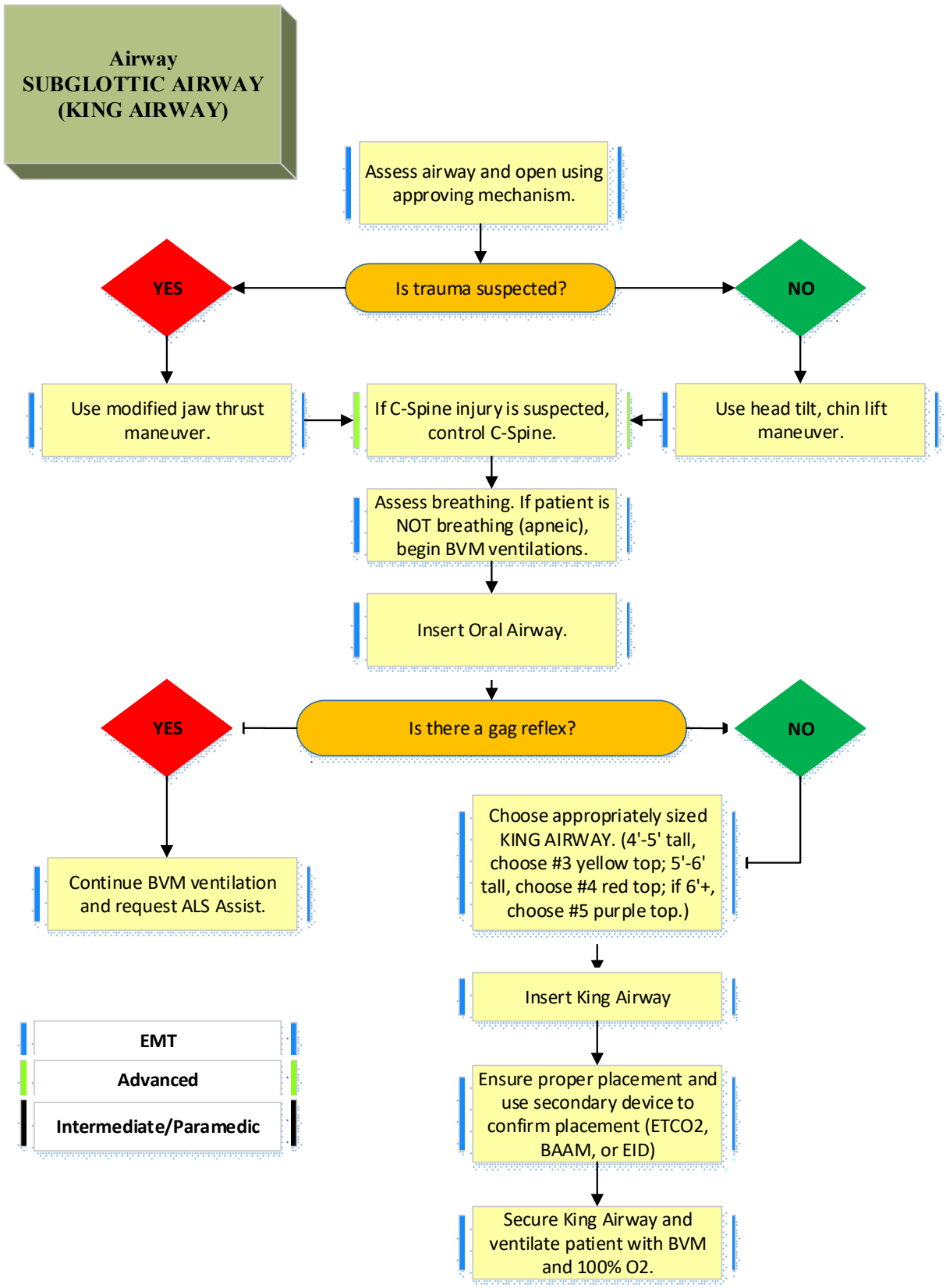
Stabilization of Fractures

Control of Minor Bleeding

Obtain S.A.M.P.L.E. History

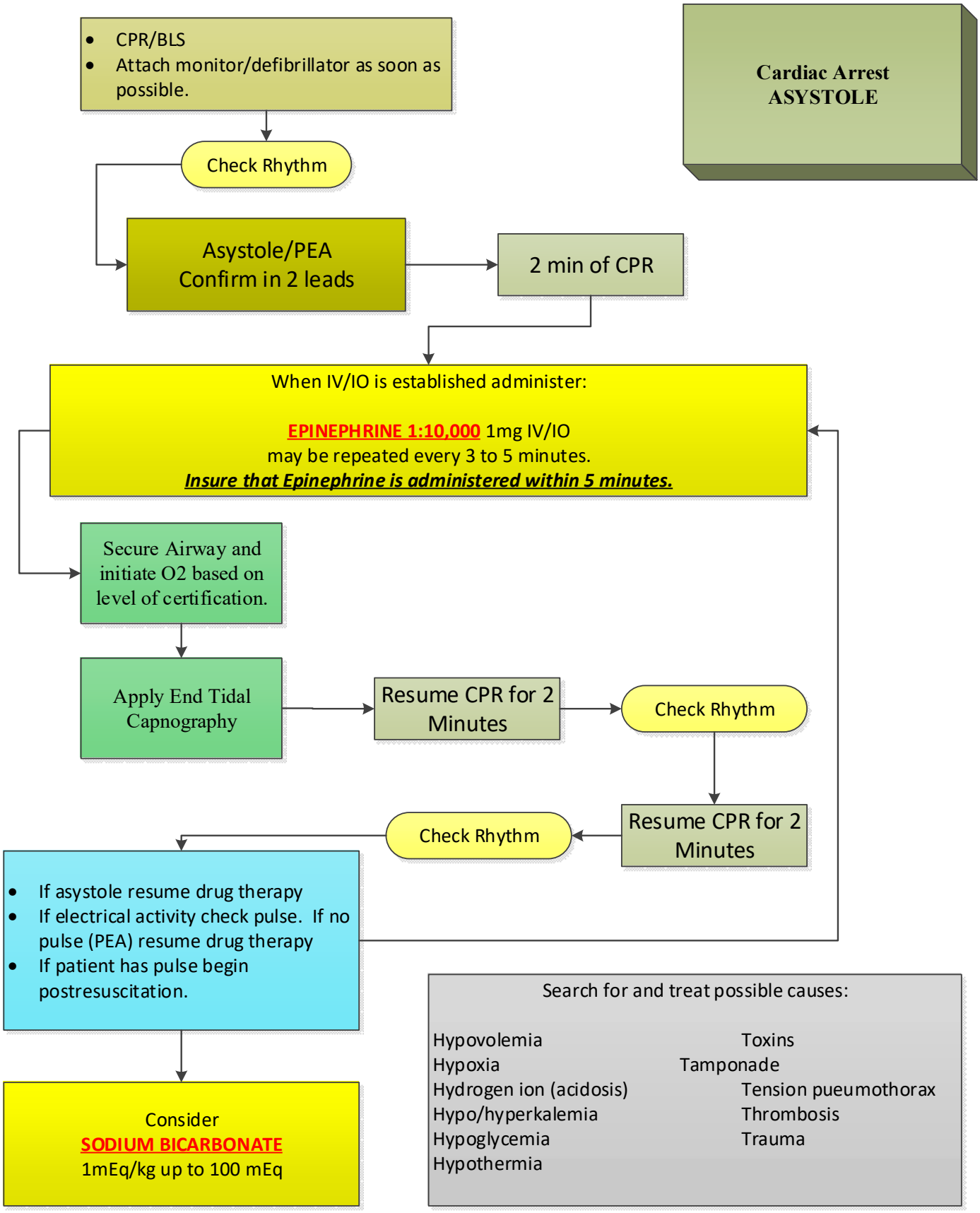
** ***Continuous reassessment of the patient is important. Monitoring of Vital Signs every 5 minutes during transport is important for the critically ill or injured patient.***

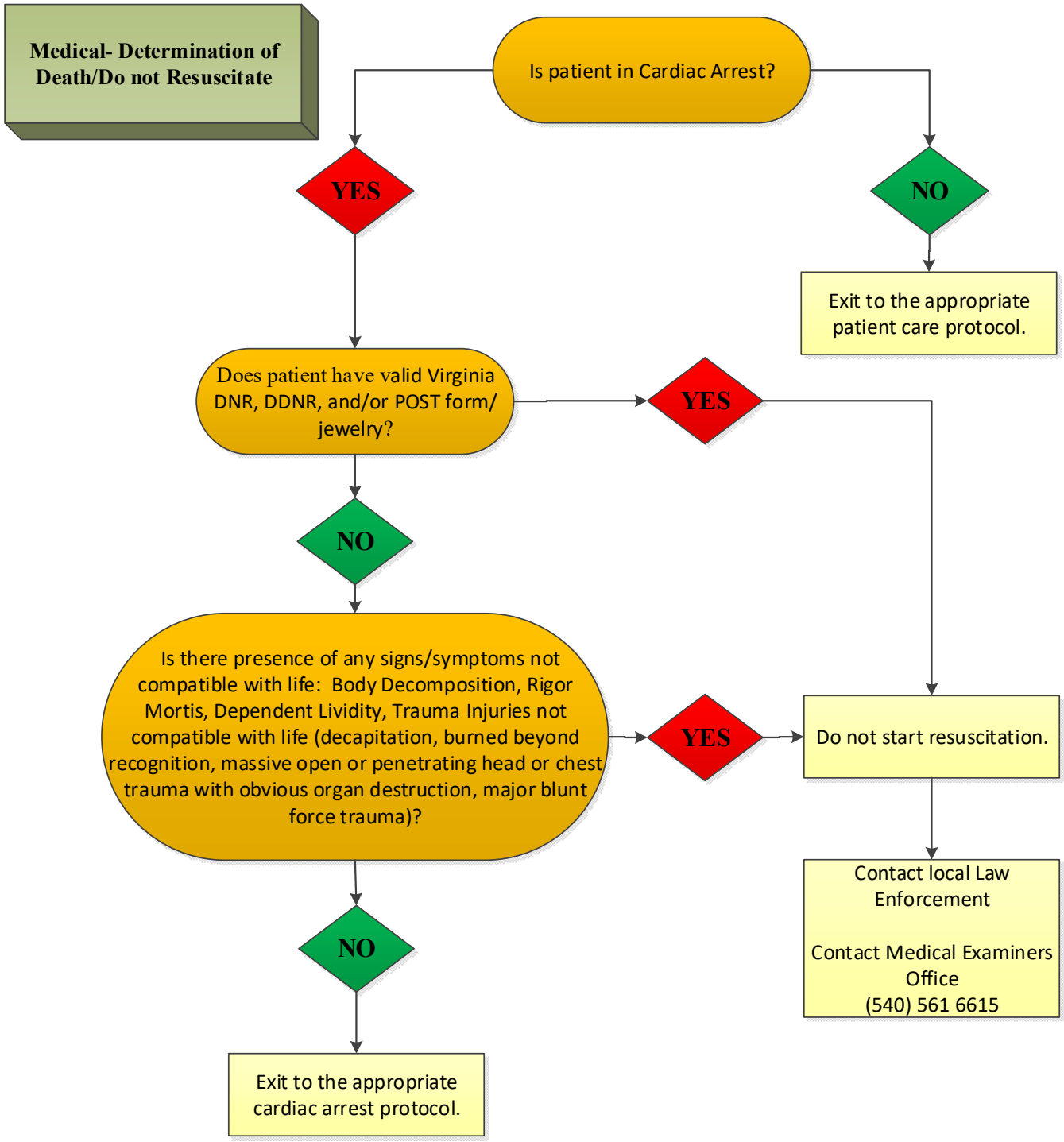

Airway
Assess A, B, C.
Is Airway OPEN?
NO
Reposition Airway
Head Tilt / Chin Lift
Jaw Thrust (Trauma Patient)
If unable to open airway preform Rescue Airway per certification level.
YES
Is Patient breathing?
NO
Insert airway adjunct (oral/ nasal) begin ventilations via BVM
Does patient have gag reflex?
YES
Apply O2 and reassess patient.
EMT Intermediate/ Paramedic
EMT Basic/Advanced
NO
YES
Orotracheal Intubation
Request ALS Consider King Airway or other Subglottic Device Ventilate patient with Bag-Valve and 100% O2
Insert Nasal Airway and continue ventilations via BVM and 100% O2.
Was intubation successful? (Confirmed by 2 methods)
YES
NO
Ventilate patient with Bag-Valve and 100% 02
After 2 unsuccessful attempts insert King Airway or other Subglottic Device
Consider Nasogastric Tube Placement
EMT Basic
EMT Intermediate Paramedic


Airway
SUBGLOTTIC AIRWAY
(KING AIRWAY)
Assess airway and open using approving mechanism.
Is trauma suspected?
YES
NO
Use modified jaw thrust maneuver.
If C-Spine injury is suspected, control C-Spine.
Use head tilt, chin lift maneuver.
Assess breathing. If patient is NOT breathing (apneic), begin BVM ventilations.
Insert Oral Airway.
Is there a gag reflex?
YES
NO
Continue BVM ventilation and request ALS Assist.
Choose appropriately sized KING AIRWAY. (4'-5' tall, choose #3 yellow top; 5'-6' tall, choose #4 red top; if 6'+, choose #5 purple top.)
Insert King Airway
Ensure proper placement and use secondary device to confirm placement (ETCO2, BAAM, or EID)
Secure King Airway and ventilate patient with BVM and 100% O2.
EMT
Advanced
Intermediate/Paramedic

Cardiac

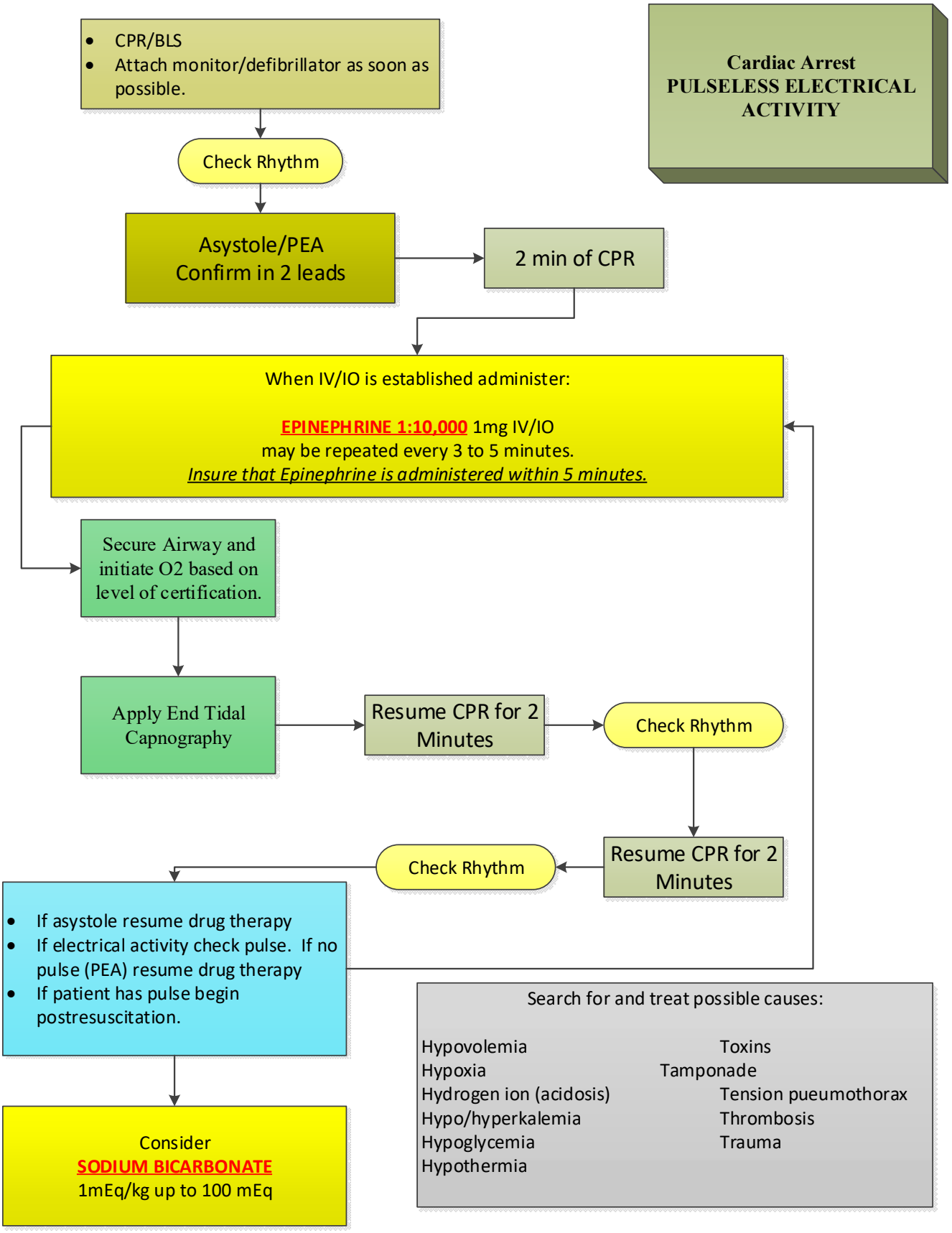
RELATED EMERGENCIES


Cardiac Arrest
ASYSTOLE
CPR/BLS
Attach monitor/defibrillator as soon as possible.
Check Rhythm
Asystole/PEA
Confirm in 2 leads
2 min of CPR
When IV/IO is established administer:
EPINEPHRINE 1:10,000 1mg IV/IO
may be repeated every 3 to 5 minutes.
Insure that Epinephrine is administered within 5 minutes.
Secure Airway and initiate O2 based on level of certification.
Apply End Tidal Capnography
Resume CPR for 2 Minutes
Check Rhythm
Resume CPR for 2 Minutes
Check Rhythm
If asystole resume drug therapy
If electrical activity check pulse. If no pulse (PEA) resume drug therapy
If patient has pulse begin postresuscitation.
Consider
SODIUM BICARBONATE
1mEq/kg up to 100 mEq
Search for and treat possible causes:
Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypo/hyperkalemia
Hypoglycemia
Hypothermia
Toxins
Tamponade
Tension pneumothorax
Thrombosis
Trauma

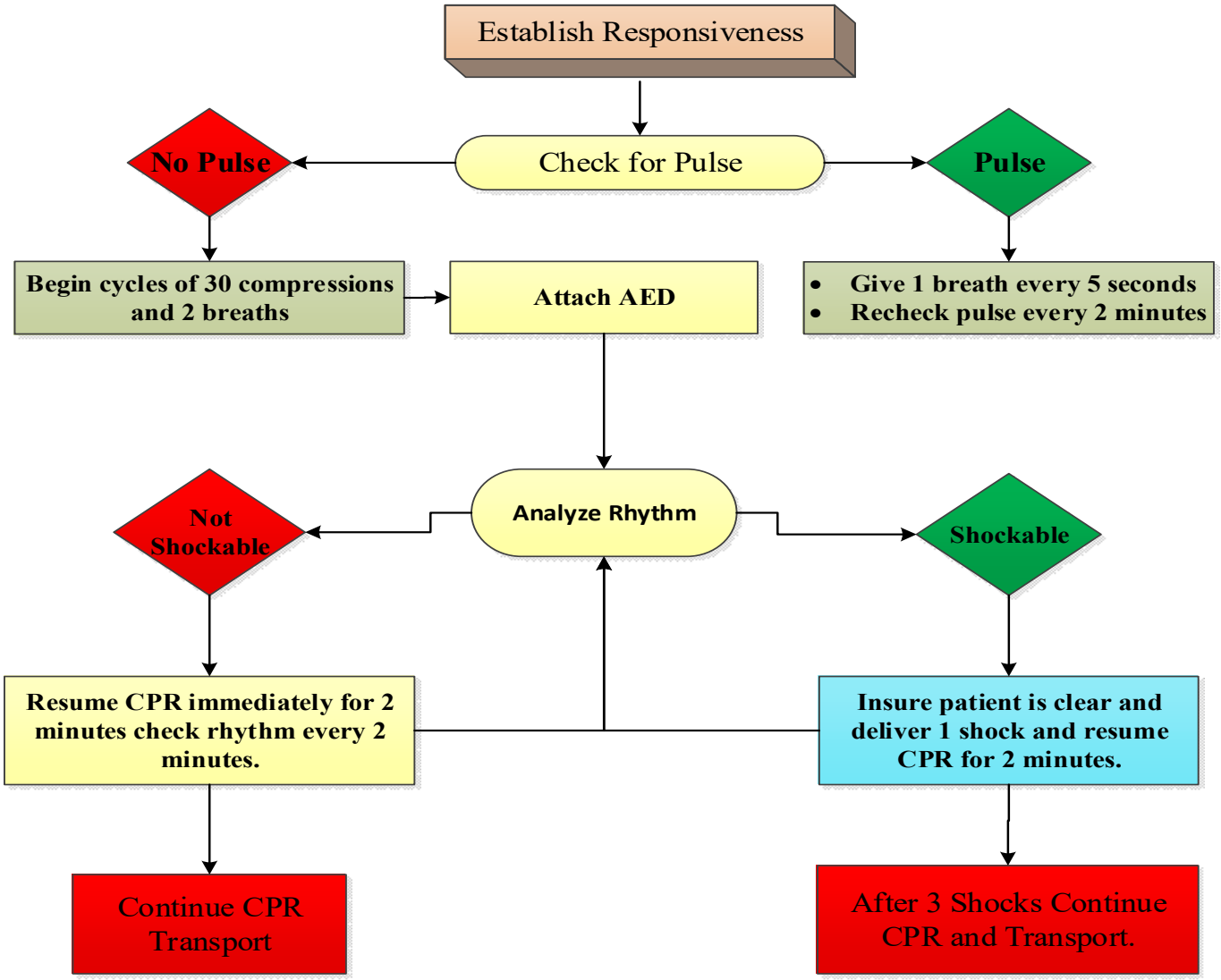


If bystander or first responder has initiated CPR or automated defibrillation prior to EMS arrival, and any of the above criteria (signs of death) are present, EMS may discontinue CPR and other interventions.

If doubt exists, start resuscitation immediately. Once resuscitation is initiated, continue resuscitation efforts until patient care is transferred to receiving hospital staff.


Cardiac Arrest
PULSELESS ELECTRICAL ACTIVITY
CPR/BLS
Attach monitor/defibrillator as soon as possible.
Check Rhythm
Asystole/PEA
Confirm in 2 leads
2 min of CPR
When IV/IO is established administer:
EPINEPHRINE 1:10,000 1mg IV/IO
may be repeated every 3 to 5 minutes.
Insure that Epinephrine is administered within 5 minutes.
Secure Airway and initiate O2 based on level of certification.
Apply End Tidal Capnography
Resume CPR for 2 Minutes
Check Rhythm
Resume CPR for 2 Minutes
Check Rhythm
If asystole resume drug therapy
If electrical activity check pulse. If no pulse (PEA) resume drug therapy
If patient has pulse begin postresuscitation.
Consider
SODIUM BICARBONATE
1mEq/kg up to 100 mEq
Search for and treat possible causes:
Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypo/hyperkalemia
Hypoglycemia
Hypothermia
Toxins
Tamponade
Tension pneumothorax
Thrombosis
Trauma

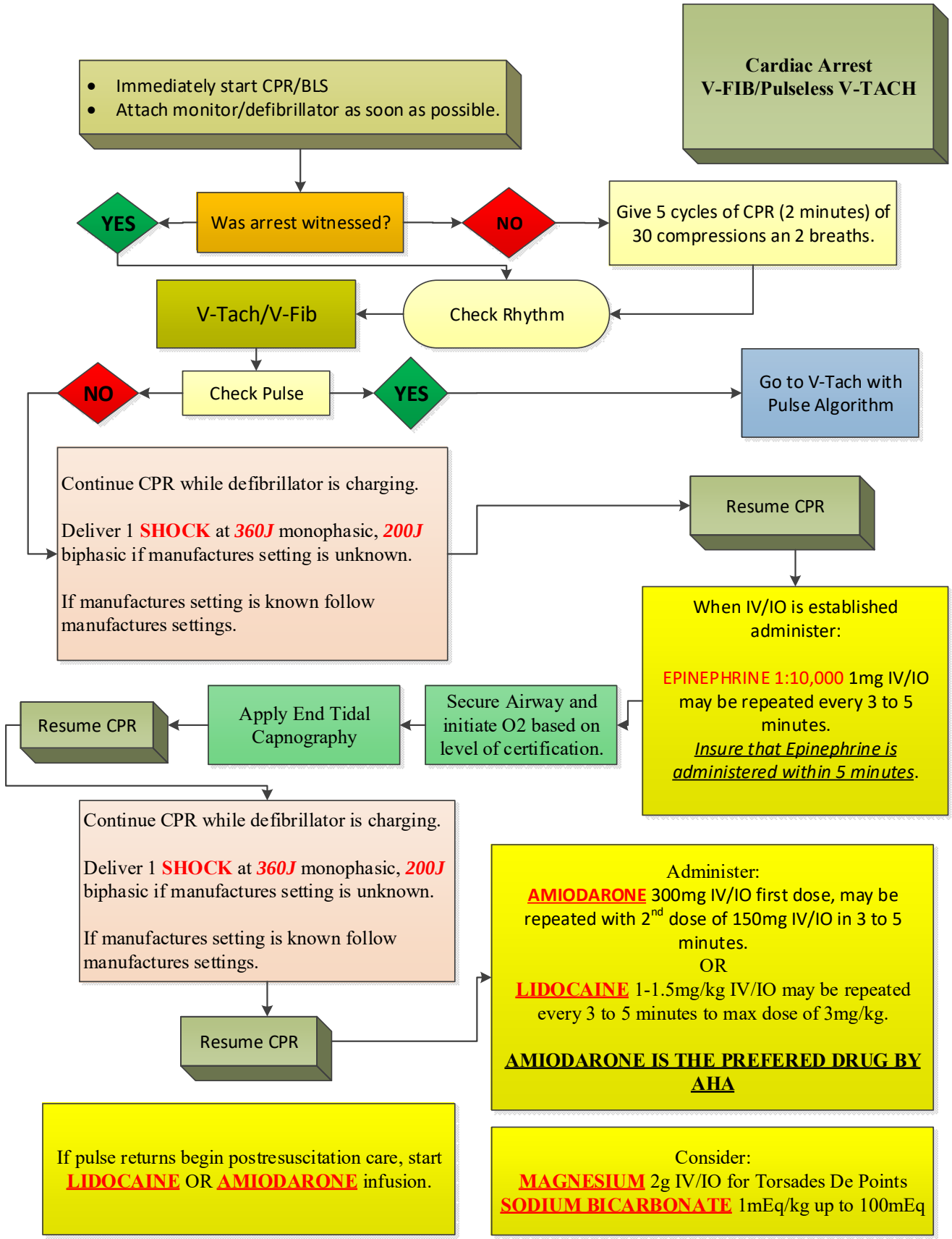
Cardiac Arrest-Unknown Rhythm



BLS Crew should request ALS assistance as soon as possible. BLS Crew should not delay transport awaiting ALS assistance.

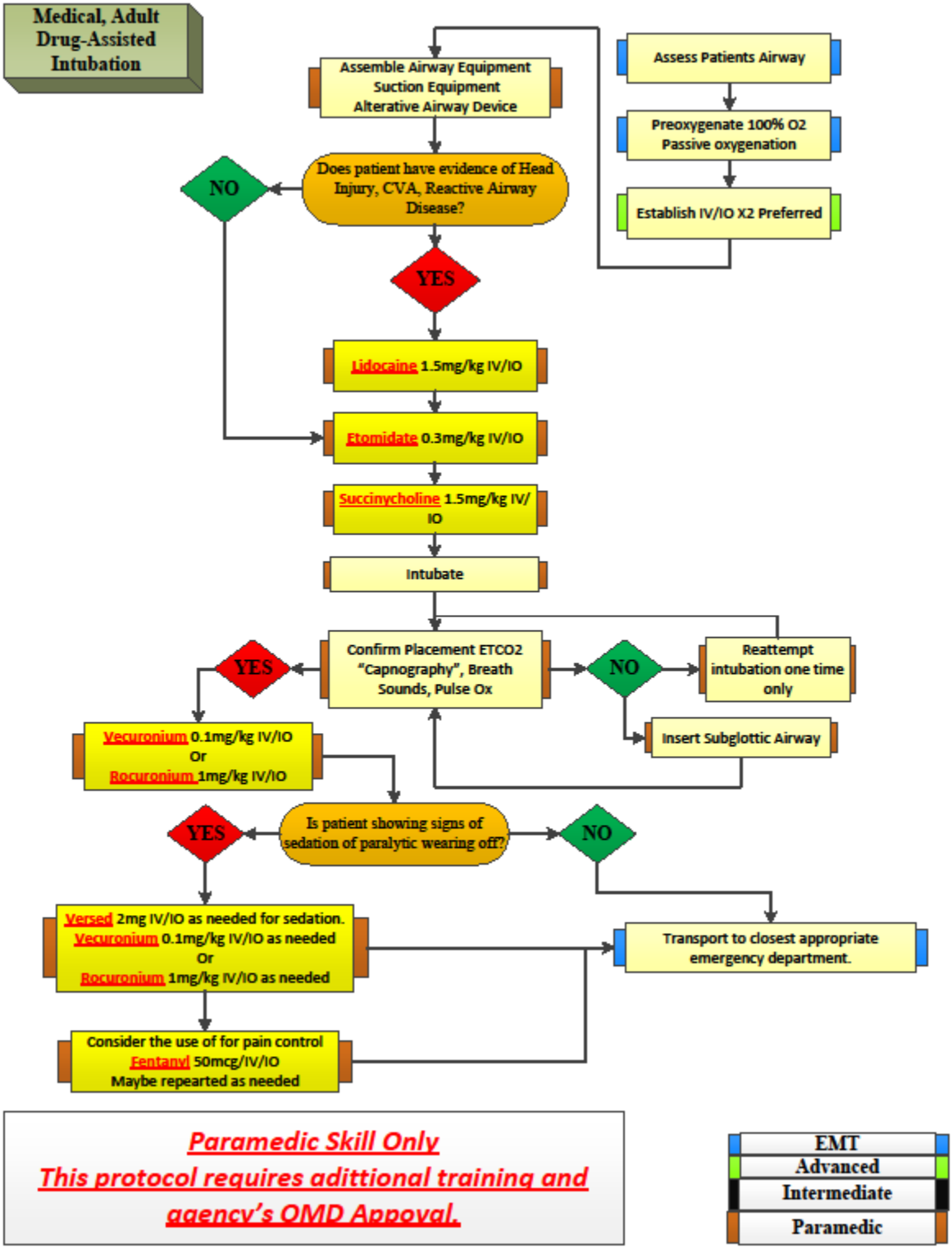
If patient is in full arrest BLS should request ALS assistance as soon as possible.

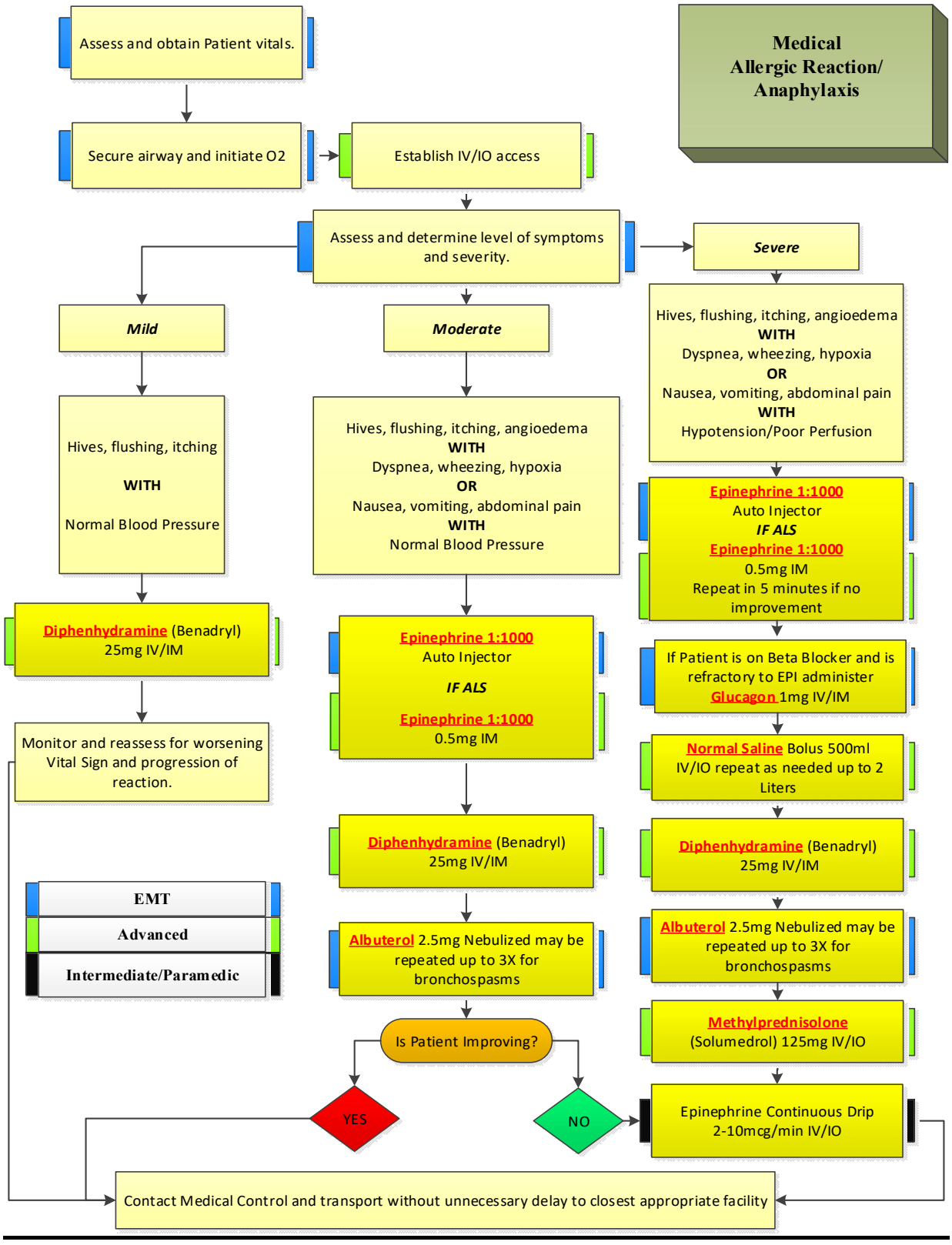
BLS crew should not wait on scene for ALS crew meet them enroute to the hospital.


Cardiac Arrest
V-FIB/Pulseless V-TACH
Immediately start CPR/BLS
Attach monitor/defibrillator as soon as possible.
Was arrest witnessed?
YES
NO
Give 5 cycles of CPR (2 minutes) of 30 compressions an 2 breaths.
Check Rhythm
V-Tach/V-Fib
Check Pulse
NO
YES
Go to V-Tach with Pulse Algorithm
Continue CPR while defibrillator is charging.
Deliver 1 SHOCK at 360J monophasic, 200J biphasic if manufactures setting is unknown.
If manufactures setting is known follow manufactures settings.
Resume CPR
When IV/IO is established administer:
EPINEPHRINE 1:10,000 1mg IV/IO may be repeated every 3 to 5 minutes.
Insure that Epinephrine is administered within 5 minutes.
Secure Airway and initiate O2 based on level of certification.
Apply End Tidal Capnography
Resume CPR
Continue CPR while defibrillator is charging.
Deliver 1 SHOCK at 360J monophasic, 200J biphasic if manufactures setting is unknown.
If manufactures setting is known follow manufactures settings.
Resume CPR
Administer:
AMIODARONE 300mg IV/IO first dose, may be repeated with 2nd dose of 150mg IV/IO in 3 to 5 minutes.
OR
LIDOCAINE 1-1.5mg/kg IV/IO may be repeated every 3 to 5 minutes to max dose of 3mg/kg.
AMIODARONE IS THE PREFERED DRUG BY AHA
If pulse returns begin postresuscitation care, start LIDOCAINE OR AMIODARONE infusion.
Consider:
MAGNESIUM 2g IV/IO for Torsades De Points
SODIUM BICARBONATE 1mEq/kg up to 100mEq

MEDICAL

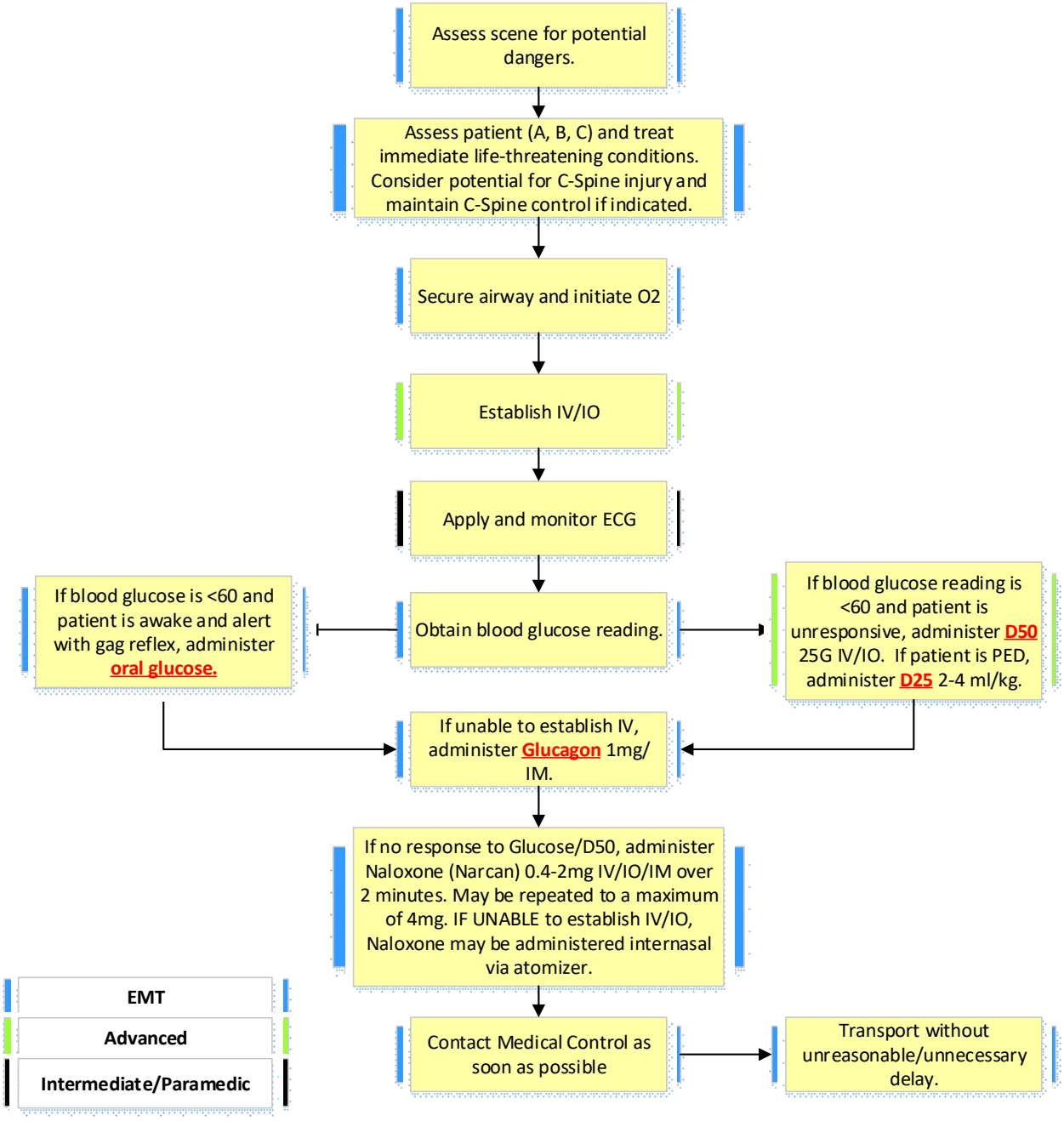
RELATED EMERGENCIES

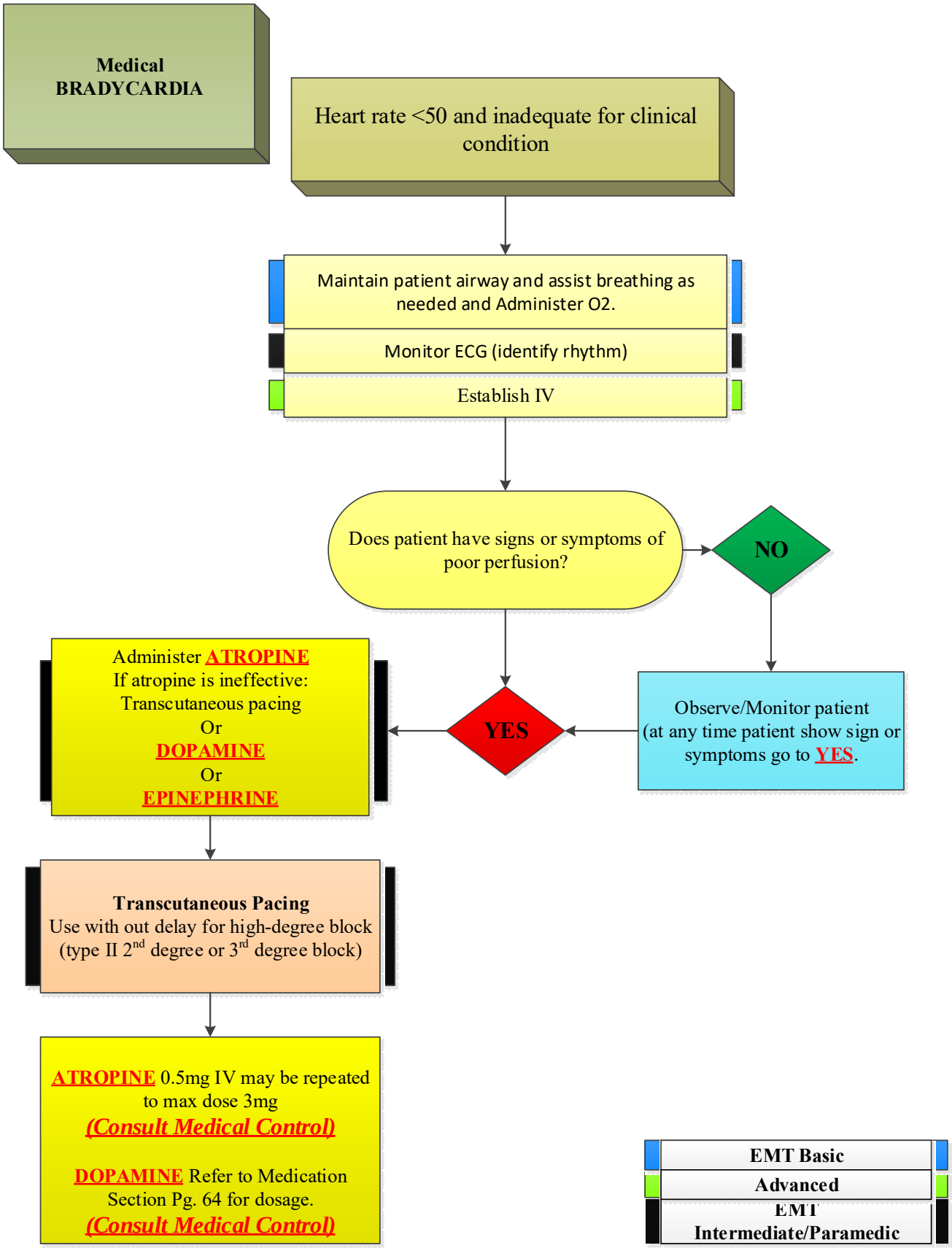

Medical, Adult Drug-Assisted Intubation
Assemble Airway Equipment
Suction Equipment
Alterative Airway Device
Assess Patients Airway
Preoxygenate 100% O2
Passive oxygenation
Establish IV/IO X2 Preferred
Does patient have evidence of Head Injury, CVA, Reactive Airway Disease?
NO
YES
Lidocaine 1.5mg/kg IV/IO
Etomidate 0.3mg/kg IV/IO
Succinycholine 1.5mg/kg IV/IO
Intubate
Confirm Placement ETCO2 "Capnography", Breath Sounds, Pulse Ox
YES
NO
Reattempt intubation one time only
Insert Subglottic Airway
Vecuronium 0.1mg/kg IV/IO
Or
Rocuronium 1mg/kg IV/IO
Is patient showing signs of sedation of paralytic wearing off?
YES
NO
Versed 2mg IV/IO as needed for sedation.
Vecuronium 0.1mg/kg IV/IO as needed
Or
Rocuronium 1mg/kg IV/IO as needed
Transport to closest appropriate emergency department.
Consider the use of for pain control
Fentanyl 50mcg/IV/IO
Maybe repearted as needed
Paramedic Skill Only
This protocol requires adittional training and agency's OMD Appoval.
EMT
Advanced
Intermediate
Paramedic

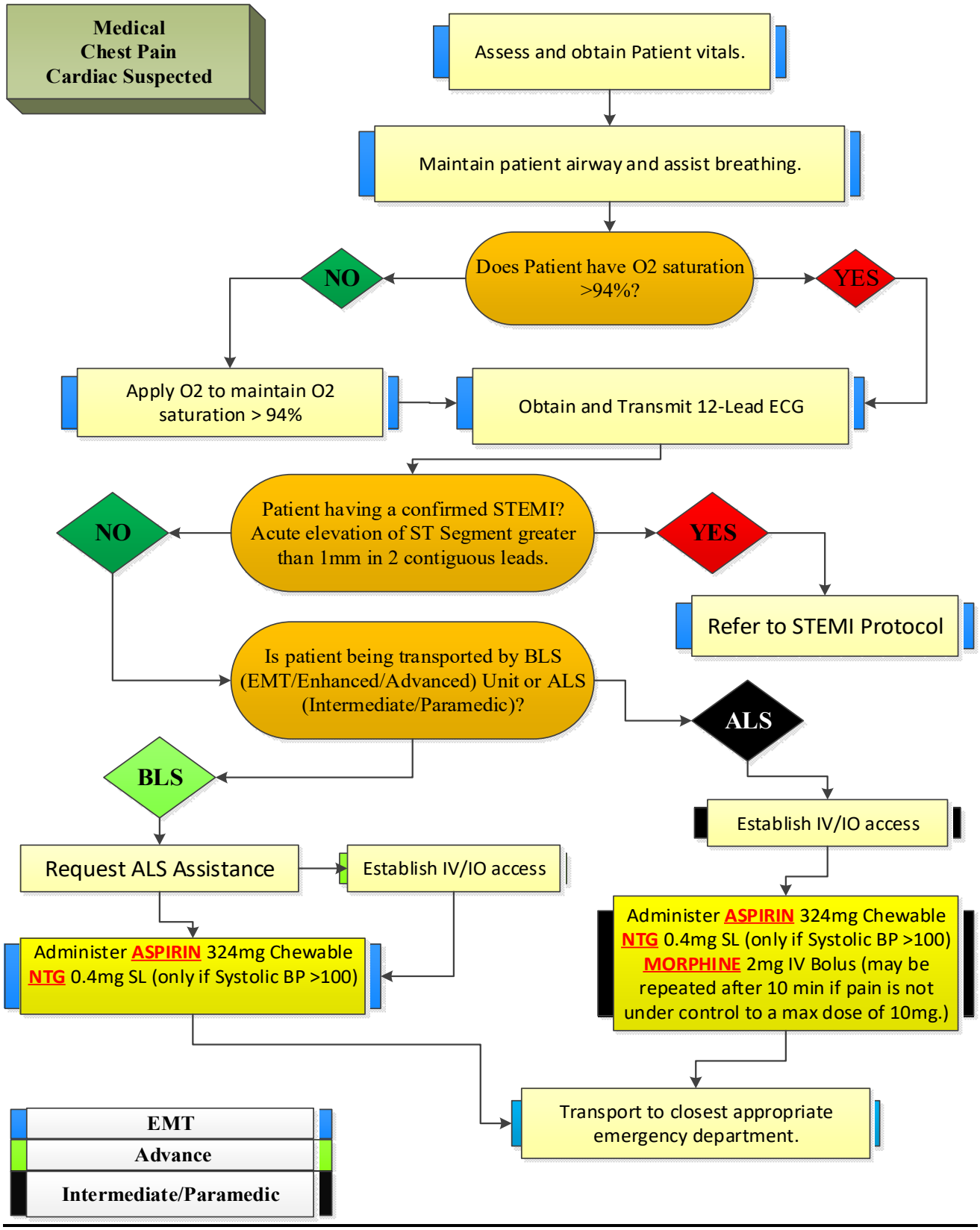

Medical
Allergic Reaction/
Anaphylaxis
Assess and obtain Patient vitals.
Secure airway and initiate O2
Establish IV/IO access
Assess and determine level of symptoms and severity.
Mild
Moderate
Severe
Hives, flushing, itching
WITH
Normal Blood Pressure
Hives, flushing, itching, angioedema
WITH
Dyspnea, wheezing, hypoxia
OR
Nausea, vomiting, abdominal pain
WITH
Normal Blood Pressure
Hives, flushing, itching, angioedema
WITH
Dyspnea, wheezing, hypoxia
OR
Nausea, vomiting, abdominal pain
WITH
Hypotension/Poor Perfusion
Diphenhydramine (Benadryl) 25mg IV/IM
Monitor and reassess for worsening Vital Sign and progression of reaction.
Epinephrine 1:1000 Auto Injector
IF ALS
Epinephrine 1:1000 0.5mg IM
Diphenhydramine (Benadryl) 25mg IV/IM
Albuterol 2.5mg Nebulized may be repeated up to 3X for bronchospasms
Epinephrine 1:1000 Auto Injector
IF ALS
Epinephrine 1:1000 0.5mg IM
Repeat in 5 minutes if no improvement
If Patient is on Beta Blocker and is refractory to EPI administer Glucagon 1mg IV/IM
Normal Saline Bolus 500ml IV/IO repeat as needed up to 2 Liters
Diphenhydramine (Benadryl) 25mg IV/IM
Albuterol 2.5mg Nebulized may be repeated up to 3X for bronchospasms
Methylprednisolone (Solumedrol) 125mg IV/IO
EMT
Advanced
Intermediate/Paramedic
Is Patient Improving?
YES
NO
Epinephrine Continuous Drip 2-10mcg/min IV/IO
Contact Medical Control and transport without unnecessary delay to closest appropriate facility

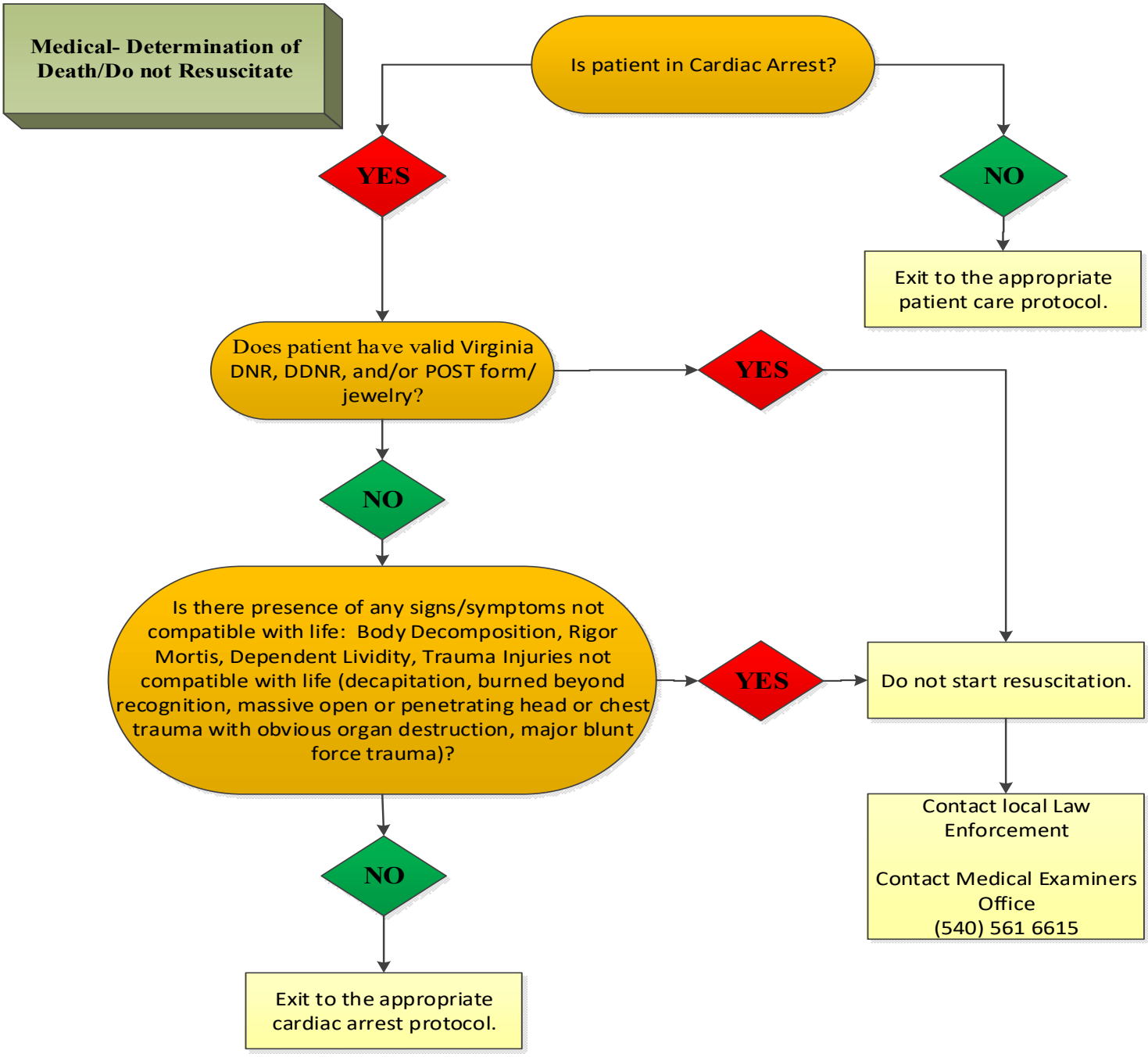
Medical
Altered Mental Status

There are many factors which may cause a change in mental status. Causes range from benign problems to potentially life-threatening cardiopulmonary or central nervous system disorders. Some of the more common causes of altered mental status are: head injury, seizures, hypoxia, acidosis, diabetes, overdose, metabolic abnormalities, meningitis, infections, ETOH, and psychological disturbances. Frequently, a diabetic patient may present with an altered mental status. This may be due to hypoglycemia or hyperglycemia; however, the patient often is unable to give any history and the physical assessment may be inconclusive. The prehospital goal is to maintain stable vital signs, protect the patient's airway and C-spine, and assess for possible causes. Get as complete a history as possible. Treat any potentially reversible cause such as narcotic overdose or hypoglycemia.




Medical
BRADYCARDIA
Heart rate <50 and inadequate for clinical condition
Maintain patient airway and assist breathing as needed and Administer O2.
Monitor ECG (identify rhythm)
Establish IV
Does patient have signs or symptoms of poor perfusion?
NO
YES
Observe/Monitor patient (at any time patient show sign or symptoms go to YES.
Administer ATROPINE
If atropine is ineffective:
Transcutaneous pacing
Or
DOPAMINE
Or
EPINEPHRINE
Transcutaneous Pacing
Use with out delay for high-degree block (type II 2nd degree or 3rd degree block)
ATROPINE 0.5mg IV may be repeated to max dose 3mg
(Consult Medical Control)
DOPAMINE Refer to Medication Section Pg. 64 for dosage.
(Consult Medical Control)
EMT Basic
Advanced
EMT
Intermediate/Paramedic

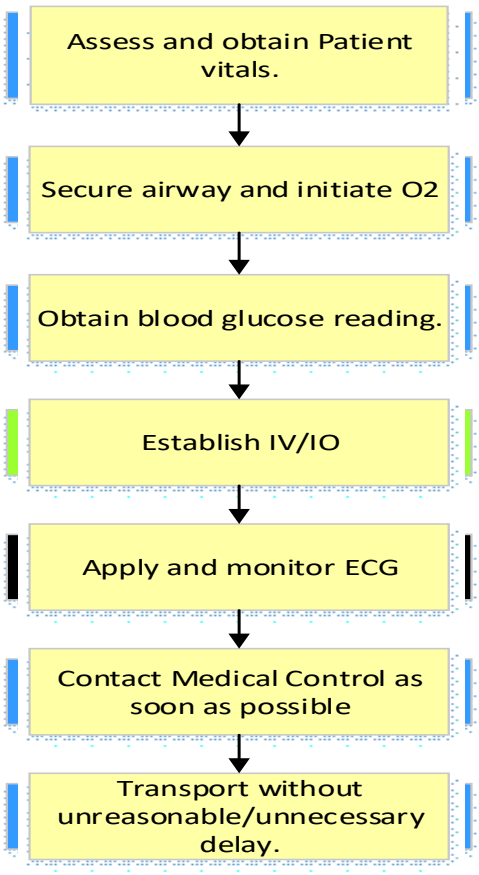

Medical
Chest Pain
Cardiac Suspected
Assess and obtain Patient vitals.
Maintain patient airway and assist breathing.
Does Patient have O2 saturation >94%?
NO
YES
Apply O2 to maintain O2 saturation > 94%
Obtain and Transmit 12-Lead ECG
Patient having a confirmed STEMI? Acute elevation of ST Segment greater than 1mm in 2 contiguous leads.
NO
YES
Refer to STEMI Protocol
Is patient being transported by BLS (EMT/Enhanced/Advanced) Unit or ALS (Intermediate/Paramedic)?
ALS
BLS
Establish IV/IO access
Request ALS Assistance
Establish IV/IO access
Administer ASPIRIN 324mg Chewable NTG 0.4mg SL (only if Systolic BP >100) MORPHINE 2mg IV Bolus (may be repeated after 10 min if pain is not under control to a max dose of 10mg.)
Administer ASPIRIN 324mg Chewable NTG 0.4mg SL (only if Systolic BP >100)
Transport to closest appropriate emergency department.
EMT
Advance
Intermediate/Paramedic



If bystander or first responder has initiated CPR or automated defibrillation prior to EMS arrival, and any of the above criteria (signs of death) are present, EMS may discontinue CPR and other interventions.

If doubt exists, start resuscitation immediately. Once resuscitation is initiated, continue resuscitation efforts until patient care is transferred to receiving hospital staff.

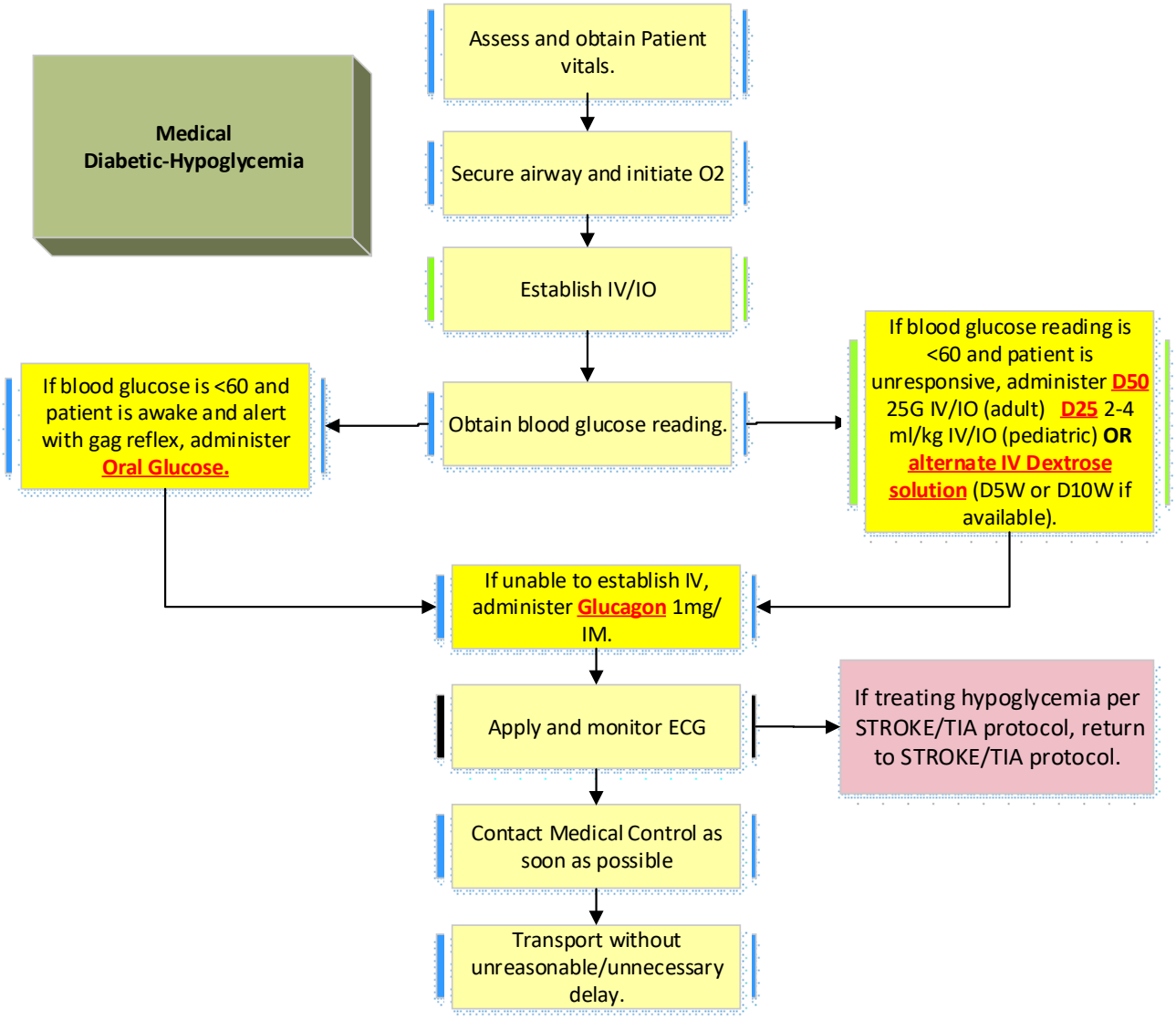
Medical
Diabetic-Hyperglycemia



EMT

Advanced

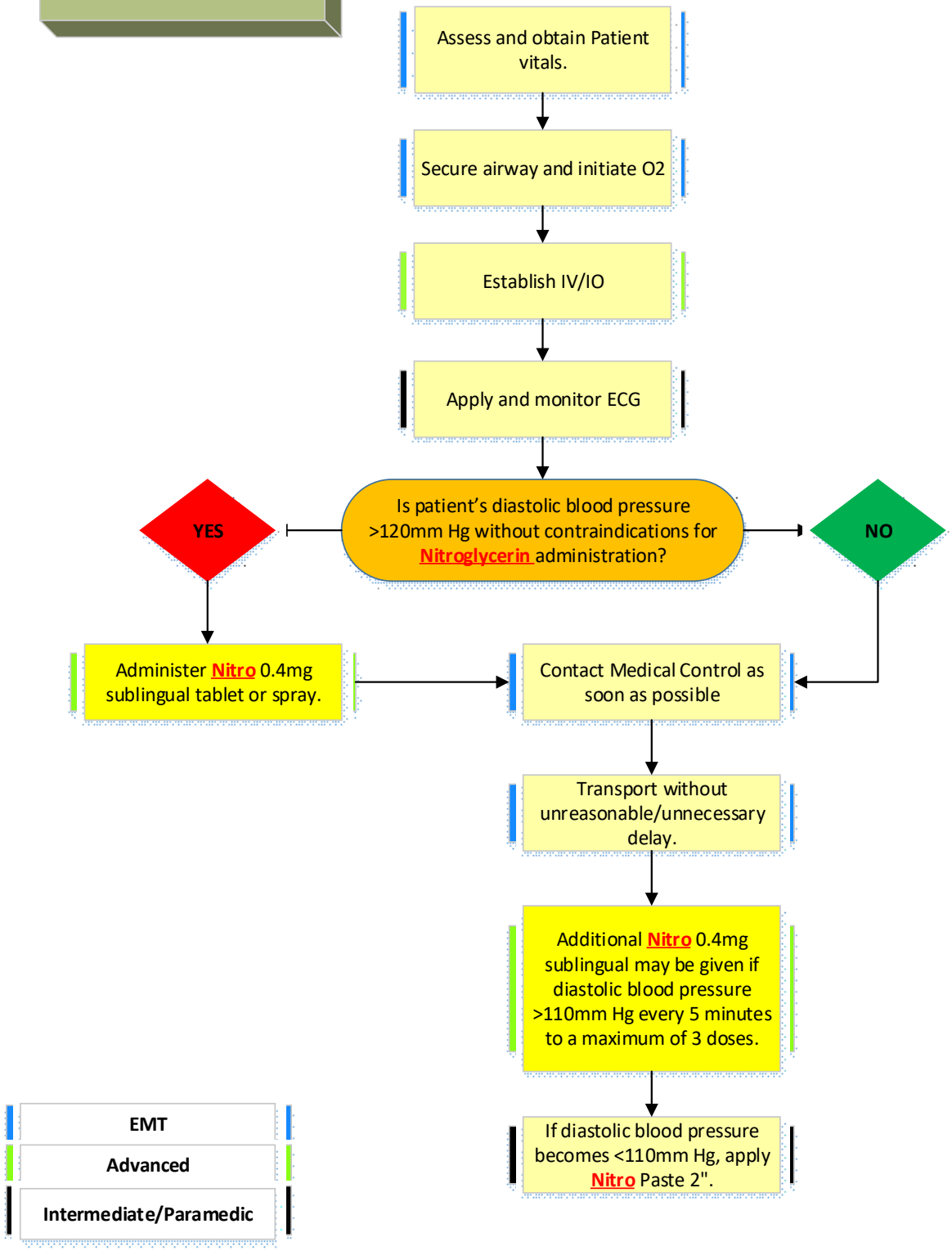
Intermediate/Paramedic



EMT
Advanced
Intermediate/Paramedic

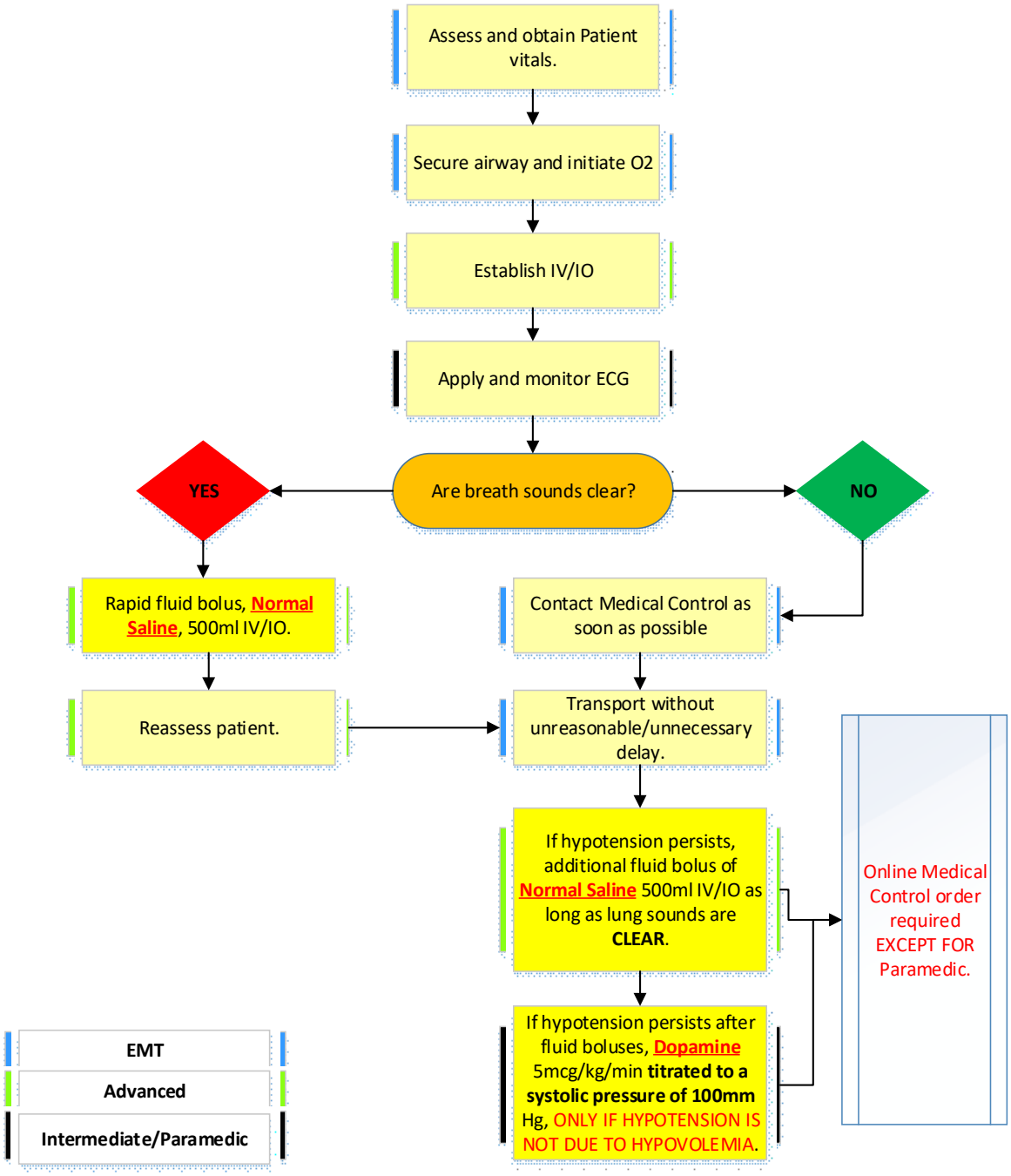
Medical Hypertension

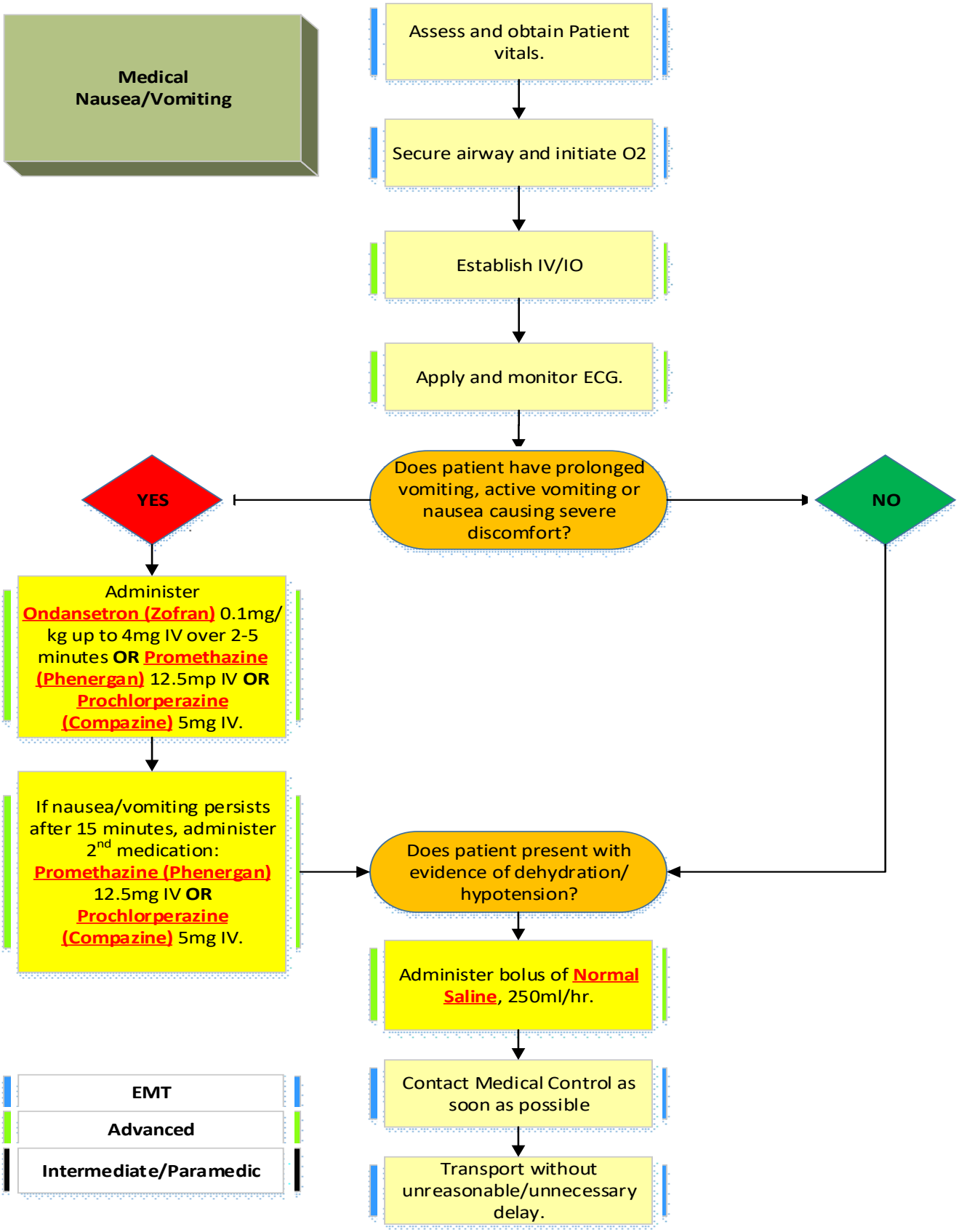
There are a number of causes of Hypertensive Crisis. In the patient who has a diastolic blood pressure >120mm hg, and who is symptomatic: (dizziness, headache, neurological deficits, chest pain, or dyspnea) must be treat for Hypertension.

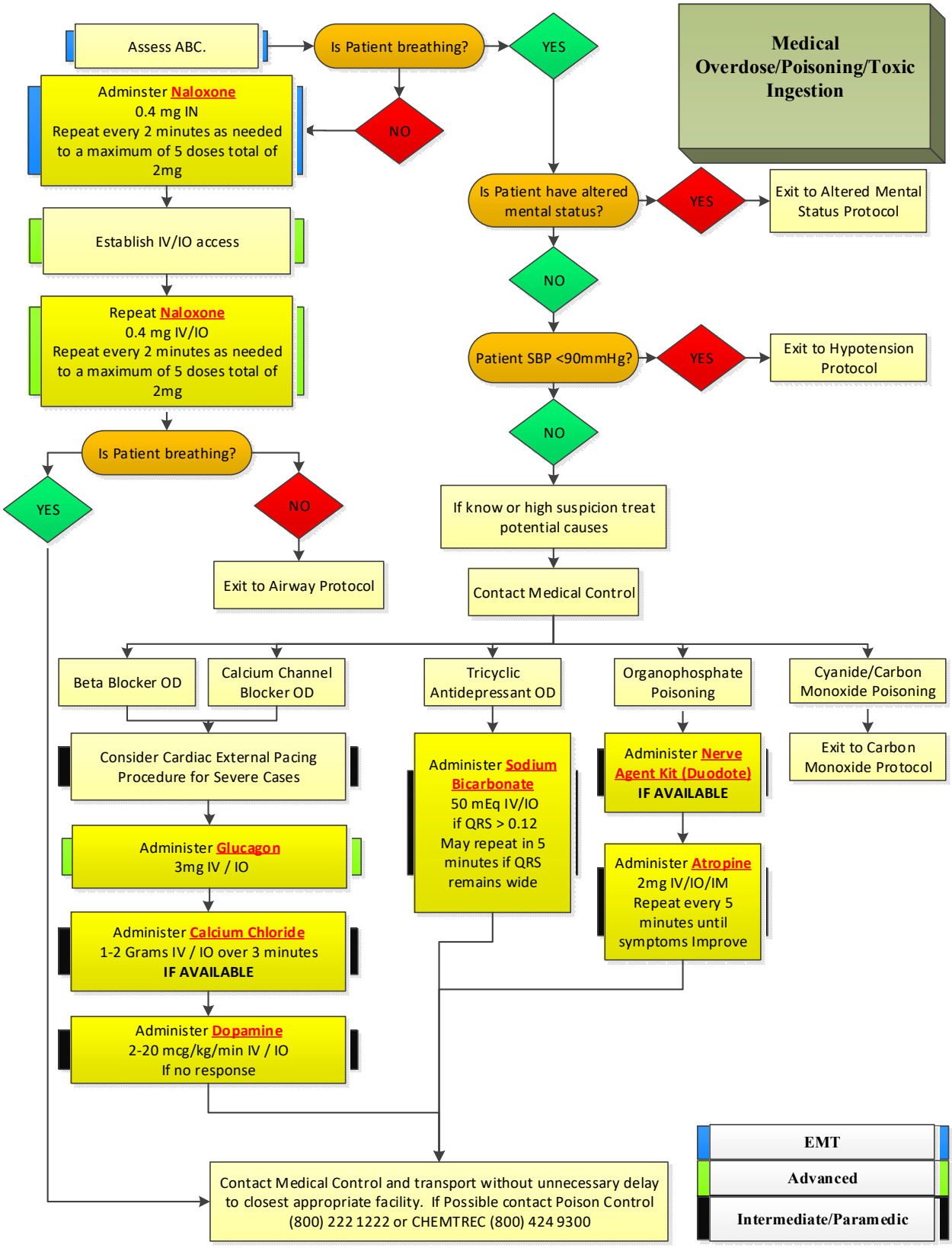


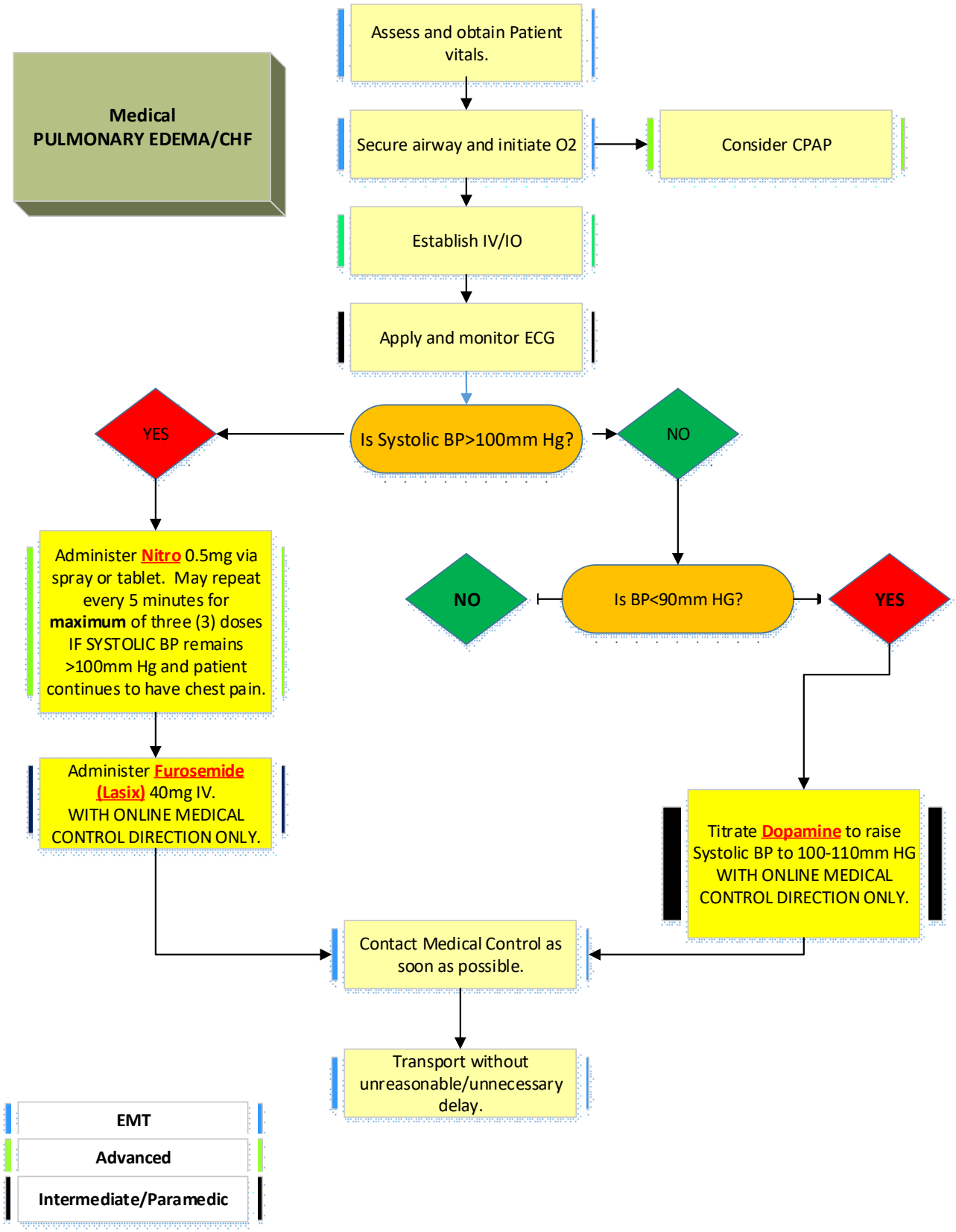
Medical Hypotension/Shock (Non-Trauma)

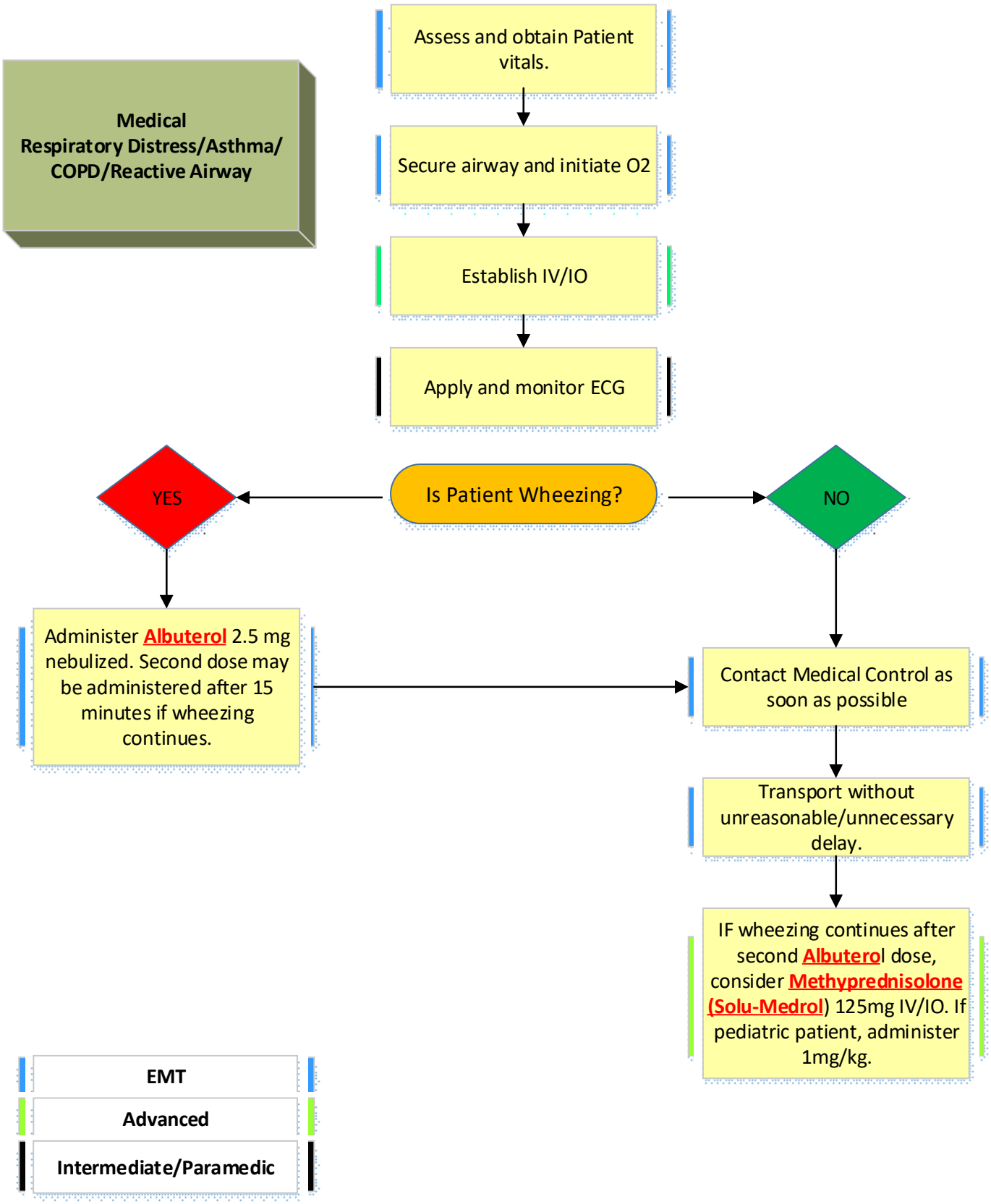
There are many causes of hypotension. This protocol offers a way to attempt to deal with the many causes of hypotension when the specific cause is unknown. It is always best to know the specific reason for hypotension, but in the field this knowledge may be difficult to obtain. Ultimately the causes of hypotension will be: Volume loss, ineffective pumping action of the heart, loss of control over blood vessel size, or a mixture of these reasons. Hypotension shall be considered as a systolic BP of <80mm Hg, or <100mm Hg in the presence of other symptoms of shock (diaphoresis, nausea, decreased level of consciousness, weak and thready pulse, delayed capillary refill).




Medical
Nausea/Vomiting
Assess and obtain Patient vitals.
Secure airway and initiate O2
Establish IV/IO
Apply and monitor ECG.
Does patient have prolonged vomiting, active vomiting or nausea causing severe discomfort?
YES
NO
Administer Ondansetron (Zofran) 0.1mg/kg up to 4mg IV over 2-5 minutes OR Promethazine (Phenergan) 12.5mp IV OR Prochlorperazine (Compazine) 5mg IV.
If nausea/vomiting persists after 15 minutes, administer 2nd medication: Promethazine (Phenergan) 12.5mg IV OR Prochlorperazine (Compazine) 5mg IV.
Does patient present with evidence of dehydration/ hypotension?
Administer bolus of Normal Saline, 250ml/hr.
Contact Medical Control as soon as possible
Transport without unreasonable/unnecessary delay.
EMT
Advanced
Intermediate/Paramedic


Medical Overdose/Poisoning/Toxic Ingestion
Assess ABC.
Is Patient breathing?
YES
NO
Adminster Naloxone 0.4 mg IN Repeat every 2 minutes as needed to a maximum of 5 doses total of 2mg
Establish IV/IO access
Repeat Naloxone 0.4 mg IV/IO Repeat every 2 minutes as needed to a maximum of 5 doses total of 2mg
Is Patient breathing?
YES
NO
Exit to Airway Protocol
Is Patient have altered mental status?
YES
Exit to Altered Mental Status Protocol
NO
Patient SBP <90mmHg?
YES
Exit to Hypotension Protocol
NO
If know or high suspicion treat potential causes
Contact Medical Control
Beta Blocker OD
Calcium Channel Blocker OD
Consider Cardiac External Pacing Procedure for Severe Cases
Administer Glucagon 3mg IV / IO
Administer Calcium Chloride 1-2 Grams IV / IO over 3 minutes IF AVAILABLE
Administer Dopamine 2-20 mcg/kg/min IV / IO If no response
Tricyclic Antidepressant OD
Administer Sodium Bicarbonate 50 mEq IV/IO if QRS > 0.12 May repeat in 5 minutes if QRS remains wide
Organophosphate Poisoning
Administer Nerve Agent Kit (Duodote) IF AVAILABLE
Administer Atropine 2mg IV/IO/IM Repeat every 5 minutes until symptoms Improve
Cyanide/Carbon Monoxide Poisoning
Exit to Carbon Monoxide Protocol
Contact Medical Control and transport without unnecessary delay to closest appropriate facility. If Possible contact Poison Control (800) 222 1222 or CHEMTREC (800) 424 9300
EMT
Advanced
Intermediate/Paramedic


Medical
PULMONARY EDEMA/CHF
Assess and obtain Patient vitals.
Secure airway and initiate O2
Consider CPAP
Establish IV/IO
Apply and monitor ECG
Is Systolic BP>100mm Hg?
YES
NO
Administer Nitro 0.5mg via spray or tablet. May repeat every 5 minutes for maximum of three (3) doses IF SYSTOLIC BP remains >100mm Hg and patient continues to have chest pain.
Is BP<90mm HG?
NO
YES
Administer Furosemide (Lasix) 40mg IV. WITH ONLINE MEDICAL CONTROL DIRECTION ONLY.
Titrate Dopamine to raise Systolic BP to 100-110mm HG WITH ONLINE MEDICAL CONTROL DIRECTION ONLY.
Contact Medical Control as soon as possible.
Transport without unreasonable/unnecessary delay.
EMT
Advanced
Intermediate/Paramedic


Medical
Respiratory Distress/Asthma/ COPD/Reactive Airway
Assess and obtain Patient vitals.
Secure airway and initiate O2
Establish IV/IO
Apply and monitor ECG
Is Patient Wheezing?
YES
NO
Administer Albuterol 2.5 mg nebulized. Second dose may be administered after 15 minutes if wheezing continues.
Contact Medical Control as soon as possible
Transport without unreasonable/unnecessary delay.
IF wheezing continues after second Albuterol dose, consider Methyprednisolone (Solu-Medrol) 125mg IV/IO. If pediatric patient, administer 1mg/kg.
EMT
Advanced
Intermediate/Paramedic

Medical Seizures

Assess and obtain Patient vitals.

Secure airway and initiate O2

Protect C-Spine. Place patient on their side. Prep suction for use if patient is vomiting.

Establish IV/IO

Apply and monitor ECG.

Obtain blood glucose reading.

If blood glucose reading is <60 and patient is unresponsive, administer **D50** 25G IV/IO. If patient is PED, administer **D25** 2-4 ml/kg IV/IO.

If unable to establish IV, administer **Glucagon** 1mg/ IM.

Administer **Diazepam (Valium)** 2-10mg IV/IO. Repeat every 2 minutes if patient is still in active seizure until seizure stops OR maximum dose of 20mg is given. Pediatric dose: 0.5mg/ kg pararectally if unable to start IV or 0.25mg/kg IV/IO.

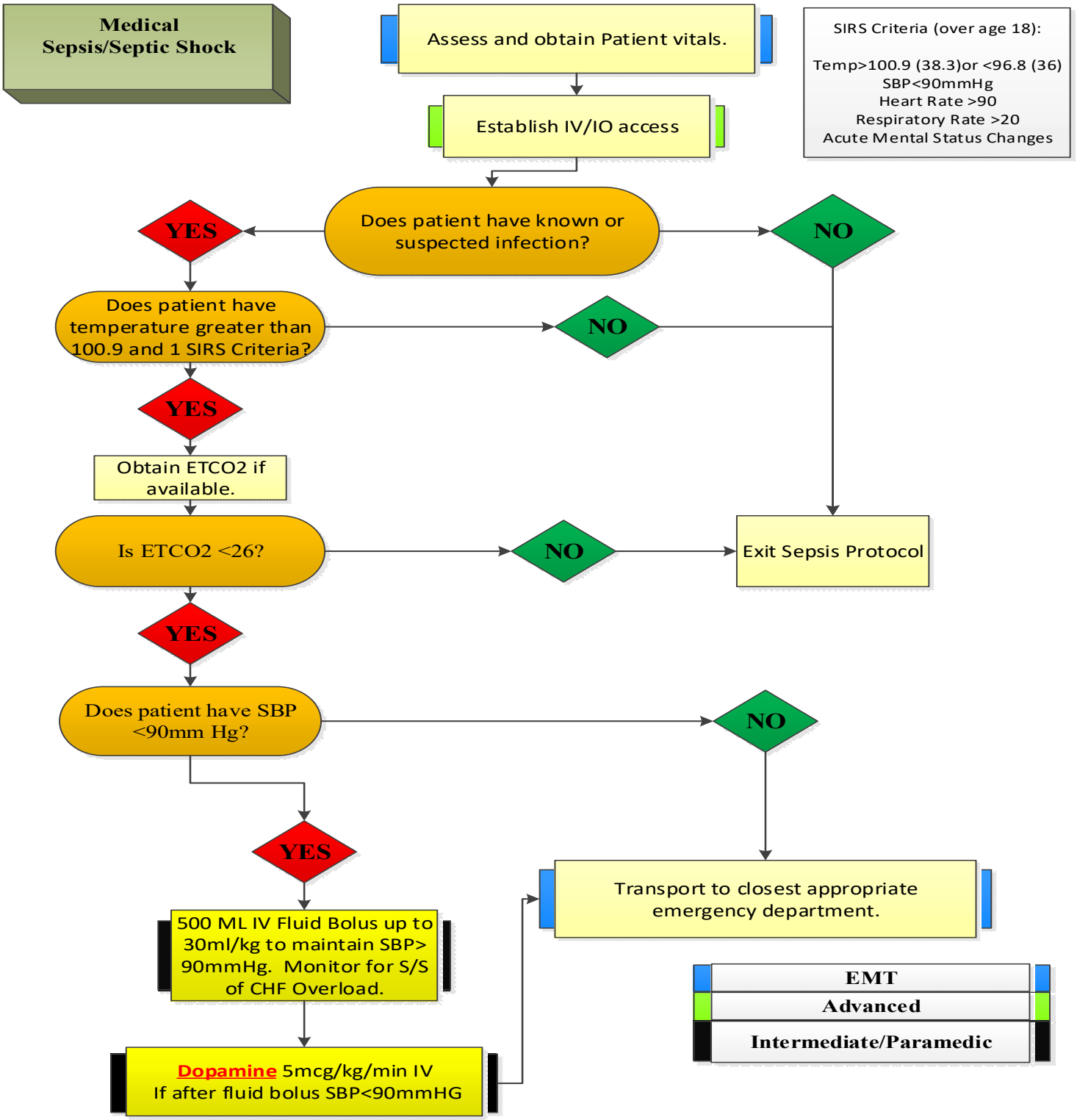
Contact Medical Control as soon as possible

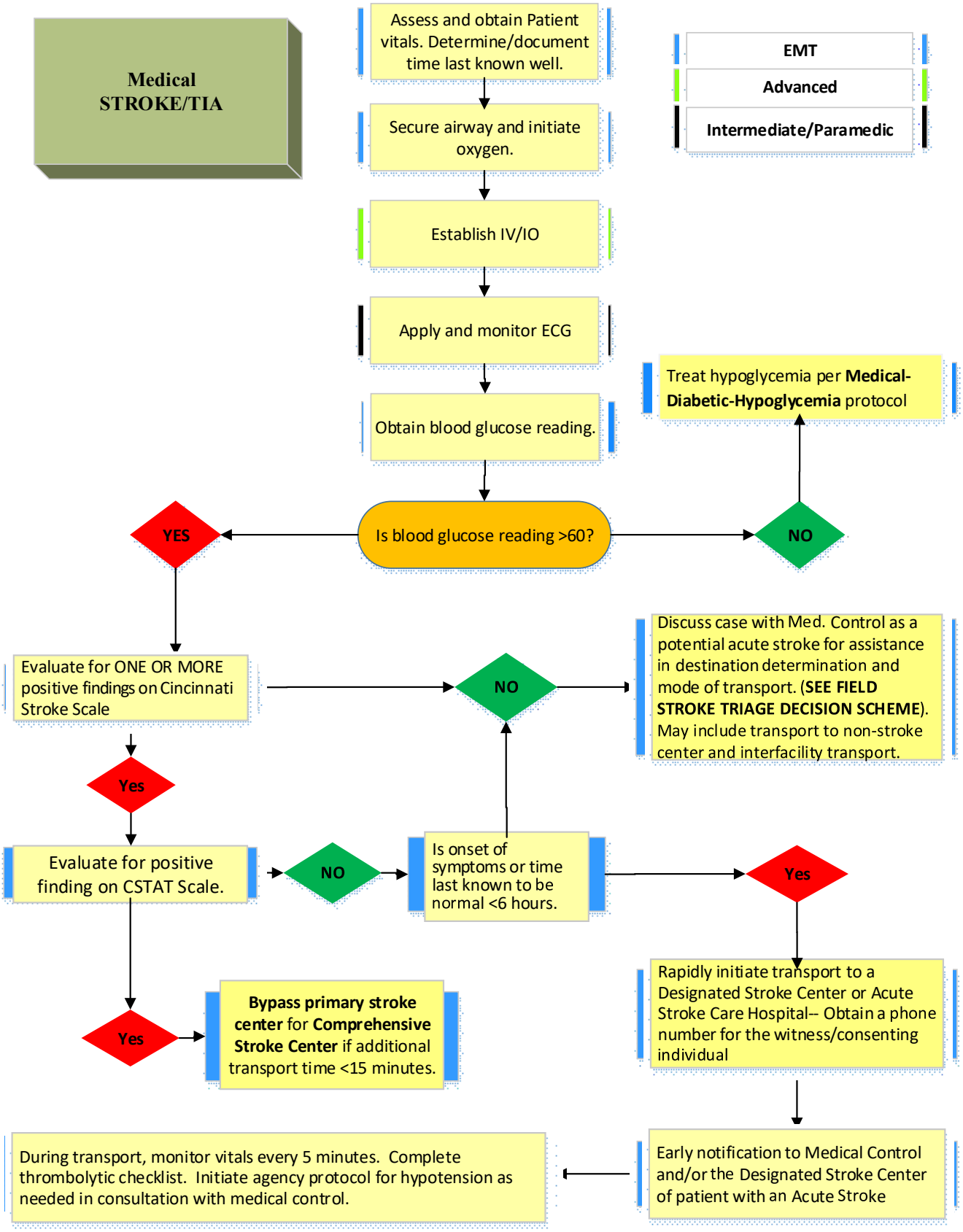
Transport without unreasonable/unnecessary delay.

EMT

Advanced

Intermediate/Paramedic


Medical
Sepsis/Septic Shock
Assess and obtain Patient vitals.
Establish IV/IO access
SIRS Criteria (over age 18):
Temp>100.9 (38.3)or <96.8 (36)
SBP<90mmHg
Heart Rate >90
Respiratory Rate >20
Acute Mental Status Changes
Does patient have known or suspected infection?
YES
NO
Does patient have temperature greater than 100.9 and 1 SIRS Criteria?
NO
YES
Obtain ETCO2 if available.
Is ETCO2 <26?
NO
Exit Sepsis Protocol
YES
Does patient have SBP <90mm Hg?
NO
YES
Transport to closest appropriate emergency department.
500 ML IV Fluid Bolus up to 30ml/kg to maintain SBP> 90mmHg. Monitor for S/S of CHF Overload.
Dopamine 5mcg/kg/min IV
If after fluid bolus SBP<90mmHG
EMT
Advanced
Intermediate/Paramedic


Medical
STROKE/TIA
Assess and obtain Patient vitals. Determine/document time last known well.
Secure airway and initiate oxygen.
Establish IV/IO
Apply and monitor ECG
Obtain blood glucose reading.
Is blood glucose reading >60?
YES
NO
Treat hypoglycemia per Medical-Diabetic-Hypoglycemia protocol
EMT
Advanced
Intermediate/Paramedic
Evaluate for ONE OR MORE positive findings on Cincinnati Stroke Scale
NO
Discuss case with Med. Control as a potential acute stroke for assistance in destination determination and mode of transport. (SEE FIELD STROKE TRIAGE DECISION SCHEME). May include transport to non-stroke center and interfacility transport.
Yes
Evaluate for positive finding on CSTAT Scale.
NO
Is onset of symptoms or time last known to be normal <6 hours.
Yes
Yes
Bypass primary stroke center for Comprehensive Stroke Center if additional transport time <15 minutes.
Rapidly initiate transport to a Designated Stroke Center or Acute Stroke Care Hospital-- Obtain a phone number for the witness/consenting individual
Early notification to Medical Control and/or the Designated Stroke Center of patient with an Acute Stroke
During transport, monitor vitals every 5 minutes. Complete thrombolytic checklist. Initiate agency protocol for hypotension as needed in consultation with medical control.

Cincinnati Prehospital Stroke Scale (CPSS)

All patients suspected of having an acute stroke should undergo a formal screening algorithm such as the CPSS. Use of stroke algorithms has been shown to improve identification of acute strokes by EMS providers up to as much as 30 percent. The results of the CPSS should be noted on the prehospital medical record. ANY abnormal (positive) finding which is suspected or known to be acute in onset is considered an indicator of potential acute stroke.

F-(face)	FACIAL DROOP: Have patient smile or show teeth. (Look for asymmetry) **Normal:** Both sides of the face move equally or not at all. **Abnormal:** One side of the patient's face droops.
A-(arm)	MOTOR WEAKNESS: Arm drift (close eyes, extend arms, palms up) **Normal:** Remain extended equally, drifts equally, or does not move at all. **Abnormal:** One arm drifts down when compared with the other.
S-(speech)	"You can't teach an old dog new tricks" (repeat phrase) **Normal:** Phrase is repeated clearly and correctly. **Abnormal:** Words are slurred (dysrhythmia) or abnormal (aphasia) or none.
T-Time	Time of SYMPTOM ONSET: patient's last known normal behavior

* Results of the F.A.S.T. should be included on the patient's prehospital medical record

Cincinnati Stroke Triage Assessment Tool (CSTAT)

For a patient with a positive CPSS, next perform the CSTAT test. The CSTAT test assesses for large vessel occlusions (LVOs) and when used in conjunction with the CPSS scale has an 83-92% sensitivity in identifying LVOs. A score of 2 or more is considered a positive CSTAT. A patient with positive findings for Cincinnati Prehospital Stroke Scale without a positive C-STAT should be taken to the nearest primary stroke center. A patient with positive findings for Cincinnati Prehospital Stroke Scale AND a positive C-STAT should bypass the closest primary stroke center and be taken to the nearest comprehensive stroke center ***as long as*** the additional transport to the CSC does not exceed 15 minutes. If the additional transport exceeds 15 minutes, the patient should be taken to the closest primary stroke center.

Item	Scale Definition
Conjugate Gaze Deviation Normal: No point Abnormal: 2 points	Normal: Absent Abnormal: Present
Level of Consciousness/Follows Commands Normal: No points Abnormal: 1 point	Normal: Answers questions correctly (age or current month) AND follows commands (close eyes, open and close hands). Abnormal: Incorrectly answers at least one question AND does not follow at least one command.
Arm Weakness Normal: No Point Abnormal: 1 point	Normal: Holds arms up for 10 seconds Abnormal: Cannot hold arms (either right, left or both) up for 10 seconds before arm(s) falls to bed.

NOTE: Exclusions on this checklist are not absolute. Final decisions regarding patient eligibility for any given intervention will be determined by the receiving physician(s).

Date:_____Time:_____EMS Unit: _____

PHOTOCOPY THIS FORM AND LEAVE COPY WITH ED PHYSICIAN OR NEUROLOGIST AT BEDSIDE

Patient Name:_____Age:_____
Estimated .weight:_____lbs/kg

1. Did patient awaken with symptoms? Yes / No
2. Time last known to be normal: _____
3. Time of symptom onset: _____
4. Onset witnessed or reported by: _____
5. Witness/Family or other individual able to legally provide consent for treatment coming to Emergency Department? _____[ENCOURAGE TO DO SO].

If not, phone # where such individuals will be immediately available for calls from hospital staff to

( ) -

Cincinnati Stroke Scale Score:

Symptoms from **Cincinnati Stroke Scale** (circle abnormal findings)

ANY ONE FINDING = POSSIBLE STROKE=MINIMIZE ON SCENE TIME

FACIAL DROOP:	R	L
ARM DRIFT:	R	L
SPEECH:	slurred wrong words	mute /unable to speak

1 2 3

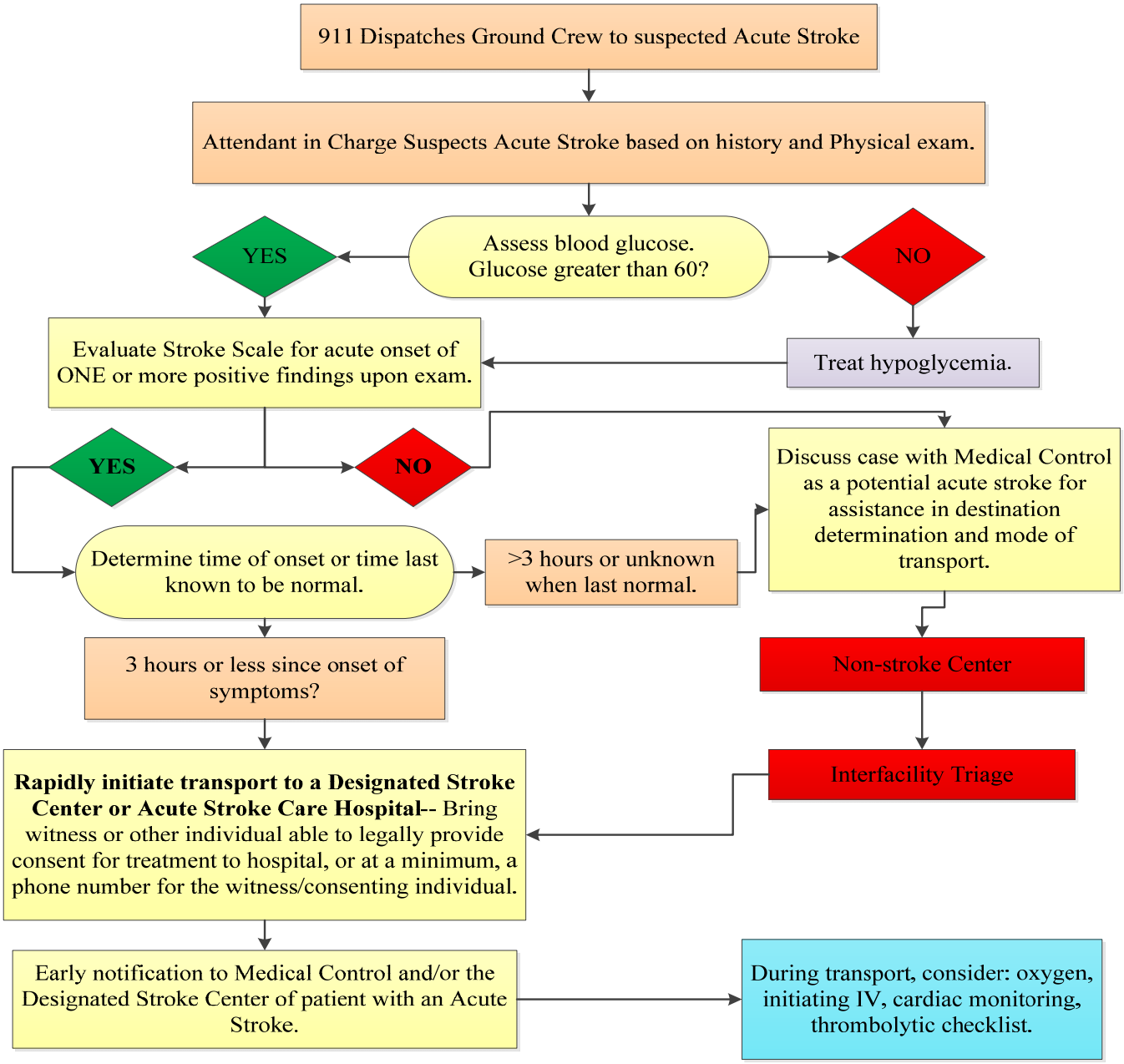
Indicate status for each

Current use of anticoagulants (e.g., warfarin sodium/Coumadin)	Yes	No	?
Has blood pressure consistently over 185/110 mm Hg	Yes	No	?
Witnessed seizure at symptom onset	Yes	No	?
intracranial hemorrhage history	Yes	No	?
GI or GU bleeding history within 3 weeks	Yes	No	?
This event within 3 months of prior stroke	Yes	No	?
This event within 3 months of serious head trauma	Yes	No	?
This event within 21 days of acute myocardial infarction	Yes	No	?
This event within 21 days of lumbar puncture (spinal tap)	Yes	No	?
This event within 14 days of major surgery or serious trauma	Yes	No	?
Is pregnant	Yes	No	?
Abnormal blood glucose level (<50). FSBS if done:			

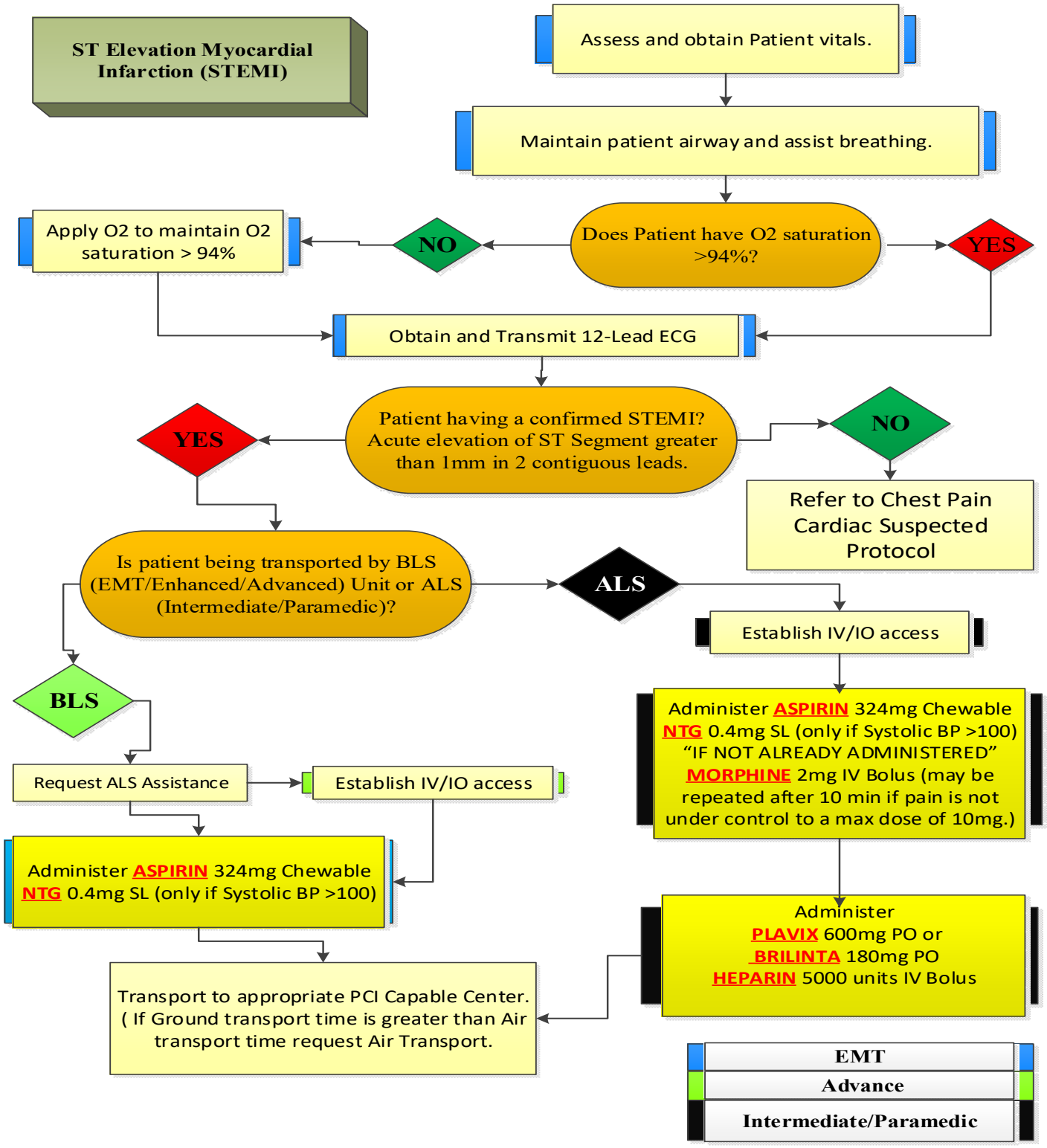
Receiving Site/Physician Printed Name: _____Time_____

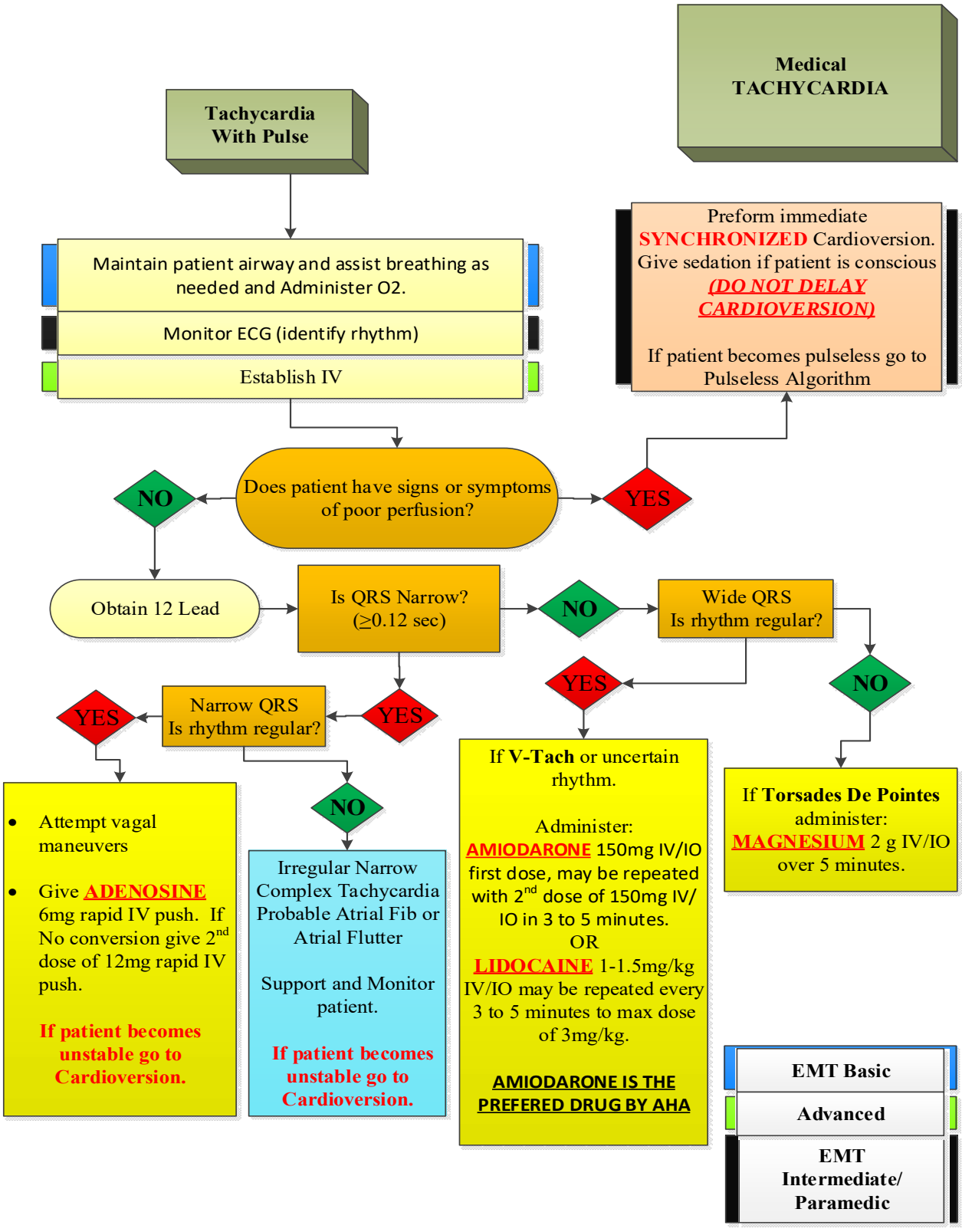
EMS Provider Name: _____Signature_____

Field Stroke Triage Decision Scheme



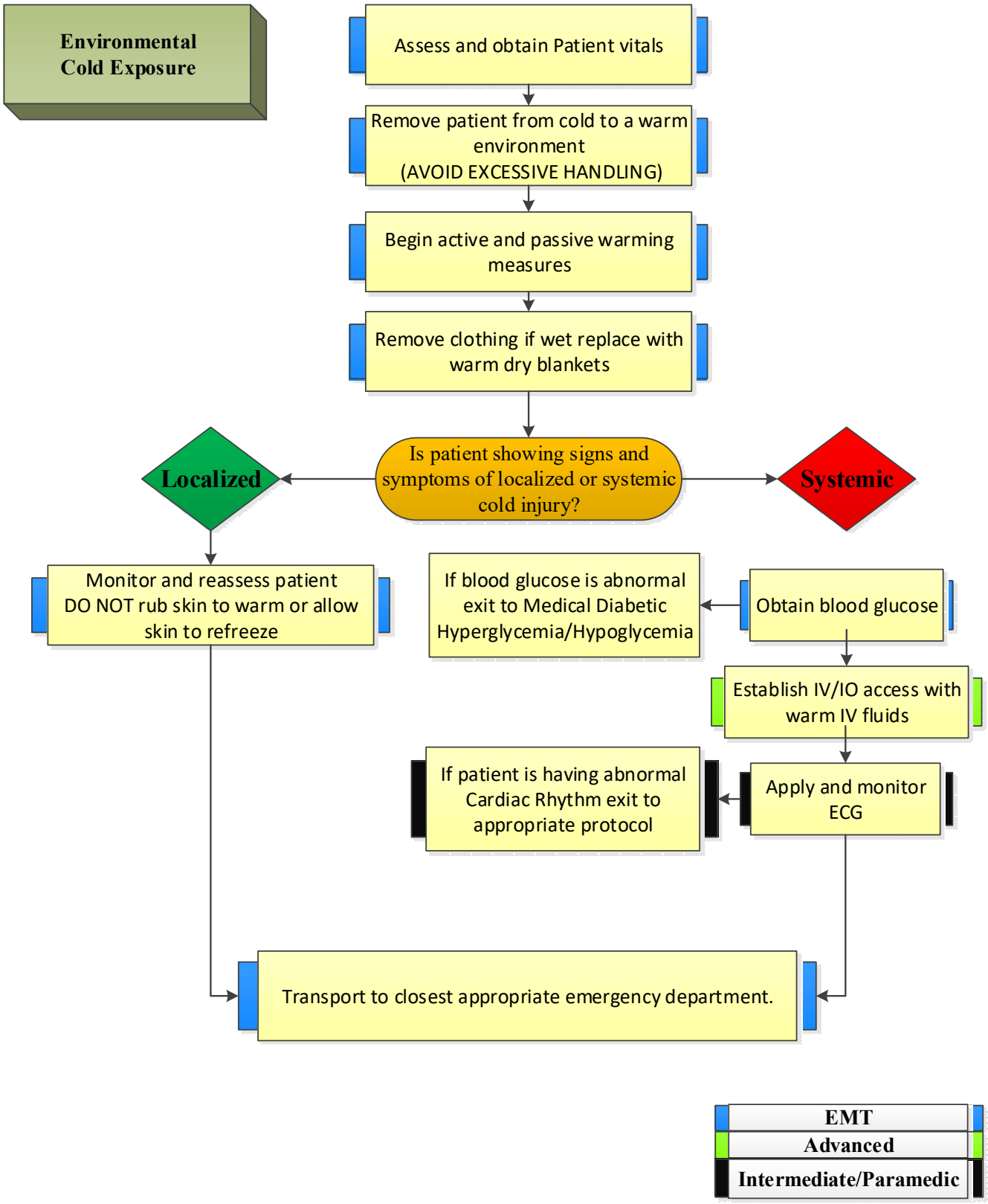
If time form symptom onset is more than 3 hours, discuss case with Medical Control as a potential acute stroke for destination determination. Recall that patients with specific acute stroke types may benfit from intercintion up to 24 hours, although the sooner an acute stroke is treated, the better the potential outcome. Based on patient time of onset and discussion with Medical Control, consider whether use of helicopter EMS will offer potential benefit to the patient, either in time to Designated Stroke Center, or for critical care management expertise. EMS does not determine whether a patient is excluded from any or all therapeutic options. Final decisions regarding patient eligibilty for any given intervention will be determined by the receiving physician(s).

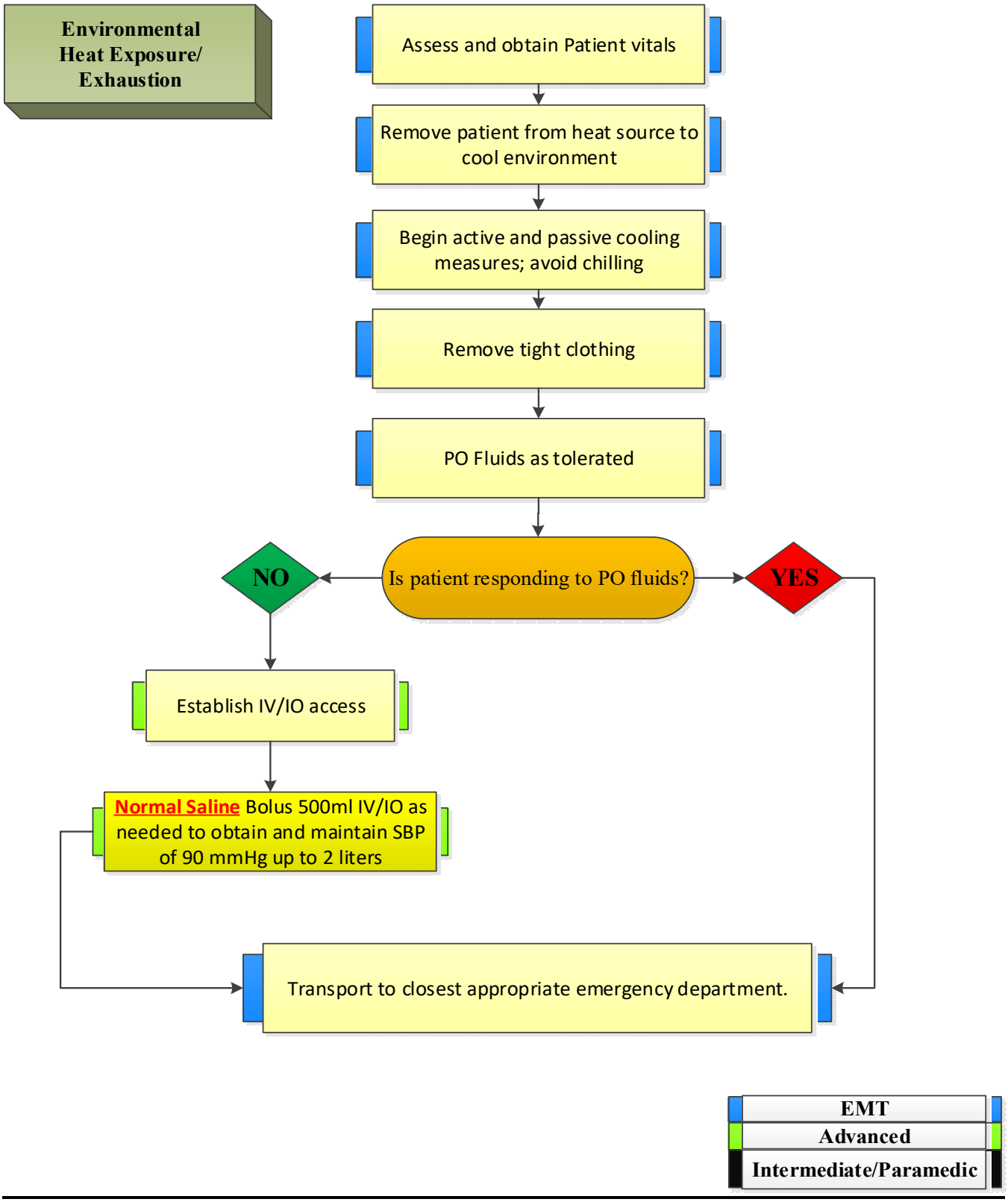

ST Elevation Myocardial Infarction (STEMI)
Assess and obtain Patient vitals.
Maintain patient airway and assist breathing.
Does Patient have O2 saturation >94%?
NO
Apply O2 to maintain O2 saturation > 94%
YES
Obtain and Transmit 12-Lead ECG
Patient having a confirmed STEMI? Acute elevation of ST Segment greater than 1mm in 2 contiguous leads.
YES
NO
Refer to Chest Pain Cardiac Suspected Protocol
Is patient being transported by BLS (EMT/Enhanced/Advanced) Unit or ALS (Intermediate/Paramedic)?
ALS
BLS
Establish IV/IO access
Administer ASPIRIN 324mg Chewable NTG 0.4mg SL (only if Systolic BP >100) "IF NOT ALREADY ADMINISTERED" MORPHINE 2mg IV Bolus (may be repeated after 10 min if pain is not under control to a max dose of 10mg.)
Request ALS Assistance
Establish IV/IO access
Administer ASPIRIN 324mg Chewable NTG 0.4mg SL (only if Systolic BP >100)
Administer PLAVIX 600mg PO or BRILINTA 180mg PO HEPARIN 5000 units IV Bolus
Transport to appropriate PCI Capable Center. (If Ground transport time is greater than Air transport time request Air Transport.
EMT
Advance
Intermediate/Paramedic


Medical
TACHYCARDIA
Tachycardia
With Pulse
Maintain patient airway and assist breathing as needed and Administer O2.
Monitor ECG (identify rhythm)
Establish IV
Preform immediate SYNCHRONIZED Cardioversion. Give sedation if patient is conscious (DO NOT DELAY CARDIOVERSION)
If patient becomes pulseless go to Pulseless Algorithm
Does patient have signs or symptoms of poor perfusion?
NO
YES
Obtain 12 Lead
Is QRS Narrow? (≥0.12 sec)
NO
Wide QRS Is rhythm regular?
YES
NO
YES
Narrow QRS Is rhythm regular?
YES
NO
Attempt vagal maneuvers
Give ADENOSINE 6mg rapid IV push. If No conversion give 2nd dose of 12mg rapid IV push.
If patient becomes unstable go to Cardioversion.
Irregular Narrow Complex Tachycardia Probable Atrial Fib or Atrial Flutter
Support and Monitor patient.
If patient becomes unstable go to Cardioversion.
If V-Tach or uncertain rhythm.
Administer:
AMIODARONE 150mg IV/IO first dose, may be repeated with 2nd dose of 150mg IV/IO in 3 to 5 minutes.
OR
LIDOCAINE 1-1.5mg/kg IV/IO may be repeated every 3 to 5 minutes to max dose of 3mg/kg.
AMIODARONE IS THE PREFERED DRUG BY AHA
If Torsades De Pointes administer:
MAGNESIUM 2 g IV/IO over 5 minutes.
EMT Basic
Advanced
EMT Intermediate/ Paramedic

ENVIRONMENTAL

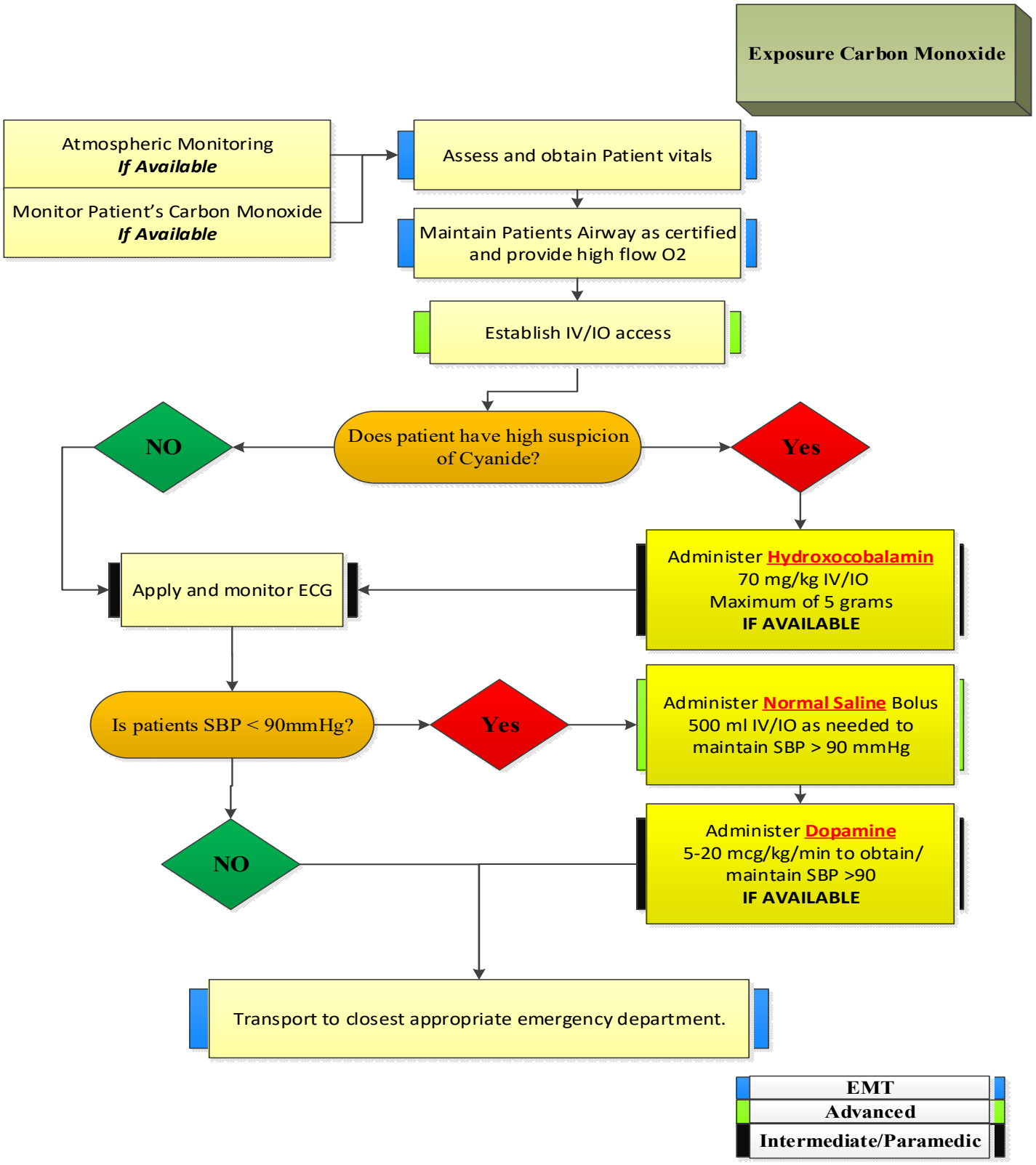
RELATED EMERGNCIES

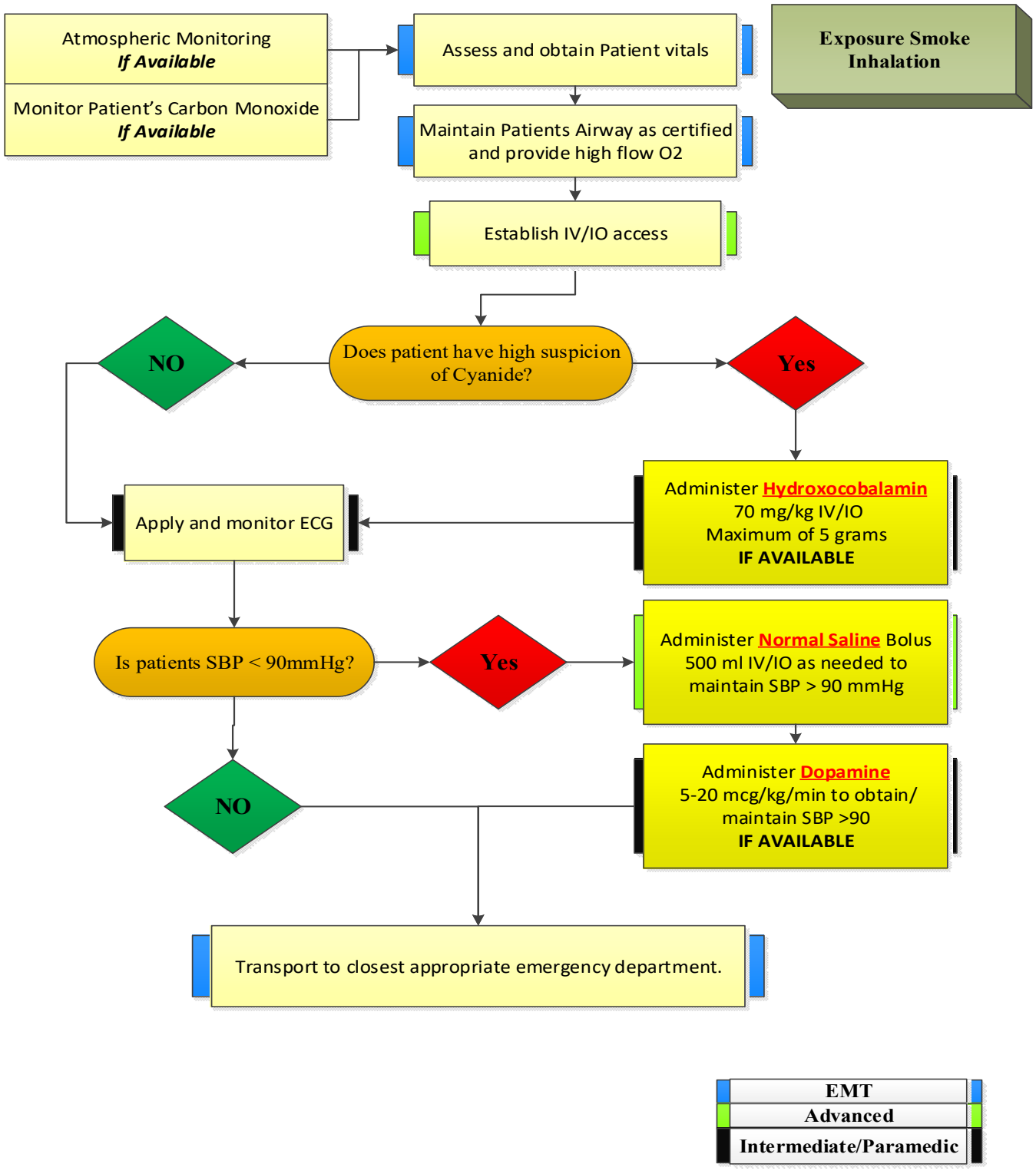

Environmental
Cold Exposure
Assess and obtain Patient vitals
Remove patient from cold to a warm environment
(AVOID EXCESSIVE HANDLING)
Begin active and passive warming measures
Remove clothing if wet replace with warm dry blankets
Is patient showing signs and symptoms of localized or systemic cold injury?
Localized
Systemic
Monitor and reassess patient
DO NOT rub skin to warm or allow skin to refreeze
If blood glucose is abnormal exit to Medical Diabetic Hyperglycemia/Hypoglycemia
Obtain blood glucose
Establish IV/IO access with warm IV fluids
If patient is having abnormal Cardiac Rhythm exit to appropriate protocol
Apply and monitor ECG
Transport to closest appropriate emergency department.
EMT
Advanced
Intermediate/Paramedic


Environmental Heat Exposure/ Exhaustion
Assess and obtain Patient vitals
Remove patient from heat source to cool environment
Begin active and passive cooling measures; avoid chilling
Remove tight clothing
PO Fluids as tolerated
Is patient responding to PO fluids?
NO
YES
Establish IV/IO access
Normal Saline Bolus 500ml IV/IO as needed to obtain and maintain SBP of 90 mmHg up to 2 liters
Transport to closest appropriate emergency department.
EMT
Advanced
Intermediate/Paramedic

EXPOSURE

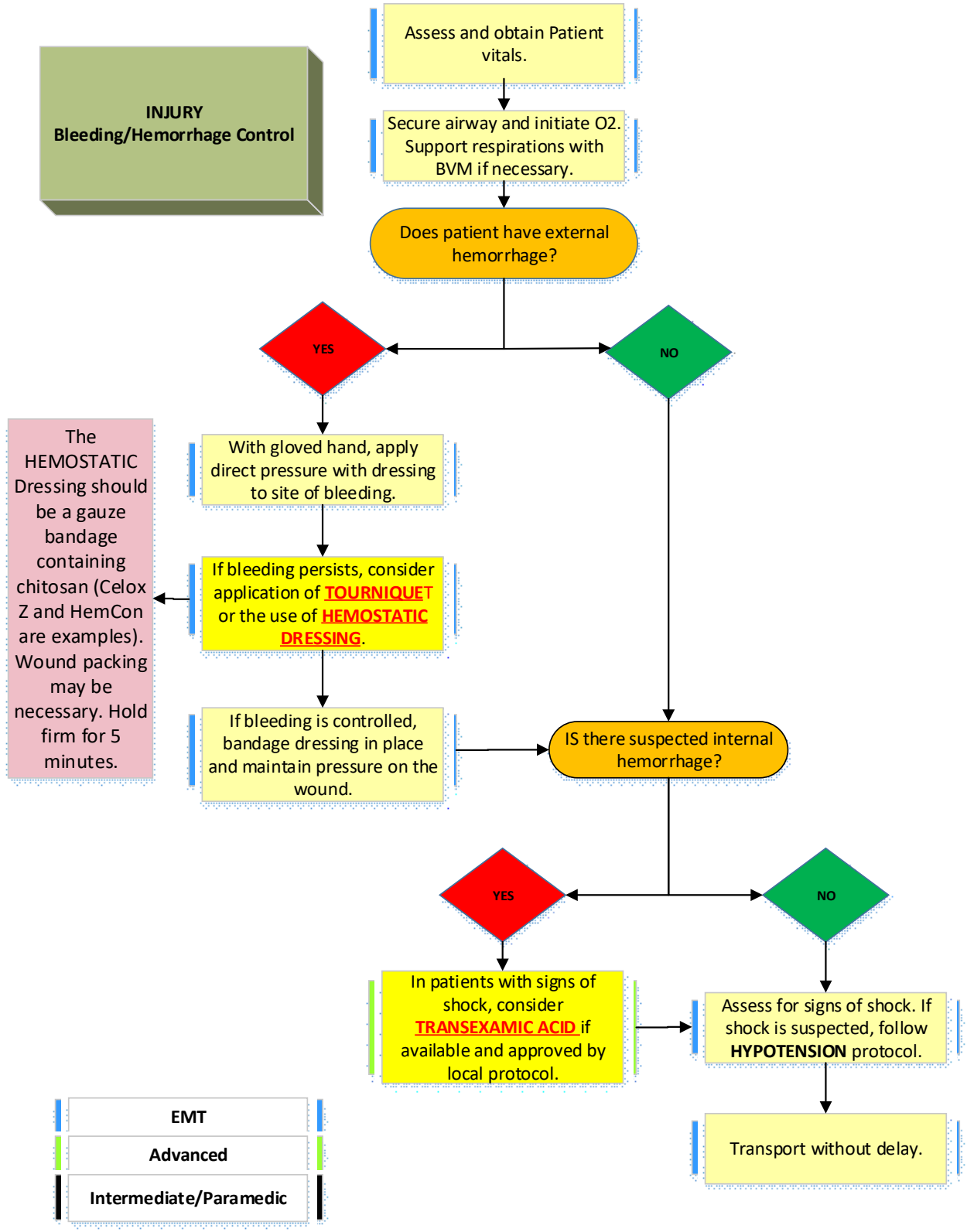
RELATED EMERGNCIES


Exposure Carbon Monoxide
Atmospheric Monitoring
If Available
Monitor Patient's Carbon Monoxide
If Available
Assess and obtain Patient vitals
Maintain Patients Airway as certified and provide high flow O2
Establish IV/IO access
Does patient have high suspicion of Cyanide?
NO
Yes
Administer Hydroxocobalamin
70 mg/kg IV/IO
Maximum of 5 grams
IF AVAILABLE
Apply and monitor ECG
Is patients SBP < 90mmHg?
Yes
Administer Normal Saline Bolus
500 ml IV/IO as needed to maintain SBP > 90 mmHg
NO
Administer Dopamine
5-20 mcg/kg/min to obtain/ maintain SBP >90
IF AVAILABLE
Transport to closest appropriate emergency department.
EMT
Advanced
Intermediate/Paramedic

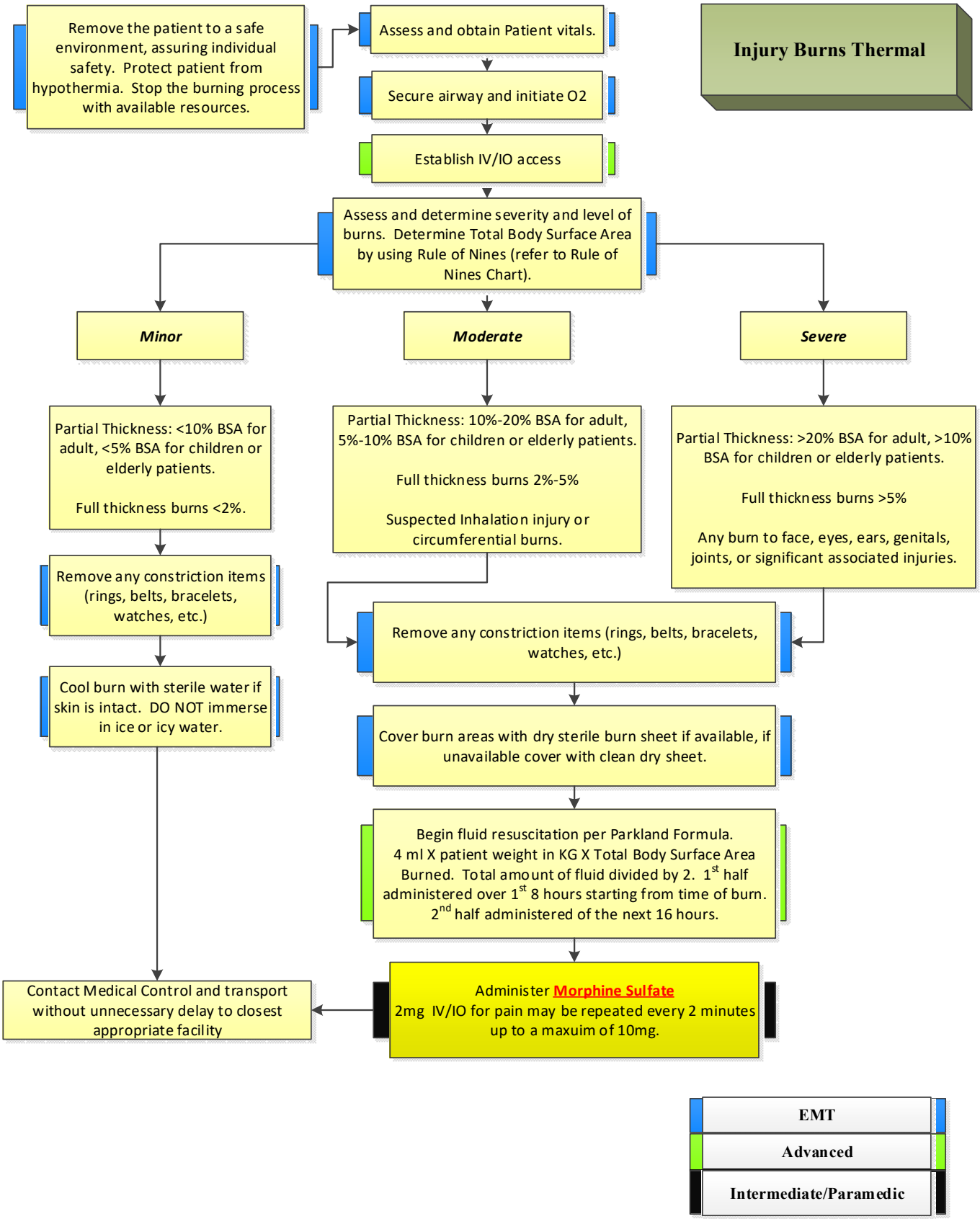

Atmospheric Monitoring
If Available
Monitor Patient's Carbon Monoxide
If Available
Assess and obtain Patient vitals
Exposure Smoke Inhalation
Maintain Patients Airway as certified and provide high flow O2
Establish IV/IO access
Does patient have high suspicion of Cyanide?
NO
Yes
Administer Hydroxocobalamin
70 mg/kg IV/IO
Maximum of 5 grams
IF AVAILABLE
Apply and monitor ECG
Is patients SBP < 90mmHg?
Yes
Administer Normal Saline Bolus
500 ml IV/IO as needed to maintain SBP > 90 mmHg
NO
Administer Dopamine
5-20 mcg/kg/min to obtain/ maintain SBP >90
IF AVAILABLE
Transport to closest appropriate emergency department.
EMT
Advanced
Intermediate/Paramedic

INJURY

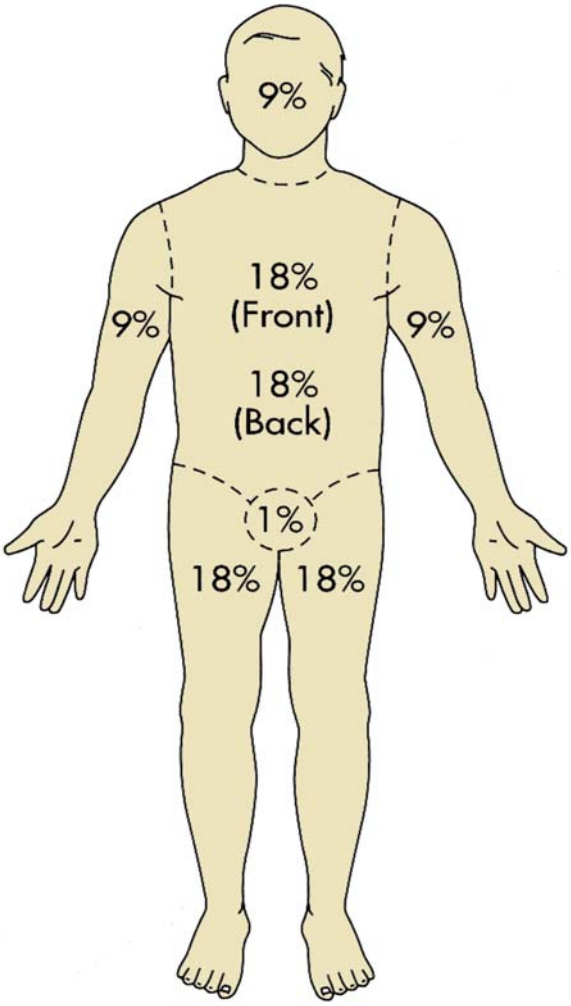
RELATED EMERGENCIES

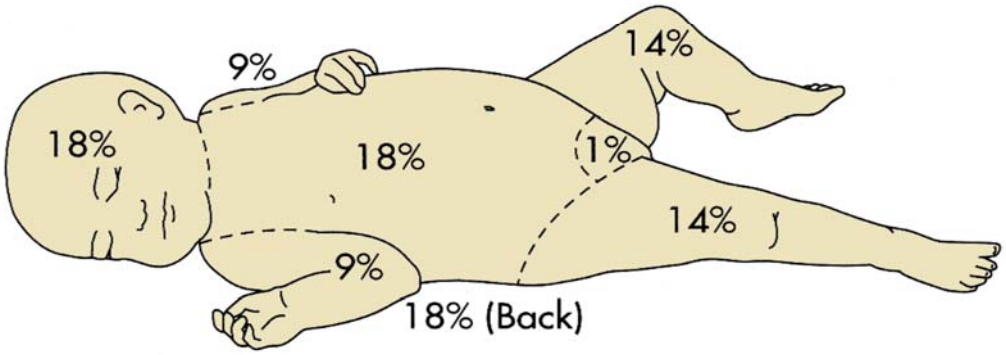

INJURY
Bleeding/Hemorrhage Control
Assess and obtain Patient vitals.
Secure airway and initiate O2. Support respirations with BVM if necessary.
Does patient have external hemorrhage?
YES
NO
With gloved hand, apply direct pressure with dressing to site of bleeding.
If bleeding persists, consider application of TOURNIQUET or the use of HEMOSTATIC DRESSING.
The HEMOSTATIC Dressing should be a gauze bandage containing chitosan (Celox Z and HemCon are examples). Wound packing may be necessary. Hold firm for 5 minutes.
If bleeding is controlled, bandage dressing in place and maintain pressure on the wound.
IS there suspected internal hemorrhage?
YES
NO
In patients with signs of shock, consider TRANSEXAMIC ACID if available and approved by local protocol.
Assess for signs of shock. If shock is suspected, follow HYPOTENSION protocol.
Transport without delay.
EMT
Advanced
Intermediate/Paramedic

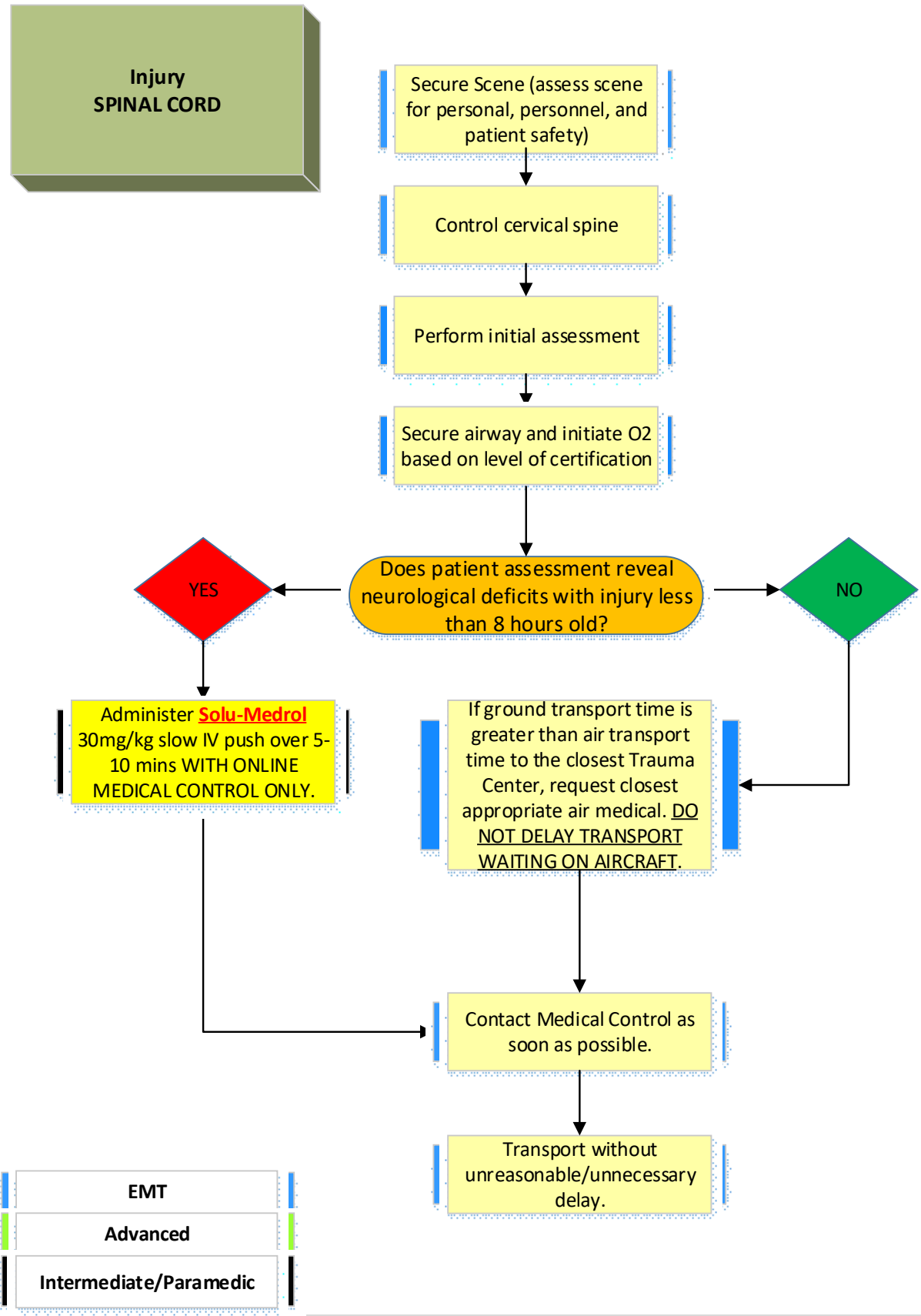
Injury Burns Thermal

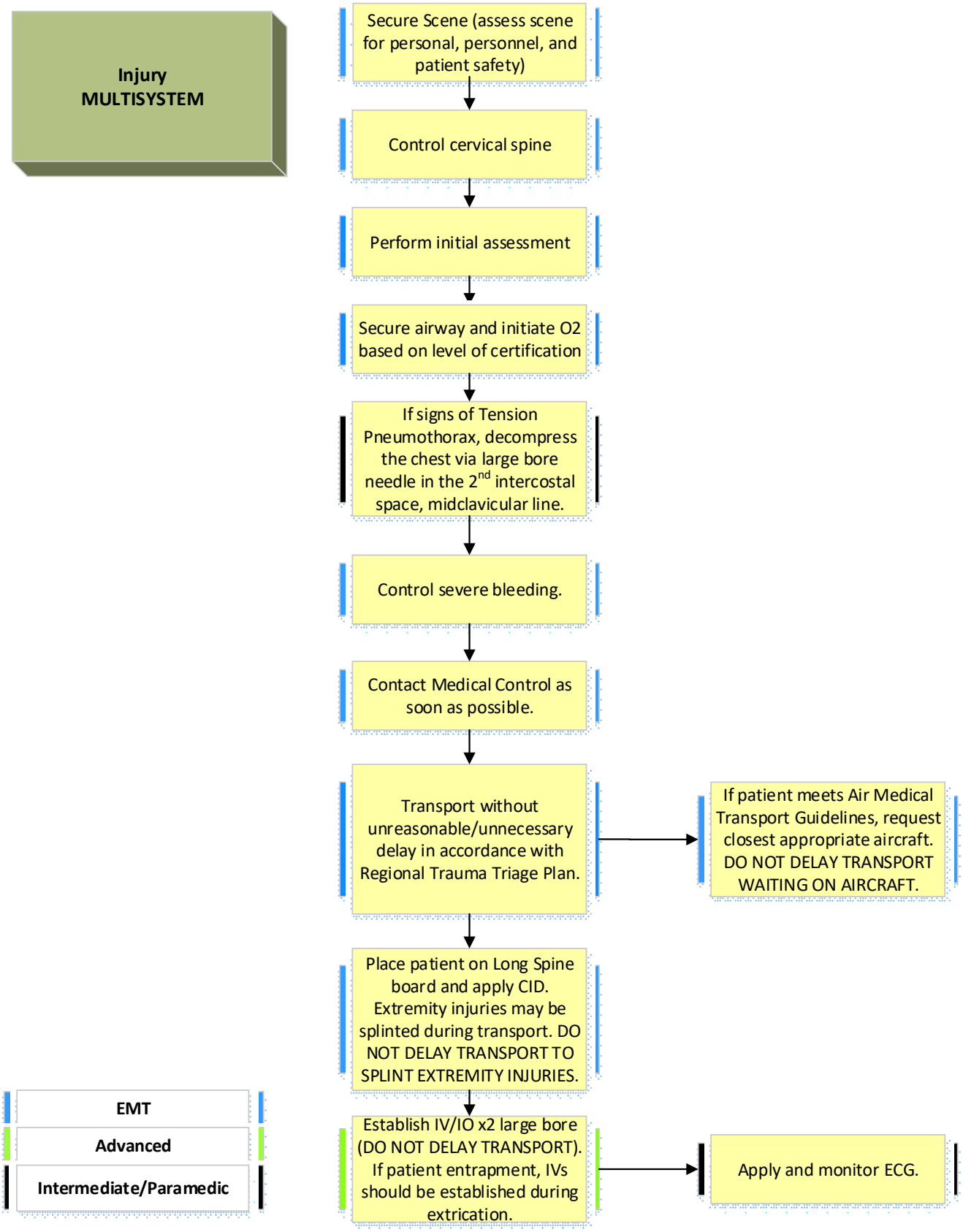


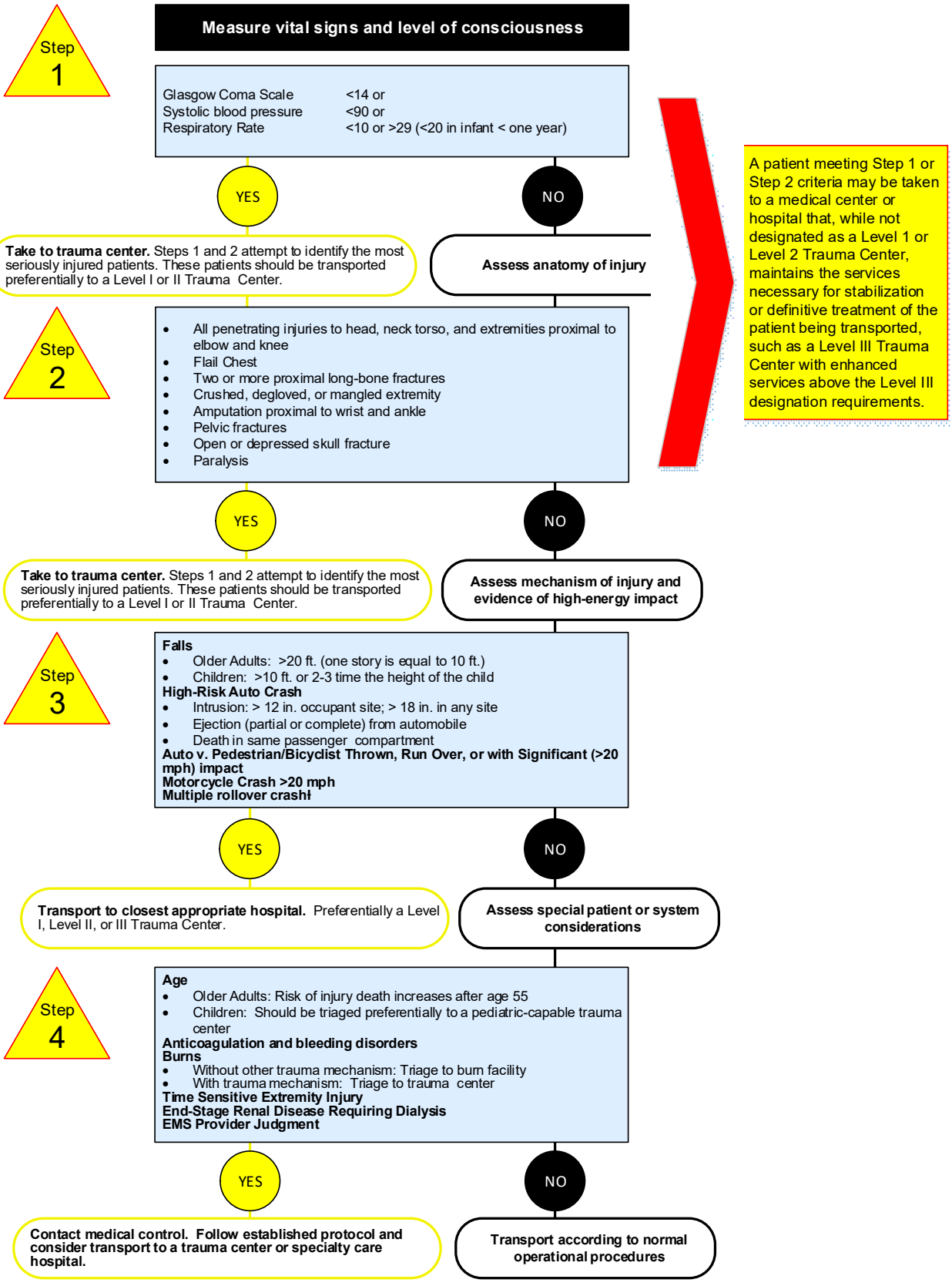
Rule of Nines






Injury
SPINAL CORD
Secure Scene (assess scene for personal, personnel, and patient safety)
Control cervical spine
Perform initial assessment
Secure airway and initiate O2 based on level of certification
Does patient assessment reveal neurological deficits with injury less than 8 hours old?
YES
NO
Administer Solu-Medrol 30mg/kg slow IV push over 5-10 mins WITH ONLINE MEDICAL CONTROL ONLY.
If ground transport time is greater than air transport time to the closest Trauma Center, request closest appropriate air medical. DO NOT DELAY TRANSPORT WAITING ON AIRCRAFT.
Contact Medical Control as soon as possible.
Transport without unreasonable/unnecessary delay.
EMT
Advanced
Intermediate/Paramedic


Injury
MULTISYSTEM
Secure Scene (assess scene for personal, personnel, and patient safety)
Control cervical spine
Perform initial assessment
Secure airway and initiate O2 based on level of certification
If signs of Tension Pneumothorax, decompress the chest via large bore needle in the 2nd intercostal space, midclavicular line.
Control severe bleeding.
Contact Medical Control as soon as possible.
Transport without unreasonable/unnecessary delay in accordance with Regional Trauma Triage Plan.
If patient meets Air Medical Transport Guidelines, request closest appropriate aircraft. DO NOT DELAY TRANSPORT WAITING ON AIRCRAFT.
Place patient on Long Spine board and apply CID. Extremity injuries may be splinted during transport. DO NOT DELAY TRANSPORT TO SPLINT EXTREMITY INJURIES.
Establish IV/IO x2 large bore (DO NOT DELAY TRANSPORT). If patient entrapment, IVs should be established during extrication.
Apply and monitor ECG.
EMT
Advanced
Intermediate/Paramedic


Step 1
Measure vital signs and level of consciousness
Glasgow Coma Scale <14 or
Systolic blood pressure <90 or
Respiratory Rate <10 or >29 (<20 in infant < one year)
YES
NO
Take to trauma center. Steps 1 and 2 attempt to identify the most seriously injured patients. These patients should be transported preferentially to a Level I or II Trauma Center.
Assess anatomy of injury
Step 2
All penetrating injuries to head, neck torso, and extremities proximal to elbow and knee
Flail Chest
Two or more proximal long-bone fractures
Crushed, degloved, or mangled extremity
Amputation proximal to wrist and ankle
Pelvic fractures
Open or depressed skull fracture
Paralysis
YES
NO
Take to trauma center. Steps 1 and 2 attempt to identify the most seriously injured patients. These patients should be transported preferentially to a Level I or II Trauma Center.
Assess mechanism of injury and evidence of high-energy impact
Step 3
Falls
Older Adults: >20 ft. (one story is equal to 10 ft.)
Children: >10 ft. or 2-3 time the height of the child
High-Risk Auto Crash
Intrusion: > 12 in. occupant site; > 18 in. in any site
Ejection (partial or complete) from automobile
Death in same passenger compartment
Auto v. Pedestrian/Bicyclist Thrown, Run Over, or with Significant (>20 mph) impact
Motorcycle Crash >20 mph
Multiple rollover crash
YES
NO
Transport to closest appropriate hospital. Preferentially a Level I, Level II, or III Trauma Center.
Assess special patient or system considerations
Step 4
Age
Older Adults: Risk of injury death increases after age 55
Children: Should be triaged preferentially to a pediatric-capable trauma center
Anticoagulation and bleeding disorders
Burns
Without other trauma mechanism: Triage to burn facility
With trauma mechanism: Triage to trauma center
Time Sensitive Extremity Injury
End-Stage Renal Disease Requiring Dialysis
EMS Provider Judgment
YES
NO
Contact medical control. Follow established protocol and consider transport to a trauma center or specialty care hospital.
Transport according to normal operational procedures
A patient meeting Step 1 or Step 2 criteria may be taken to a medical center or hospital that, while not designated as a Level 1 or Level 2 Trauma Center, maintains the services necessary for stabilization or definitive treatment of the patient being transported, such as a Level III Trauma Center with enhanced services above the Level III designation requirements.

REVISED TRAUMA SCORE (RTS)

The trauma score is a numerical grading system for estimating the severity of injury. Any patient with a score 11 or less should be considered a potential priority 1 trauma and directed to a Level 1 Trauma Center.

		SCORE
SYSTOLIC BLOOD PRESSURE	>89	4
	75-89	3
	50-74	2
	1-49	1
	0	0
RESPIRATORY RATE	10-29	4
	>29	3
	6-9	2
	1-5	1
	0	0
GLASGOW COMA SCALE	13-15	4
	9-12	3
	6-8	2
	4-5	1
	3	0
TOTAL		0-12

PEDIATRIC TRAUMA SCORE

A. Weight

1. Weight >20kg:	+2
2. Weight 10-20kg:	+1
3. Weight <10kg:	-1

B. Airway

1. Normal Airway:	+2
2. Maintained Airway:	+1
3. Invasive Airway:	-1

C. Systolic Blood Pressure

1. SBP >90 mmHg:	+2
2. SBP 50-90 mmHg:	+1
3. SBP <50 mmHg:	-1

D. Central Nercous System

1. Awake:	+2
2. Obtuned:	+1
3. Coma:	-1

E. Open Wound

1. No Open Wound:	+2
2. Minor Open Wound:	+1
3. Major Open Wound:	-1

F. Skeletal Trauma

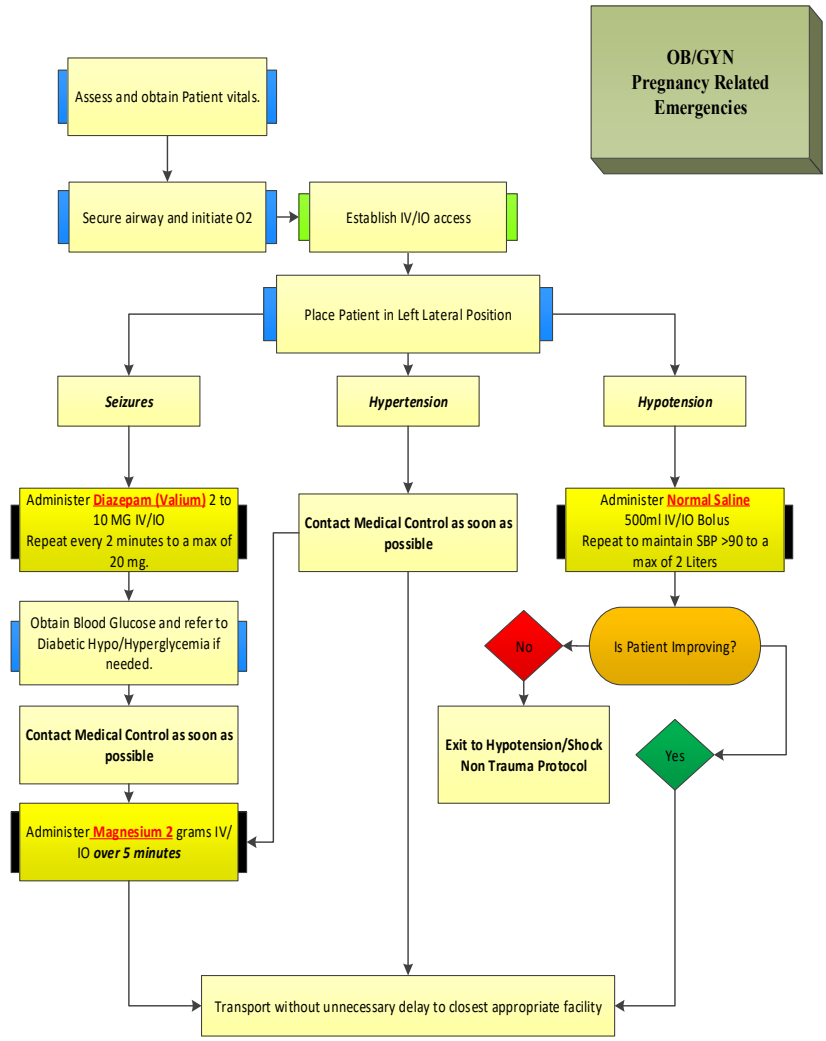
1. No Skeletal Trauma:	+2
2. Closed Fracture:	+1
3. Open Fracture or Multipule Fractures:	-1

GLASGOW COMA SCALE

EYE OPENING	Spontaneous	4
	To Voice	3
	To Pain	2
	None	1
VERBAL RESPONSE	Oriented	5
	Confused	4
	Inappropriate Words	3
	Incomprehensible Words	2
	None	1
MOTOR RESPONSE	Obeys Command	6
	Localizes Pain	5
	Withdraw (pain)	4
	Flexion (pain)	3
	Extension (pain)	2
	None	1
TOTAL		3-15

OB/GYN

Related Emergencies


OB/GYN
Pregnancy Related
Emergencies
Assess and obtain Patient vitals.
Secure airway and initiate O2
Establish IV/IO access
Place Patient in Left Lateral Position
Seizures
Hypertension
Hypotension
Administer Diazepam (Valium) 2 to 10 MG IV/IO
Repeat every 2 minutes to a max of 20 mg.
Contact Medical Control as soon as possible
Administer Normal Saline
500ml IV/IO Bolus
Repeat to maintain SBP >90 to a max of 2 Liters
Obtain Blood Glucose and refer to Diabetic Hypo/Hyperglycemia if needed.
No
Is Patient Improving?
Contact Medical Control as soon as possible
Exit to Hypotension/Shock Non Trauma Protocol
Yes
Administer Magnesium 2 grams IV/IO over 5 minutes
Transport without unnecessary delay to closest appropriate facility
EMT
Advanced
Intermediate/Paramedic

Medications

Pediatric Medications

Early establishment of medical control is imperative especially with the pediatric patient. Their causes of cardiac arrest are much different than adult patients. Any on-line orders should be followed, as the doses below only serve as guidelines.
Refer to AHA PALS 2006 provider manual for medication reference.

ALBUTEROL: .15 mg/kg by nebulizer.

ATROPINE: 0.02 mg/kg. Absolute minimum dose is 0.1mg. Maximum single dose is 0.5 milligrams in the child, 1.0 milligrams in the adolescent. Maximum total dose is 1 milligram for a child, 2 milligrams in an adolescent.

DEXTROSE 50% (D50): 0.5 to 1.0 gram/kg slowly. In children this should be diluted 1:1 with Sterile Water creating D25 and give slowly. 1 Amp=25 grams.

DIAZEPAM (VALIUM): 0.25 mg/kg IV very slowly. Careful evaluation of respiration and airway mandatory.

ADENOCARD (ADENOSINE): 0.1 mg/kg second dose of 0.2 mg/kg third dose of 0.2mg/kg.

EPINEPHRINE (1:10,000 conc.): 0.01 mg/kg of 1:10,000 for first IV/IO dose, then .1 mg/kg of 1:1,000 every 5 minutes for subsequent dose.

FUROSEMIDE (LASIX): 1mg/kg IV slowly.

LIDOCAINE: 1mg/kg, maximum dose 3mg/kg.

MORPHINE: 0.1 - 0.2mg/kg slowly.

NALOXALONE (NARCAN): 0.1mg/kg IV titrated to effect.

SODIUM BICARBONATE: 1meq/kg IV only after aggressive hyperventilation through a patent airway.

DEFIBRILLATION: 2J/kg › 4J/kg › 4J/kg

SYNCRONIZED CARDIOVERSION: 1J/Kg > 2J/Kg > 2J/Kg

Adult Medications

ADENOCARD (Adenosine):

THERAPEUTIC EFFECTS

Antiarhythmic. Slows conduction time through the AV node and can interrupt the re-entry pathways through AV node.

INDICATIONS

Paroxysmal supraventricular tachycardia (PSVT).

CONTRAINDICATIONS

1). 2nd degree type II or 3rd degree
2). Sick sinus rhythm

SIDE EFFECTS

1). Transient dysrhythmias
2). Facial flushing
3). Dyspnea
4). Chest pressure
5). Hypotension
6). Headache
7). Nausea
8). Bronchospasm

HOW SUPPLIED

6mg in 2ml flip-top vials.

ADMINISTRATION AND DOSAGE

Refer to specific protocol.

NOTE: Adenocard is blocked by Caffeine and Theophylline and is potentiated by Dipyrdamole Persantine) and Tegratol. Consider reducing dose when pts are on potentiating medications.

ALBUTEROL - BRONCHODILATOR AEROSOL (Ventolin, Proventil)

CLINICAL PHARMACOLOGY

Albuterol relaxes smooth muscle of the bronchi and uterus and the vascular supply to skeletal muscle, but may have less cardiac stimulant effects than isoproterenol.

INDICATIONS

Albuterol is indicated for the relief of bronchospasm in patients with reversible obstructive airway disease and for the prevention of exercise-induced bronchospasm.

CONTRAINDICATIONS

Contraindicated in patients with a history of hypersensitivity to any of its components. This medication should not be used concomitantly with epinephrine or other sympthomimetic aerosol bronchodilators.

SIDE EFFECTS

The potential for paradoxical bronchospasm should be kept in mind. I fit occurs, the preparation should be discontinued immediately and alternative therapy instituted.

ADMINISTRATION AND DOSAGE

Refer to specific protocol.

Set flowmeter at 10 L/min. and place mask or mouthpiece on patient. Instruct patient to take slow, deep breaths with an inspiratory hold. Monitor if available equipment and staff.
**Place patient on cardiac monitor if available.

Amiodrone

THERAPEUTIC EFFECTS

Anti-dysrhythmic which prolongs the duration of the action potential and effective refractory period.

INDICATIONS

Initial treatment and prophylaxis of frequently recurring VF and hemodynamically unstable VT in patients' refractory to other therapy.

CONTRAINDICATIONS

1.) Pulmonary congestion.
2.) Cardiogenic shock.
3.) Hypotension
4.) Sensitivity to amiodarone

SIDE EFFECTS

1.) Hypotension
2.) Headache
3.) Dizziness
4.) Bradycardia
5.) AV conduction abnormalities
6.) Flushing
7.) Abnormal salivation

HOW SUPPLIED

150 MG/ML Vials

DOSAGE AND ADMINISTRATION

Adult: Loading dose for cardiac arrest: 300 mg IV push; flush with 10 ML D5W or NS. Supplemental bolus dose for cardiac arrest: 150 MG IV push; flush with 10 ML of D5W or NS. Loading infusion after reestablishment of spontaneous circulation: 360 MG (diluted) over 6 hours. Maintenance infusion: 540 MG (diluted) over 18 hours. For
profussing rythums give 150 mg over 10 min IV.

Pediatric: Safety has not been established.

Aspirin

THERAPEUTIC EFFECTS

Aspirin is an anti-inflammatory agent and an inhibitor of platelet function.

INDICATIONS

Aspirin is used for new chest pain suggestive of acute myocardial infarction.

CONTRAINDICATIONS

Known hypersensitivity. Aspirin is relatively contraindicated in patients with active ulcer disease and asthma.

PRECAUTIONS

Aspirin can cause GI upset and bleeding. Aspirin should be used with caution in patients who report allergies to NSAIDS.

SIDE EFFECTS

Heartburn, GI bleeding, nausea, vomiting, wheezing, and prolonged bleeding.

INTERACTIONS

When administered together, aspirin and other anti-inflammatory agents may cause an increased incidence of side effects. Administration of aspirin with antacids may reduce blood levels by reducing absorption.

HOW SUPPLIED

Tablets (65, 81, 325, 500, 650, 975 mg)
Capsules (325, 500 mg)
Controlled-release tablets (800 mg)
Suppositories (varies from 60 mg to 1.2 g)

ADMINISTRATION AND DOSAGE

Adult: Mild pain and fever: 325-650 mg PO q 4 hr
ACS: 160-325 mg PO non – enteric-coated tablet (chewing is preferable to swallowing); may use rectal suppository for patients who cannot take orally
Pediatric: Not indicated in prehospital setting

Atropine Sulfate

THERAPEUTIC EFFECTS

By blocking parasymphathetic (vagal) action on the heart, atropine enhances conduction through the AV junction and accelerates the heart rate, thereby improving cardiac output. In addition, by speeding up a slow heart to a normal rate, atropine reduces the chances of ectopic activity in the ventricles and thus of Ventricular Fibrillation. Atropine is most effective in reversing bradycardia due to increased parasympathetic tone or to morphine; it is less effective in treating bradycardia due to actual damage to the AV or SA node.

INDICATIONS

1). SYMPTOMATIC BRADYCARDIA
2). As an antidote in ORGANOPHOSPHATE POISONING.

CONTRAINDICATIONS

1). Atrial flutter or atrial fibrillation where there is a rapid ventricular response.
2). Glaucoma.
3). Use with extreme caution in myocardial infarction.

SIDE EFFECTS

The patient should be warned that he or she may experience some of the following side effects and that these side effects are part of the drug's usual and expected actions:

1). Blurred vision, headache, pupillary dilatation.
2). Dry mouth, thirst.
3). Flushing of the skin.
4). Difficulty in urinating (especially older men).

HOW SUPPLIED

Prefilled syringes containing 1mg in 10ml.

ADMINISTRATION AND DOSAGE

In the field, atropine is usually given intravenously for bradycardia; for organophosphate poisoning, a combination of intravenous and intramuscular administration is commonly used. In resuscitation from cardiac arrest, if an intravenous route cannot be established, atropine may be given through the endotracheal tube.

1). For bradycardia: 0.5mg IV, repeat at 5 - minute intervals until the desired heart rate is achieved; the total dose should not, however, exceed .04 mg/kg. Doses smaller than 0.5 mg, or a dose given too slowly, may slow rather than speed up the heart rate. Excessive doses may precipitate ventricular tachycardia or fibrillation.
2). For organophosphate poisoning: 2mg IM and 1mg IV. The IV dose may be repeated every 5 to 10 minutes as needed until a decrease in secretions is observed.

Brilinta (Generic: Ticagrelor)

THERAPEUTIC EFFECTS

To reduce the rate of cardiovascular death, MI, and stroke in patients with acute coronary syndrome (ACS) or history of MI. To reduce the rate of stent thrombosis in patients who have been stented for ACS.

CONTRAINDICATIONS

History of intracranial hemorrhage. Active pathological bleeding (eg, peptic ulcer, intracranial hemorrhage).

SIDE EFFECTS

Bleeding (may be fatal), dyspnea (consider other alternatives if intolerable), dizziness, nausea, diarrhea; ventricular pauses.

HOW SUPPLIED

Tabs—60

ADMINISTRATION AND DOSAGE

Adult:

Swallow whole; if unable to swallow, may crush tabs, then mix with water and drink or give via NG tube (CH8 or greater). Initially 180mg loading dose, continue with 90mg twice daily during the first year; after one year, give 60mg twice daily. After the initial loading dose of aspirin, take ticagrelor with maintenance dose of aspirin 75–100mg daily.

Children:

Not established.

Calcium Chloride

THERAPEUTIC EFFECTS

Calcium Chloride provides elemental calcium in the form of the cation. Calcium is required for many physiological activities.

CONTRAINDICATIONS

Calcium may precipitate Digitalis toxicity in patients taking Digoxin.

SIDE EFFECTS

Bradycardia, arrhythmias, syncope, nausea, vomiting, cardiac arrest.

HOW SUPPLIED

10% solution in 10-mL (100 mg/mL) ampules, vials, and prefi lled syringes

ADMINISTRATION AND DOSAGE

Hyperkalemia and Calcium Channel Blocker Overdose
Adult: Typical dose is 500-1000 mg (5-10 mL of a 10% solution); may be repeated as needed
Pediatric: 20 mg/kg (0.2 mL/kg) IV of 10% solution slow IV/IO; may repeat if documented or clinical indication persists (e.g., toxicological problem); dose should not exceed adult dose

Diphenhydramine (Benadryl)

Therapeutic Effect
Antihistamine

Indications
Allergic reaction, extra pyramidal symptoms, such as caused by Phenergan.

Contraindications
Asthma, pregnant and lactating females.

Side Effects
Sedation, blurred vision, anticholinergic effects.

How supplied
2 ml vial (50 mg/ml.)

Dose
Refer to specific protocol.

50% Dextrose (D50)

THERAPEUTIC EFFECTS

Restores circulating blood sugar level to normal in states of hypoglycemia.
Acts transiently as an osmotic diuretic.

INDICATIONS

1). To treat coma caused by HYPOGLYCEMIA.
2). To treat COMA OF UNKNOWN CAUSE.
3). To treat STATUS EPILEPTICUS OF UNCERTAIN CAUSE.
4). Some cases of REFRACTORY CARDIAC ARREST.

CONTRAINDICATIONS

Intracranial hemorrhage.
Acute CUA

SIDE EFFECTS

1). May precipitate severe neurologic symptoms in alcoholics. For this reason, when given to a known alcoholic, should be accompanied by thiamine, 100mg IM, which will prevent this neurologic syndrome.
2). Will cause tissue necrosis if it infiltrates; should therefore be given only through a good, rapidly flowing IV line.

HOW SUPPLIED

Prefilled syringes and vials containing 50ml of 50% dextrose (=25grams of dextrose).

ADMINISTRATION AND DOSAGE

Given intravenously, through a free-flowing intravenous line, preferably in a large vein. If possible, draw blood for serum glucose determinations before administering the dextrose.

Dose

Refer to specific protocol.

25% Dextrose (D25)

THERAPEUTIC EFFECTS

When administered intravenously, this solution restores blood glucose levels in hypoglycemia and provides a source of carbohydrate calories.

INDICATIONS

25% Dextrose Injection is indicated in the treatment of acute symptomatic episodes of hypoglycemia in the neonate or older infant to restore depressed blood glucose levels and control symptoms. Other drugs, such as epinephrine and glucagon, should be considered in patients unresponsive or intolerant to dextrose (glucose).

CONTRAINDICATIONS

A concentrated dextrose solution should not be used when intracranial or intraspinal hemorrhage is present.

SIDE EFFECTS

Hyperosmolar syndrome, resulting from excessively rapid administration of concentrated dextrose may cause mental confusion and/or loss of consciousness.

INTERACTIONS

When administered together, aspirin and other anti-inflammatory agents may cause an increased incidence of side effects. Administration of aspirin with antacids may reduce blood levels by reducing absorption.

HOW SUPPLIED

25% Dextrose Injection, USP is typically supplied in single-dose containers.

ADMINISTRATION AND DOSAGE

Refer to specific protocol.

Diazepam (Valium)

THERAPEUTIC EFFECTS

Through its depressant action on the central nervous system, can terminate some seizures. Also has a calming effect in anxiety.

INDICATIONS

1). To treat STATUS EPILEPTICUS.
2). Given as a sedative prior to CARDIOVERSION in conscious patients.
3.) Facilitation of Intubation

RELATIVE CONTRAINDICATIONS

1). Should not be given during pregnancy because of possible toxic effects on the fetus.
2). Should not be given to patients who have taken alcohol or other sedative drugs.
3). Should not be given to patients with hypotension.

SIDE EFFECTS

1). Possible hypotension.
2). Confusion, stupor.
3). In some patients, especially the elderly, the very ill, and those with pulmonary disease, may cause respiratory arrest and/or cardiac arrest.

HOW SUPPLIED

In prefilled syringes and ampules of 2ml and in vials of 10ml, in a concentration of 5mg/ml.

ADMINISTRATION AND DOSAGE

For status epilepticus: given intravenously in slow, titrated doses. Before administering the drug, check and record the patient's vital signs. Then give 2.5mg (0.5ml) SLOWLY IV. Wait
a few minutes and recheck the BP; if it has fallen, do not give any more of the drug. If the BP is stable, and the desired therapeutic effect has not been achieved, give another 2.5mg (0.5ml) IV. Then recheck the BP. Continue until the seizures have stopped or the BP drops, but do not exceed a total dose of 10 mg in the field.

Dopamine

Dopamine is only to be administered with DIAL-A-FLOW or IV PUMP!

THERAPEUTIC EFFECTS

Beta sympathetic drug - hence causes an increase in the force and rate of cardiac contractions as well as dilatation of renal and mesenteric arteries. This latter effect promotes urine flow, and for this reason, dopamine is sometimes preferred over norepinephrine (which constricts renal arteries) in shock. Dopamine causes less increase in oxygen consumption by the myocardium than does isoproterenol. At low doses, the beta effects of dopamine predominate; at high doses, dopamine has alpha effects as well and thus will cause vasoconstriction.

INDICATIONS

To increase cardiac output in CARDIOGENIC SHOCK while maintaining good renal perfusion.
Symptomatic Bradycardia.

CONTRAINDICATIONS

1). Should not be used as first - line therapy in hypotension caused by hypovolemia (e.g., hemorrhagic shock), where volume replacement should precede the use of vasopressors.
2). Pheochromacytoma (a tumor that produces epinephrine and/or related substances).
3). Should not be given in the presence of uncorrected tachyarrhythmias or ventricular fibrillation.

SIDE EFFECTS

1). Ectopic beats, palpitations, tachycardia.
2). Nausea, vomiting
3). Dyspnea, angina
4). Headache

HOW SUPPLIED

10 ml prefilled additive syringe containing 400mg (40mg/ml)

ADMINISTRATION AND DOSAGE

Given by titrated intravenous infusion (microdrip infusion set).

Dosage

Inject contents of prefilled syringe (400mg) into 500ml bag of D5W to yield a concentration of 800mcg/ml. Start the infusion at a rate of 5mcg/kg/min. (e.g., 140-320mcg/min. for a 70-kg man, or roughly 0.25ml/min. of above dilution). Titrate the infusion according to the state of consciousness, blood pressure, and urine flow. Not to exceed 20mcg/kg/min.

Dopamine Drip Chart

Dopamine 200 mg/250ml					
	Mcg/kg/min				
KG	1	2	3	4	5
40	3	6	9	12	15
45	3.4	6.8	10.2	13.6	16.8
50	3.8	7.6	11.2	15	18.8
55	4.2	8.2	12.4	16.6	20.6
60	4.6	9	13.6	18	22.6
65	4.8	9.8	14.6	19.6	24.2
70	5.2	10.6	15.8	21	26.2
75	5.6	11.2	16.8	22.6	28.2
80	6	12	18	24	30
85	6.4	12.8	19.2	25.6	31.8
90	6.8	13.6	20.2	27	33.8
95	7.2	14.2	21.4	28.6	35.6
100	7.6	15	22.6	30	37.6
105	7.8	15.8	23.6	31.6	39.4
110	8.2	16.6	24.8	33	41.2

Dopamine 400 mg/250ml					
	Mcg/kg/min				
KG	1	2	3	4	5
40	1.5	3	4.5	6	7.5
45	1.7	3.4	5.1	6.8	8.4
50	1.9	3.8	5.6	7.5	9.4
55	2.1	4.1	6.2	8.3	10.3
60	2.3	4.5	6.8	9	11.3
65	2.4	4.9	7.3	9.8	12.2
70	2.6	5.3	7.9	10.5	13.1
75	2.8	5.6	8.4	11.3	14.1
80	3	6	9	12	15
85	3.2	6.4	9.6	12.8	15.9
90	3.4	6.8	10.1	13.5	16.9
95	3.6	7.1	10.7	14.3	17.8
100	3.8	7.5	11.3	15	18.8
105	3.9	7.9	11.8	15.8	19.7
110	4.1	8.3	12.4	16.5	20.6

Epinephrine

THERAPEUTIC EFFECTS

1). In cardiac arrest, may restore electric activity in asystole; increases myocardial contractility; and decreases the threshold for defibrillation - all through its actions as a beta sympathetic agent. In addition, the alpha effects of epinephrine, causing vasoconstriction, elevate the perfusion pressure and may thus improve coronary blood flow during external cardiac compressions.

2). In anaphylaxis, acts as a bronchodilator (beta effect) and helps maintain blood pressure (alpha effect).

INDICATIONS

1). In CARDIAC ARREST, to restore electric activity in asystole or to enhance defibrillation potential in ventricular fibrillation; also to elevate systemic vascular resistance and thereby improve perfusion pressure during resuscitation.

2). To treat the life-threatening symptoms of ANAPHYLAXIS.

3). To treat acute attacks of ASTHMA.

CONTRAINDICATIONS

1). Must be used with caution in patients with angina, hypertension, or hyperthyroidism.

2). THERE ARE NO CONTRAINDICATIONS TO THE USE OF EPINEPHRINE IN THE SITUATION OF CARDIAC ARREST OR AHAPHYLACTIC SHOCK.

SIDE EFFECTS

In a conscious patient, may cause palpitations, from tachycardia or ectopic beats, and elevations of blood pressure (which may not be desirable if the patient is already hypertensive). The asthmatic with preexisting heart disease may experience dysrhymias if treated with epinephrine.

HOW SUPPLIED

1). Prefilled syringes containing 1mg of epinephrine in 10ml (1:10,000 solution).

2). Prefilled Tubex syringe containing 1mg epinephrine in 1ml (1:1,000 solution).

ADMINISTRATION AND DOSAGE

1). In cardiac arrest, epinephrine is given intravenously. Dosage: 1 mg IV. (1:10,000 solution); repeat at 3-minute intervals throughout resuscitation, (higher dose EPI is option of Med. Control.)

2). For anaphylatic reactions: Moderate to severe reactions, with shock: 0.3 to 0.5mg (5ml of a 1:10,000 solution) is given slowly IV.

3). For sever asthmatic attacks: Consider given SQ in a dose of 0.3 to 0.5ml of a 1:1,000 solution.

Etomidate

THERAPEUTIC EFFECTS

Etomidate appears to produce hypnosis, amnesia, and inhibition of nociceptive responses, almost exclusively via actions at one **class** of neuronal ion channels (i.e ., γ-aminobutyric acid type A receptors [GABA A receptors]).95,96 Molecular targets mediating adrenal steroid inhibition and pain on injection have also been identified.

INDICATIONS

For the induction of general anesthesia. For the supplementation of subpotent anesthetic agents (eg, nitrous oxide in oxygen) during maintenance of anesthesia for short operative procedures (eg, dilation and curettage, cervical conization).

CONTRAINDICATIONS

Etomidate is contraindicated in patients who have shown hypersensitivity to it. Etomidate is a hypnotic drug without analgesic activity. Intravenous injection of etomidate produces hypnosis characterized by a rapid onset of action, usually within one minute.

SIDE EFFECTS

Transient venous pain on inj, transient skeletal muscle movements including myoclonus, hyper- or hypoventilation, apnea, laryngospasm, hiccup, snoring, hyper- or hypotension, tachycardia, arrhythmias, post-op nausea/vomiting.

HOW SUPPLIED

Vial—10mL, 20mL; Ampul—10mL, 20mL; Abboject syringe—20mL

ADMINISTRATION AND DOSAGE

Refer to specific protocols.

Fentanyl

THERAPEUTIC EFFECTS

Synthetic opioid that is very effective at **relieving moderate-to-severe chronic pain**. Oral formulations of fentanyl contain an amount of the drug that can be fatal to a child. The difference between a therapeutic dose and a deadly dose of fentanyl is very small.

INDICATIONS

Analgesic action of short duration during the anesthetic periods, premedication, induction and maintenance, and in the immediate postoperative period (recovery room) as the need arises. Use as a narcotic analgesic supplement in general or regional anesthesia. Administration with a neuroleptic as an anesthetic premedication, for the induction of anesthesia and as an adjunct in the maintenance of general and regional anesthesia.

CONTRAINDICATIONS

Known hypersensitivity to fentanyl (e.g., anaphylaxis)

SIDE EFFECTS

Mental/mood changes, Severe stomach/abdominal pain, Difficulty urinating, Slow heartbeat, Fainting, Seizure, Slow/shallow breathing

HOW SUPPLIED

100mcg 1ml

ADMINISTRATION AND DOSAGE

Refer to specific protocol.

Furosemide (Lasix)

THERAPEUTIC EFFECTS

Potent diarrhetic, causing the excretion of large volumes of urine within 5 to 30 minutes of administration, thus useful in ridding the body of excess fluid in conditions such as congestive heart failure (CHF). Not used often in the field when the distance to the hospital is short. However, furosemide may be useful in long-range transports of patients in marked heart failure (especially catheterized patients) where there is a need to begin definitive therapy before the patient arrives at the hospital.

INDICATIONS

To reverse fluid overload associated with CONGESTIVE HEART FAILURE and PULMONARY EDEMA.

CONTRAINDICATIONS

1). Should not be given to pregnant women.

2). Should not be given to patients with hypokalemia (low potassium).

Hypokalemia may be suspected in a patient who has been on chronic diuretic therapy or whose ECG shows prominent P waves, diminished T waves, and the presence of U waves.

SIDE EFFECTS

Immediate side effects may include nausea and vomiting, potassium depletion (with attendant cardiac dysrhythmias), and dehydration.

ADMINISTRATION AND DOSAGE

In the field, furosemide is given intravenously. If at all possible, the patient should have a urinary catheter in place.

Dosage

40mg SLOWLY IV (injected over 1 - 2 min.). If a response is not obtained, a second dose of 40 to 80mg may be given, but only at the discretion of Med. Control.

Glucagon

THERAPEUTIC EFFECTS

Glucagon causes an increase in blood glucose concentration and is used in the treatment of hypoglycemic states. Glucagon acts only on liver glycogen, converting it to glucose. Parenteral administration of glucagon produces relaxation of the smooth muscle of the stomach, duodenum, small bowel, and colon.

INDICATIONS

Glucagon is useful in conteracting severe hypoglycemic reactions in diabetic patients or during insulin shock therapy in psychiatric patients. Glucagon is helpful in hypoglycemia only if liver glycogen is available. It is of little or no help in states of starvation, adrenal insuffiency, or chronic hypoglycemia. Glucagon is also indicated in patients with life-threatening anaphylaxis, who are refractory to epinephrine or use beta blockers.

CONTRAINDICATIONS

Since glucagon is a protein, hypersensitivity is a possibility.

SIDE EFFECTS

Glucagon is realtively free of adverse reactions except for occasional nausea and vomiting, which may also occur with hypoglycemia.

ADMINISTRATION AND DOSAGE

Refer to specific protocol.

Heparin Sodium

THERAPEUTIC EFFECTS

Heparin inhibits the clotting cascade by activating specific plasma proteins. The drug is used in the prevention and treatment of all types of thromboses and emboli, disseminated intravascular coagulation, arterial occlusion, and thrombophlebitis and is used prophylactically to prevent clotting before surgery.

INDICATIONS

Heparin is considered part of the antithrombotic package (along with aspirin and fi brinolytic agents) adminis tered to patients with STEMI, UA/NSTEMI, and acute coronary syndromes.

CONTRAINDICATIONS

Hypersensitivity; Active bleeding; Recent intracranial, intraspinal, or eye surgery; Severe hypertension; Bleeding tendencies; Severe thrombocytopenia

SIDE EFFECTS

Allergic reaction (chills, fever, back pain); Thrombocytopenia; Hemorrhage; Bruising; Rash

INTERACTIONS

Salicylates, ibuprofen, dipyridamole, and hydroxychloroquine may increase risk of bleeding.

HOW SUPPLIED

Concentrations range from 1000 to 40 000 units/mL

ADMINISTRATION AND DOSAGE

Refer to specific protocol.

Hydroxocobalamin (Cyanokit)

THERAPEUTIC EFFECTS

Hydroxocobalamin is a parenteral preparation of vitamin B12 ; specifi cally, it is the hydroxylated active form of vitamin B12. Hydroxocobalamin is used to treat known or suspected cyanide toxicity.

INDICATIONS

Known or suspected cyanide poisoning

CONTRAINDICATIONS

Known hydroxocobalamin hypersensitivity.

SIDE EFFECTS

Allergic reaction/anaphylaxis, elevated blood pressure, headache, hypertension, injection site reaction, nausea, photophobia, red-colored urine

INTERACTIONS

There are no known drug interactions.

HOW SUPPLIED

Powder for injection: 5 g
Solution: 1000 mcg/mL

ADMINISTRATION AND DOSAGE

Adults: Initially, 5 g (two 2.5-g vials) IV infused over 15 min (approximately 15 mL/min or 7.5 min per vial). A second 5-g dose infused over 15 min to 2 hr (depending on patient status), for a total of 10 g, may be administered based on clinical response and severity of cyanide poisoning

Children: Doses of 70 mg/kg IV have been used; not FDA approved

Lidocaine (Xylocaine)

THERAPEUTIC EFFECTS

Suppresses ventricular ectopic activity by decreasing the excitability of heart muscle and the cardiac conduction system.

INDICATIONS

To SUPPRESS PREMATURE VENTRICULAR CONTRACTIONS (PVC's) when:

1). They occur in the context of myocardial ischemia.

2). They are frequent (more than 6/min.).

3). They occur in salvos (two or more in a row).

4). They fall on the T wave (R-on-T phenomenon).

5). They are multifocal (of different shapes and sizes).

CONTRAINDICATIONS

1). Known history of allergy to lidocaine or local anesthetics (e.g., Novocain).

2). Second - or third - degree heart block.

3). Sinus bradycardia or sinus arrest.

4). Idioventricular rhythm.

SIDE EFFECTS

1). By decreasing the force of cardiac contractions as well as decreasing peripheral resistance, may cause a fall in cardiac output and blood pressure.

2). May cause numbness, drowsiness, or confusion.

3). When given in high doses, especially to the elderly or to patients in heart failure, may cause seizures.

HOW SUPPLIED

1). Prefilled syringes containing 100mg in 5ml (20mg/ml) for bolus injection.

2). Prefilled additive syringe 2gm for making up infusion solution.

ADMINISTRATION AND DOSAGE

Given by intravenous bolus and infusion. If an intravenous route cannot be established, lidocaine may be given via the endotracheal tube and the dosage increased to 3mg/kg.

Dosage: 1.5 mg/kg IV push followed by infusion of 2mg/min. To prepare the infusion, add 2gm of lidocaine to 500ml D5W, yielding a solution of 4mg/ml. Use a microdrip infusion set for administration. Reduce the dosage (both bolus and infusion) by half for patients in congestive heart failure or shock and for patients over 70 years old.

Lidocaine Drip Rates

Bolus Drip

1mg/kg 2mg/min.

2mg/kg 3mg/min.

3mg/kg 4mg/min.

Lorazepam (Ativan)

THERAPEUTIC EFFECTS

Lorazepam is a benzodiazepine with antianxiety and anticonvulsant effects. When given by injection, it appears to suppress the propagation of seizure activity produced by.

INDICATIONS

Agitation requiring sedation
Initial control of status epilepticus or severe recurrent seizures

CONTRAINDICATIONS

1. Hypersensitivity to the drug
2. Substance abuse (relative)
3. Coma (unless seizing)
4. Severe hypotension
5. Shock
6. Preexisting central nervous system depression
7.

SIDE EFFECTS

Lorazepam may precipitate central nervous system depression and psychomotor impairment when the patient is taking central nervous system depressant medications.

1). Because each mEq of bicarbonate comes along with a mEq of sodium, sodium bicarbonate has the same effect as any other saltcontaining infusion, i.e., it increases the vascular volume. Three 50ml syringes of sodium bicarbonate (1mEq/ml) contain approximately the

same amount of salt as 1 liter of normal saline. Patients in borderline heart failure cannot tolerate salt loads of this magnitude.

2). Administration of sodium bicarbonate lowers serum potassium. In some cases, this is the desired effect, as when bicarbonate is used to treat hyperkalemia. However, in cardiac patients, if the potassium falls too low, the heart becomes irritable, and dysrhythmias may occur. This is especially likely in patients taking diuretics.

3). Sodium bicarbonate administration transiently raises the arterial carbon dioxide level, and thus its administration must be accompanied by controlled hyperventilation (e.g., with bag-valve-mask) to blow off this excess CO2.

HOW SUPPLIED

2 and 4 mg/mL concentrations in 1-mL vials

ADMINISTRATION AND DOSAGE

Before IV administration, lorazepam must be diluted with an equal volume of sterile water or sterile saline. When given IM, lorazepam is not to be diluted. Adult: 1-4 mg slow IM/IV over 2-10 min; may be repeated in 15-20 min to a max dose of 8 mg

Pediatric (not FDA-approved): 0.05-0.1 mg/kg slow IV/IO/IM over 2 min; may be repeated once in 5-10 min to a max dose of 4 mg; 0.1-0.2 mg/kg (rectal dose).

Magnesium Sulfate

THERAPEUTIC EFFECTS

Magnesium Sulfate is a salt that dissociates into the Magnesium cation and the sulfate anion when administered. Magnesium is an essential element in numerous biochemical reactions that occur within the body.

INDICATIONS

Magnesium Sulfate is used in refractory ventricular fibrillation, pulseless ventricular tachycardia, post-myocardial infarction for prophylaxis of arrhythmias, and torsade de pointes or multiaxial ventricular tachycardia. It is also used in severe bronchospasm, and in eclampsia.

CONTRAINDICATIONS

Shock, persistent severe hypertension, third degree AV block, routine dialysis patients, known hypocalcemia.

SIDE EFFECTS

Flushing, sweating, bradycardia, decreased deep tendon reflexes, drowsiness, respiratory depression, arrhythmia, hypotension, hypothermia, itching, and rash.

HOW SUPPLIED

10%, 12.5%, 50% solution in 40, 80, 100, and 125 mg/mL

ADMINISTRATION AND DOSAGE

Refer to specific protocols.

Midazolam (Versed)

THERAPEUTIC EFFECTS

Midazolam hydrochloride is a water-soluble benzodiazepine that may be administered for conscious sedation to relieve apprehension or impair memory before tracheal intubation or cardioversion. The drug may also be used in the management of seizures in children.

INDICATIONS

Premedication for tracheal intubation, cardioversion, or other painful procedures
Seizures in children when other benzodiazepines are not effective

CONTRAINDICATIONS

1. Hypersensitivity to midazolam
2. Glaucoma (relative)
3. Shock
4. Coma
5. Alcohol intoxication (relative; may be used for alcohol withdrawal)
6. Depressed vital signs
7. Concomitant use of barbiturates, alcohol, narcotics, or other central nervous system depressants

SIDE EFFECTS

1. Respiratory depression
2. Hiccups
3. Cough
4. Oversedation
5. Pain at the injection site
6. Nausea and vomiting
7. Headache
8. Blurred vision
9. Fluctuations in vital signs
10. Hypotension
11. Respiratory arrest
12. Sedative effect of midazolam may be accentuated by concomitant use of barbiturates, alcohol, or narcotics (and therefore should not be used in patients who have taken central nervous system depressants).

HOW SUPPLIED

2-, 5-, 10-mL vials (1 mg/mL)
1-, 2-, 5-, 10-mL vials (5 mg/mL)

ADMINISTRATION AND DOSAGE

Sedation

Adult: 1-2.5 mg slow IV (over 2-3 min); may be repeated if necessary in small increments (total max dose not to exceed 0.1 mg/kg)
Elderly: 0.5 mg slow IV (max: 1.5 mg in a 2-min period)
Pediatric: Loading dose: 0.05-0.2 mg/kg; then continue infusion 1-2 mcg/kg/min

Seizures

Adult: 5mg IV or IN; may be repeated
10mg IM
Pediatric: 0.1-0.15 mg/kg (max dose 5 mg) IV slow over 1-2 min or IM

Rapid Sequence Intubation

ONLY IF TRAINED AND APPROVED BY LOCAL OMD
Adult: 0.1-0.3 mg/kg IV/IO; max single dose: 10 mg

Morphine Sulfate

THERAPEUTIC EFFECTS

1). Decreases pulmonary edema by pooling blood in the peripheral circulation thereby reducing venous return to the heart; helps as well to allay the anxiety associated with pulmonary edema.

2). Potent analgesic, providing significant relief of pain in acute myocardial infarction and other conditions.

INDICATIONS

To RELIEVE PAIN in myocardial infarction and other selected conditions.

CONTRAINDICATIONS

1). Marked hypotension.

2). Respiratory depression, except that caused by pulmonary edema, where the drug may be used if ventilatory support is provided.

3). Asthma and chronic obstructive pulmonary disease.

4). In patients who have taken other depressant drugs, such as alcohol or barbiturates.

5). Head injury.

6). Undiagnosed abdominal pain.

SIDE EFFECTS

1). Hypotension (most likely in volume-depleted patients).

2). Increased vagal tone, leading to bradycardia. (This effect can be reversed with atropine.)

3). Respiratory depression. (This effect can be reversed with naloxone.)

4). Nausea and vomiting.

5). Urinary retention.

HOW SUPPLIED

Prefilled (tubex) syringes containing 10mg.

ADMINISTRATION AND DOSAGE

Given by titrated intravenous injections.

Dosage

Refer to specific protocol.

NOT TO EXCEED 10mg.

Naloxone (Narcan)

THERAPEUTIC EFFECTS

Specific antidote for narcotic agents. Reverses the actions of all narcotic drugs, including heroin, morphine, methadone, codeine, Demerol, Dilaudid, Darvon, paregoric, and Percodan. Naloxone is thus effective in counteracting the effects of overdose from any of these agents. Naloxone will reverse stupor, coma, respiratory depression, etc., when these are due to narcotic overdose. It is not effective in reversing coma from other causes.

INDICATIONS

To treat known NARCOTIC OVERDOSE or coma suspected to be due to narcotic overdose.

CONTRAINDICATIONS

None.

SIDE EFFECTS

1). Too rapid administration may precipitate projectile vomiting and ventricular dysrhythmias.
2). Administration to people who are physically dependent on narcotics may cause an acute withdrawal syndrome. For this reason, naloxone should be given very slowly, using improvement of respiratory status as an end point.
3). In general, the duration of action of naloxone is shorter than that of the narcotics it is used to counteract. Thus, the patient who has been successfully roused with naloxone may fall back into stupor or coma as the naloxone wears off. These patients must therefore be watched closely, and the dose of naloxone should be repeated as necessary.

HOW SUPPLIED

10ml multi-dose vials, containing 4.0mg (0.4mg/ml).

ADMINISTRATION AND DOSAGE

In the field, given by slow intravenous injection.

Dosage

Draw up 0.4 - 0.8mg (1 2ml) of naloxone in a 10ml syringe. Administer this solution VERY SLOWLY IV while monitoring the rate and depth of the patient's respirations. As soon as there is improvement in the respirations, stop giving the drug. It is preferable that the patient NOT wake up fully in the field, as these patients may be violent when brought abruptly out of coma. USE RESPIRATIONS AS A GUIDE. If there is no response to two doses, suspect overdose with another, non-narcotic drug.

Nerve Agent (Duodote)

THERAPEUTIC EFFECTS

DuoDote is a combination medicine used as an antidote to treat poisoning by a pesticide (insect spray) or a chemical that interferes with the central nervous system, such as nerve gas.

INDICATIONS

DuoDote is indicated for the treatment of poisoning by organophosphorus nerve agents as well as organophosphorus insecticides in adults and pediatric patients weighing more than 41 kg (90 pounds).

CONTRAINDICATIONS

None

SIDE EFFECTS

Dry mouth, dry nose, dry skin, blurred vision, dry eyes, increased sensitivity of eyes to light, confusion, headache, dizziness, drowsiness, fast heart rate, heart palpitations, flushing, urinary hesitancy or retention, muscle weakness, constipation, stomach or abdominal pain, bloating, nausea and vomiting, skin rash, loss of interest in sex, and impotence

INTERACTIONS

When administered together, aspirin and other anti-inflammatory agents may cause an increased incidence of side effects. Administration of aspirin with antacids may reduce blood levels by reducing absorption.

HOW SUPPLIED

Each single-dose DuoDote (atropine and pralidoxime chloride) autoinjector contains atropine (2.1 mg/0.7 mL; colorless to yellow solution, visible in front chamber) and pralidoxime chloride (600 mg/2 mL; colorless to yellow solution, not visible in rear chamber) and is available in a single unit carton.

ADMINISTRATION AND DOSAGE

Each single-dose DuoDote autoinjector contains the following in two separate chambers: front chamber (visible): a clear, colorless to yellow, sterile solution of atropine (2.1 mg/0.7 mL) back chamber (not visible): a clear, colorless to yellow, sterile solution of pralidoxime chloride (600 mg/2 mL) equivalent to pralidoxime (476.6 mg/2 mL) When activated, DuoDote sequentially administers both drugs intramuscularly through a single needle in one injection.

Nitroglycerin

THERAPEUTIC EFFECTS

The primary pharmacologic effect of nitroglycerin and related drugs is to relax smooth muscle, and the effects of nitroglycerin on the cardiovascular system are chiefly due to relaxation of vascular smooth muscle (hence vasodilation). Nitroglycerin provides relief of pain in angina, probably by dilating coronary arteries and thereby increasing blood flow through them as well as by decreasing myocardial oxygen demand. Through its vasodilating action on peripheral vessels, nitroglycerin promotes pooling of the blood in the systemic circulation and
decreases the resistance against which the heart has to pump (the afterload); these effects may be useful in treating congestive heart failure and tempary treatment for sever Hypertension.

INDICATIONS

1). To relieve the pain of ANGINA.
2). To treat selected cases of PULMONARY EDEMA due to LEFT HEART FAILURE.

CONTRAINDICATIONS

1). Increased intracranial pressure.
2). Glaucoma.
3). Hypotension.
4). Recent Viagra use.

SIDE EFFECTS

1). Transient, throbbing headache. (If headache does not occur, suspect that the nitroglycerin is outdated and no longer potent).
2). Hypotension.
3). Dizziness, weakness.

HOW SUPPLIED

Sublingual spray, tablets, paste.

ADMINISTRATION AND DOSAGE

Given sublingually (under the tongue). the patient should be semisitting or recumbent.

Dosage

Refer to specific protocol.

Normal Saline

THERAPEUTIC EFFECTS

Normal Saline contains 154mEq/L of sodium ions and approximately 154mEq/L of chloride ions. Because the concentration of sodium is near that of the blood, the solution is considered Isotonic.

INDICATIONS

Heat related problems (heat exhaustion, heat stroke) and hypovolemia.

CONTRAINDICATIONS

The use of 0.9%NaCl should not be considered in patients with congestive heart failure because circulatory overload can easily be induced.

PRECAUTIONS

Aspirin can cause GI upset and bleeding. Aspirin should be used with caution in patients who report allergies to NSAIDS.

SIDE EFFECTS

Overhydration can increase workload of the heart and precipitate congestive heart failure, respiratory symptoms (rapid breathing, pulmonary edema with overhydration), and metabolic issues such as fluid and electrolyte imbalances.

INTERACTIONS

Few in the emergency setting.

HOW SUPPLIED

250 mL, 500 mL and 1000 mL bags

ADMINISTRATION AND DOSAGE

Dose is dependent on weight and severity/type of condition

Oral Glucose

THERAPEUTIC EFFECTS
Increases blood sugar level.

INDICATIONS
Used for the treatment of hypolycemia.

CONTRAINDICATIONS
Unconscious or semiunconscious and unable to follow simple commands .

PRECAUTIONS
Care should be taken to prevent choking or aspiration of medication in semiconscious patient

SIDE EFFECTS
None

INTERACTIONS
When administered together, aspirin and other anti-inflammatory agents may cause an increased incidence of side effects. Administration of aspirin with antacids may reduce blood levels by reducing absorption.

HOW SUPPLIED
Tube: 15g

ADMINISTRATION AND DOSAGE
Refer to specific protocol.

Oxygen

THERAPEUTIC EFFECTS

Oxygen is an odorless, tasteless, colorless gas that is present in room air at a concentration of approximately 21%. Oxygen is an important emergency drug used to reverse hypoxemia; in doing so, it helps oxidize glucose to produce adenosine triphosphate (aerobic metabolism). Oxygen may help reduce the size of infarcted tissue during an acute myocardial infarction (in patients who are hypoxemic on room air).

INDICATIONS

Any suspected cardiopulmonary emergency, confirmed or suspected hypoxia, ischemic chest pain Respiratory insufficiency, suspected stroke or ACS with hypoxemia (when oxygen saturation is unknown or < 94%), prophylactically during air transport, confirmed or suspected carbon monoxide poisoning and other causes of decreased tissue oxygenation (cardiac arrest)

CONTRAINDICATIONS

Oxygen should never be withheld in any critically ill patient.

SIDE EFFECTS

High-concentration oxygen may cause decreased level of consciousness and respiratory depression in patients with chronic carbon dioxide retention.

INTERACTIONS

None significant.

HOW SUPPLIED

Oxygen cylinders (usually green and white) or wall-mounted delivery devices that supply 100% compressed oxygen gas.

ADMINISTRATION AND DOSAGE

Adult and child: Administer highest possible concentration during initial evaluation and stabilization; then administer to maintain oxygen saturation of 94-99%
High-concentration: 10-15 L/min via nonrebreather mask or high-fl ow oxygen delivery device

Low concentration: 1-4 L/min via nasal cannula Venturi mask concentrations (e.g., 24%, 28%, 32%, 36%) for intermediate rates of oxygen administration in patients with chronic obstructive pulmonary disease.

Plavix (Generic: Clopidogrel (as bisulfate))

THERAPEUTIC EFFECTS

Plavix is a blood-thinning medication used to treat coronary heart disease and peripheral vascular disease.

INDICATIONS

To reduce the rate of MI and stroke in patients with: non-ST-segment elevation acute coronary syndrome (unstable angina/non-ST-elevation MI) or acute ST-elevation MI; history of recent MI, recent stroke, or established peripheral arterial disease; see full labeling.

CONTRAINDICATIONS

Active pathologic bleeding (eg, peptic ulcer, intracranial hemorrhage).

PRECAUTIONS

CYP2C19 poor metabolizers: diminished effectiveness in those who are homozygous for nonfunctional alleles of the CYP2C19 gene. Nursing mothers: not recommended.

SIDE EFFECTS

Bleeding (may be fatal), epistaxis, hematuria, bruising, ulcers, rash; hypersensitivity reactions, thrombotic thrombocytopenic purpura.

INTERACTIONS

Avoid concomitant CYP2C19 inhibitors (eg, omeprazole, esomeprazole). Antagonized by opioid agonists (eg, morphine, others); consider using IV anti-platelet agent instead. Caution with concomitant other drugs that increase risk of bleeding (eg, NSAIDs, warfarin, SSRI, SNRI). Avoid concomitant repaglinide; if unavoidable, initiate repaglinide at 0.5mg before each meal; max 4mg/day; monitor glucose frequently.

HOW SUPPLIED

Tabs 75mg—30, 90, 100, 500; 300mg—30

ADMINISTRATION AND DOSAGE

Adult:

Acute coronary syndrome (give with aspirin): initially give one 300mg loading dose, then continue at 75mg once daily. Recent MI, recent stroke, or established peripheral arterial disease: 75mg once daily without a loading dose.

Children:

Not established.

Prochlorperazine (Compazine)

THERAPEUTIC EFFECTS

Prochlorperazine is an anti-psychotic medication in a group of drugs called phenothiazines. It can be used to treat psychotic disorders such as schizophrenia and/or anxiety; however, for the purposes of prehospital protocols herein, it is used only to control severe nausea and vomiting.

INDICATIONS

This medication is used to treat severe nausea and vomiting from certain causes (for example, after surgery or cancer treatment)

CONTRAINDICATIONS

Do not use in patients with known hypersensitivity to phenothiazines. Do not use in comatose states or in the presence of large amounts of central nervous system depressants (alcohol, barbiturates, narcotics, etc.). Do not use in pediatric surgery. Do not use in pediatric patients under 2 years of age or under 20 lbs. Do not use in children for conditions for which dosage has not been established.

SIDE EFFECTS

Drowsiness, dizziness, amenorrhea, blurred vision, skin reactions and hypotension may occur. Hypotension is a possibility if the drug is given by IV injection or infusion.

INTERACTIONS

Drugs including cabergoline, dofetilide, metoclopramide. Other products that cause drowsiness such as opioid pain or cough relievers (such as codeine, hydrocodone), alcohol, marijuana, drugs for sleep or anxiety (such as alprazolam, lorazepam, zolpidem), muscle relaxants (such as carisoprodol, cyclobenzaprine), or antihistamines (such as cetirizine, diphenhydramine). Potentiates CNS depression with alcohol, other CNS depressants. Potentiates α-blockers.

HOW SUPPLIED

2 mL (10 mg) vials packaged in 25s.

ADMINISTRATION AND DOSAGE

ADULT: 5 mg (0.5 to 2 mL) by slow IV injection or infusion at a rate not to exceed 5 mg per minute. When administered IV, do not use bolus injection.

2 YEARS AND OLDER: Calculate each dose on the basis of 0.06 mg of the drug per lb of body weight; give by deep IM injection. Control is usually obtained with one dose.

Promethazine (Phenergan)

THERAPEUTIC EFFECTS

Phenergan is most commonly used as an anti-emetic in the prehospital setting.

INDICATIONS

1). Nausea and vomiting.
2). Motion sickness.
3). To potentiate the effects of analgesics.
4). Sedation.

CONTRAINDICATIONS

1). Unresponsiveness.
2). Patients who have taken large amounts of depressants.

SIDE EFFECTS

1). Drowsiness.
2). Sedation.
3). Blurred vision.
4). Tachycardia.
5). Bradycardia.
6). Dizziness.
7). Acute Dystonia

HOW SUPPLIED

Ampules and Tubex syringes containing 25 mg of the drug in 1 ml of solvent.

ADMINISTRATION AND DOSAGE

Refer to specific protocol.
Take care to avoid accidental arterial injection. Should be diluted with 10 ml of saline.

If acute Dystonia occurs administer 25mg of Benadryl IM.

Rocuronium

THERAPEUTIC EFFECTS

Rocuronium bromide (brand names Zemuron , Esmeron) is an aminosteroid non-depolarizing neuromuscular blocker or muscle relaxant used in modern anaesthesia to facilitate tracheal intubation by providing skeletal muscle relaxation, most commonly required for surgery or mechanical ventilation . It is used for both standard endotracheal intubation and rapid sequence

INDICATIONS

For the induction of general anesthesia.

CONTRAINDICATIONS

Patients known to have hypersensitivity (e.g., anaphylaxis) to rocuronium or other neuromuscular blocking agents.

SIDE EFFECTS

Nausea, vomiting; swelling or discomfort where the medicine was injected.

HOW SUPPLIED

10mg in 2ml.

ADMINISTRATION AND DOSAGE

Refer to specific protocol.

Sodium Bicarbonate

THERAPEUTIC EFFECTS

By neutralizing excess acid, helps return the blood towards a physiologic pH, in which normal metabolic processes and sympathomimetic agents (such as epinephrine) work more effectively.

INDICATIONS

1). To treat METABOLIC ACIDOSIS, as in:
a. Certain POISONING (e.g., ethylene glycol).
b. SHOCK and other low-output states (e.g., after resuscitation from cardiac arrest).
2). To treat HYPERKALEMIA (high serum potassium).
3). To promote the excretion of some types of BARBITURATES taken in OVERDOSE.
4). Cardiac Toxicity due to TCA or Cocaine overdose.

CONTRAINDICATIONS

1). Hypokalemia (low serum potassium), sometimes detectable by large, prominent P waves and large U waves on the ECG.
2). Increased intracranial pressure.
3). Glaucoma.
4). Hypotension.

SIDE EFFECTS

1). Because each mEq of bicarbonate comes along with a mEq of sodium, sodium bicarbonate has the same effect as any other saltcontaining infusion, i.e., it increases the vascular volume. Three 50ml syringes of sodium bicarbonate (1mEq/ml) contain approximately the
same amount of salt as 1 liter of normal saline. Patients in borderline heart failure cannot tolerate salt loads of this magnitude.
2). Administration of sodium bicarbonate lowers serum potassium. In some cases, this is the desired effect, as when bicarbonate is used to treat hyperkalemia. However, in cardiac patients, if the potassium falls too low, the heart becomes irritable, and dysrhythmias may occur. This is especially likely in patients taking diuretics.
3). Sodium bicarbonate administration transiently raises the arterial carbon dioxide level, and thus its administration must be accompanied by controlled hyperventilation (e.g., with bag-valve-mask) to blow off this excess CO2.

HOW SUPPLIED

Vials and prefilled syringes of 50ml, containing 1mEq/ml.

ADMINISTRATION AND DOSAGE

Given by intravenous bolus injection. As ordered by physician.

SOLU-MEDROL
(Methylprednisolone)

THERAPEUTIC EFFECTS

Effective as an anti-inflammatory agent used to manage asthma, anaphylaxis, and spinal cord injury.

INDICATIONS

1). Spinal cord injury.
2). Anaphylaxis.
3). Asthma.
4). Exacerbation on COPD.
5). Sever Head Injury or Spinal Cord injury

CONTRAINDICATIONS

There are no major contraindications for Solu-Medrol in an emergency setting.

SIDE EFFECTS

1). Fluid retention.
2). Congestive heart failure.
3). Hypertension.
4). Abdominal distention.
5). Vertigo.
6). Headache.
7). Nausea.
8). Malaise.
9). Hiccups.

HOW SUPPLIED

Supplied in vials containing 125 and 250 mg. The drug must be reconstituted prior to administration. 2.5 grams required for adult spinal cord injury.

DOSAGE

Contact Medical Control for appropriate dosage prior to administration.

Succinylcholine

THERAPEUTIC EFFECTS

Succinylcholine is a skeletal muscle relaxant for intravenous (IV) administration indicated as an adjunct to general anesthesia, to facilitate tracheal intubation, and to provide skeletal muscle relaxation during surgery or mechanical ventilation.

INDICATIONS

For the induction of general anesthesia.

CONTRAINDICATIONS

History of Malignant Hyperthermia

SIDE EFFECTS

Life threatening elevation in body temperature (malignant hyperthermia) Rrigidity .Low blood pressure (hypotension) Muscle fasciculation which may result in postoperative pain Muscle relaxation resulting in respiratory depression to the point of breathing cessation (apnea) Respiratory depression Salivary gland enlargement

HOW SUPPLIED

200mg/10ml

ADMINISTRATION AND DOSAGE

Refer to specific protocol.

Vecuronium

THERAPEUTIC EFFECTS

Medication used as part of general anesthesia to provide skeletal muscle relaxation during surgery or mechanical ventilation. It is also used to help with endotracheal intubation.

INDICATIONS

For the induction of general anesthesia.

CONTRAINDICATIONS

Hypersensitivity, in addition, should not be used if you have the following conditions: Altered blood pH or dehydration. Biliary tract disease or kidney failure. Burns.

SIDE EFFECTS

Anaphylactic reaction, anaphylactoid reactions, bronchospasm, hypotension, tachycardia, acute urticaria and erythema.

HOW SUPPLIED

10mg powder must be mixed with 10 ml of saline.

ADMINISTRATION AND DOSAGE

Refer to specific protocol.

Zofran (Generic: Odansetron)

THERAPEUTIC EFFECTS

Selective 5-HT3 receptor antagonist used to treat nausea and vomiting.

INDICATIONS

Treatment of nausea and vomiting, especially in patients when mental status needs to be evaluated (intracranial hemorrhage, stroke, head trauma, etc).

CONTRAINDICATIONS

Known sensitivity to the drug

SIDE EFFECTS

1. Dizziness
2. Fatigue
3. Dry mouth

HOW SUPPLIED

4mg/2ml vial (2mg/ml)

ADMINISTRATION AND DOSAGE

Refer to specific protocol.

EMS DISPATCH DIRECTORY

Dispatch Center	Frequency (MHz)	PL Tone (Hz)
Bland County Sherriff's Dept. — Bland	155.955 RX 153.905 TX	 141.3
Bluefield, VA Police Dept.	155.175	82.5
Bristol Station A	462.975 RX 467.975 TX	 179.9
Buchanan County Sherriff's Dept. — Grundy	155.160	192.8
Carroll County Sherriff's Dept. — Hillsville	155.265	107.2
Dickenson County Sherriff's Dept. — Clintwood	155.265	229.1
Galax Police Dept.	155.175	107.2
Grayson County Sherriff's Dept. — Independence (Point Lookout)	155.940 RX 153.815 TX	 114.8
Lee County	155.160	229.1

Sherriff's Dept.
— Jonesville

Dispatch Center	Frequency (MHz)	PL Tone (Hz)
Norton Police Dept.	155.175	229.1
Richlands Police Dept.	155.175	82.5
Russell County	155.295	88.5
Central Dispatch	155.205	88.5
— Lebanon	155.085 RX	
	158.955 TX	88.5
Scott County	155.235	229.1
Central Dispatch	154.340 RX	
— Gate City	153.950 TX	131.8
Smyth County Control	155.280	82.5
— Marion		
Tazewell County	155.175	82.5
Central Dispatch		
Washington County	155.160	88.5
Central Dispatch	155.865	88.5
	155.205	88.5
Wise County	155.175	229.1
Central Dispatch		
Wythe County	155.160	141.3
Sherriff's Dept.		

HOSPITAL DIRECTORY

BLUEFIELD REGIONAL MEDICAL CENTER
500 Cherry Street, Bluefield, WV

ER Phone No. — (304) 327-1500

VHF Frequencies
155.340
VHF CTCSS N/A
VHF Dial N/A

BRISTOL REGIONAL MEDICAL CENTER
TRAUMA CENTER-LEVEL II
1 Medical Park Blvd., Bristol, TN 37620

ER Phone No. — (423) 844-2100

VHF Frequencies 155.340
VHF CTCSS 88.5
VHF Dial 023
MED Channels MED Tones
4, 7 179.9

BUCHANAN GENERAL HOSPITAL - SLATE CREEK
Route 5, P. O. Box 20, Grundy, VA 24614

ER Phone No. — (276) 935-1155

VHF Frequencies 155.340
VHF CTCSS 192.8

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BLUEFIELD REGIONAL MEDICAL CENTER
500 Cherry Street, Bluefield, WV

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ER Phone No. — (276) 935-1155

VHF Frequencies 155.340
VHF CTCSS 192.8

HOSPITAL DIRECTORY

CLINCH VALLEY MEDICAL CENTER
2949 West Front Street, Richlands, VA

ER Phone No. — (276) 596-6153

VHF Frequencies 155.340
VHF CTCSS 82.5

DICKENSON COMMUNITY HOSPITAL
312 Hospital Dr, Clintwood, VA 24228

ER Phone No. — (276) 926-0312

VHF Frequencies 155.340
VHF CTCSS 229.1
VHF Dial N/A

HOLSTON VALLEY MEDICAL CENTER
TRAUMA CENTER - LEVEL I
130 W. Ravine Road, Kingsport, TN 37664

EMS Line — (423) 224-5121 (Most Direct)

VHF Frequencies 155.340
VHF CTCSS N/A
VHF Dial 026
MED Channels MED Tones
2, 4, 6, 8 173.8

HOSPITAL DIRECTORY

INDIAN PATH HOSPITAL
2000 Brookside Drive, Kingsport, TN

ER Phone No. — (423) 392-7134

VHF Frequencies 155.340
VHF CTCSS N/A
VHF Dial 049

JOHNSON CITY MEDICAL CENTER HOSPITAL TRAUMA CENTER - LEVEL I
400 North State of Franklin Road, Johnson City, TN

ER Phone No. — (423) 431-6561

VHF Frequencies 155.340
VHF CTCSS MUST BE ACCESSED BY ENCODER, if you have no encoder, CONTACT: "Johnson City Med Comm" on 155.205 to encode.
VHF Dial 03555

JOHNSTON MEMORIAL HOSPITAL

351 North Court Street, Abingdon, VA 24210

ER Phone No. — (276) 628-3821

VHF Frequencies 155.340 / 155.400
VHF CTCSS 88.5

HOSPITAL DIRECTORY

LEE REGIONAL MEDICAL CENTER
Harrell Street, P. O. Box 70, Pennington Gap, VA 24277

ER Phone No. — (276) 546-1440

VHF Frequencies 155.340
VHF CTCSS N/A

LONESOME PINE HOSPITAL
Holston Avenue, Drawer I, Big Stone Gap, VA 24219

ER Phone No. — (276) 523-3111

VHF Frequencies 155.340
VHF CTCSS 110.9

NORTON COMMUNITY HOSPITAL
100 15th Street, North West, Norton, VA 24273

ER Phone No. — (276) 679-9648

VHF Frequencies 155.340
VHF CTCSS 229.1

HOSPITAL DIRECTORY

PULASKI COMMUNITY HOSPITAL
2400 Lee Highway, P. O. Box 759, Pulaski, VA 24301

ER Phone No. — (540) 980-6192

VHF Frequencies 155.340
VHF CTCSS 146.2
VHF Dial NONE
MED Channels MED Tones
1, 3, 4, 7, 9, 10 103.5
103.5 (Access on MED 9/10 via Pulaski SO)

RUSSELL COUNTY MEDICAL CENTER
Carroll & Tate Streets, Call Box 3600, Lebanon, VA 24266

ER Phone No. — (276) 883-8200

VHF Frequencies 155.385, 155.340
VHF CTCSS 88.5

MOUNTAIN VIEW REGIONAL MEDICAL CENTER
Third Street, North East, Norton, VA 24273

ER Phone No. — (276) 679-1151

VHF Frequencies 155.340
VHF CTCSS 229.1

HOSPITAL DIRECTORY

SMYTH COUNTY COMMUNITY HOSPITAL
P. O. Box 880, Marion, VA 24354

ER Phone No. — (276) 782-1380

VHF Frequencies 155.340
VHF CTCSS 151.4

TAZEWELL COMMUNITY HOSPITAL
141 Ben Bolt Avenue, Rt. 1, P. O. Box 607, Tazewell, VA 24651

ER Phone No. — (276) 988-2506

VHF Frequencies 155.340
VHF CTCSS 82.5
VHF Dial 2222

TWIN COUNTY REGIONAL HOSPITAL
200 Hospital Drive, Galax, VA 24333

ER Phone No. — (276) 236-8181

VHF Frequencies 155.340
VHF CTCSS 114.8
VHF Dial 172-6822

HOSPITAL DIRECTORY

VETERAN'S ADMINISTRATION MOUNTAIN HOME HOSPITAL

Johnson City, TN 37684

ER Phone No. — (423) 926-1171 Ext. 7521

VHF Frequencies 155.340
VHF CTCSS N/A
VHF Dial 03888

WYTHE COUNTY COMMUNITY HOSPITAL

600 West Ridge Road, Wytheville, VA 24382

ER Phone No. — (276) 228-0258

VHF Frequencies 155.340
VHF CTCSS 141.3