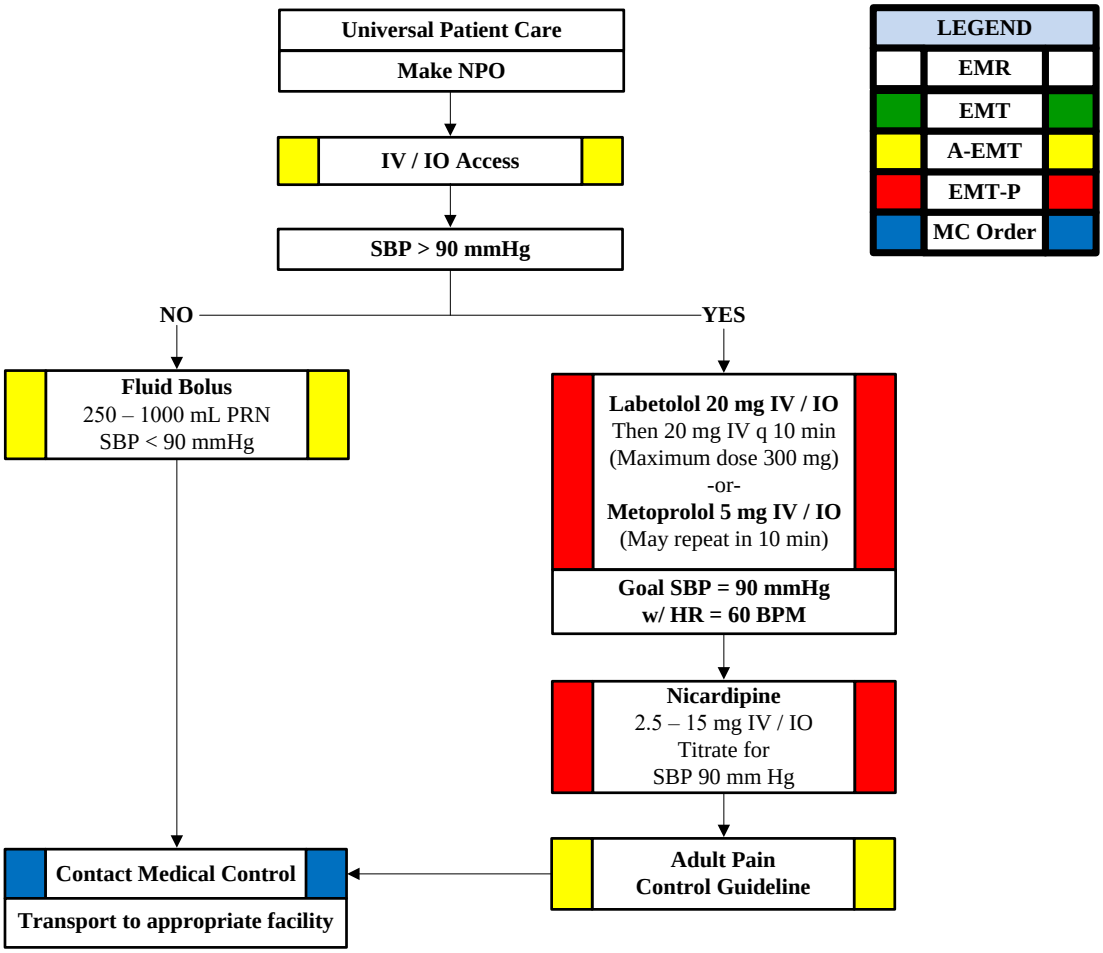
# TAB 3

# ADULT MEDICAL EMERGENCY GUIDELINES

# TAB 3 GUIDELINE 1

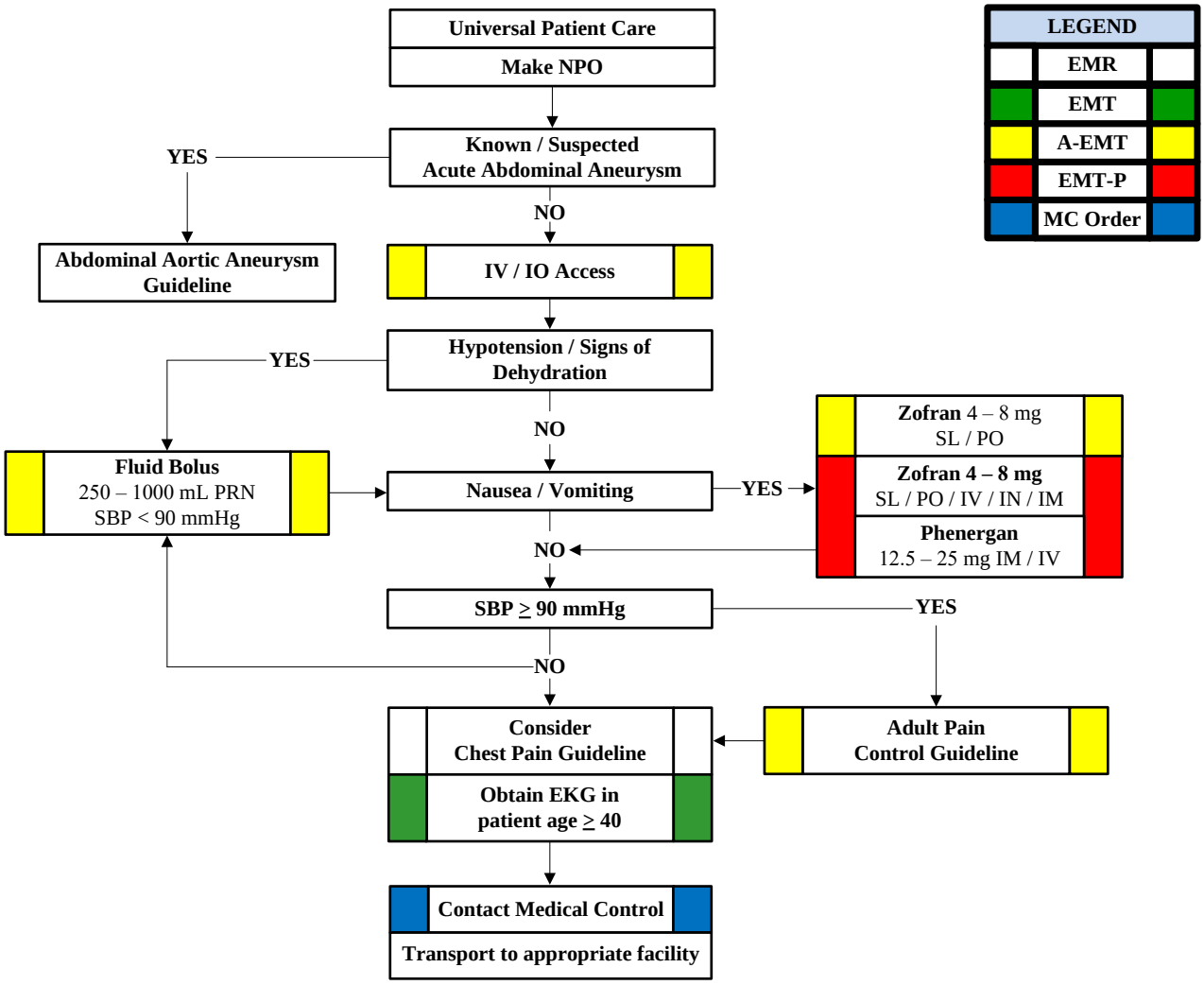
## ABDOMINAL AORTIC ANEURYSM

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Age<br>• Past medical / surgical history<br>• Medications<br>• Onset of pain / injury<br>• Previous back injury<br>• Location of pain<br>• Palliation / Provocation<br>• Region / Radiation / Referred<br>• Severity (1-10)<br>• Time (duration / repetition) | • Pain (paraspinour, spinous process)<br>• Swelling<br>• Pain with range of motion<br>• Extremity weakness<br>• Extremity numbness<br>• Shooting pain into an extremity<br>• Bowel / bladder dysfunction | • Muscle spasm / strain<br>• Herniated disc with nerve compression<br>• Sciatica<br>• Spine fracture<br>• Kidney stone<br>• Pyelonephritis<br>• Aneurysm |



# TAB 3 GUIDELINE 2
# ABDOMINAL PAIN

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Age<br>• Past medical / surgical history<br>• Medications<br>• Onset<br>• Palliation / Provocation<br>• Quality (crampy, constant, sharp, dull, etc)<br>• Region / Radiation / Referred<br>• Severity (1-10)<br>• Time (duration / repetition)<br>• Fever<br>• Last meal eaten<br>• Last bowel movement<br>• Menstrual history (pregnancy) | • Pain (location / migration)<br>• Tenderness<br>• Nausea<br>• Vomiting<br>• Diarrhea<br>• Dysuria<br>• Constipation<br>• Vaginal bleeding / discharge<br>• Pregnancy<br><br>**ASSOCIATED SYMPTOMS:**<br>• Fever, headache, weakness, malaise, myalgias, cough, headache, mental status changes, rash | • Pneumonia or Pulmonary embolus<br>• Liver (hepatitis, CHF)<br>• Peptic ulcer disease / Gastritis<br>• Gallbladder / Pancreatitis<br>• Myocardial infarction<br>• Kidney stone<br>• Abdominal aneurysm<br>• Appendicitis / Diverticulitis<br>• Bladder / Prostate disorder<br>• Pelvic (PID, Ectopic pregnancy, Ovarian cyst)<br>• Spleen enlargement<br>• Bowel obstruction<br>• Gastroenteritis (infectious) |



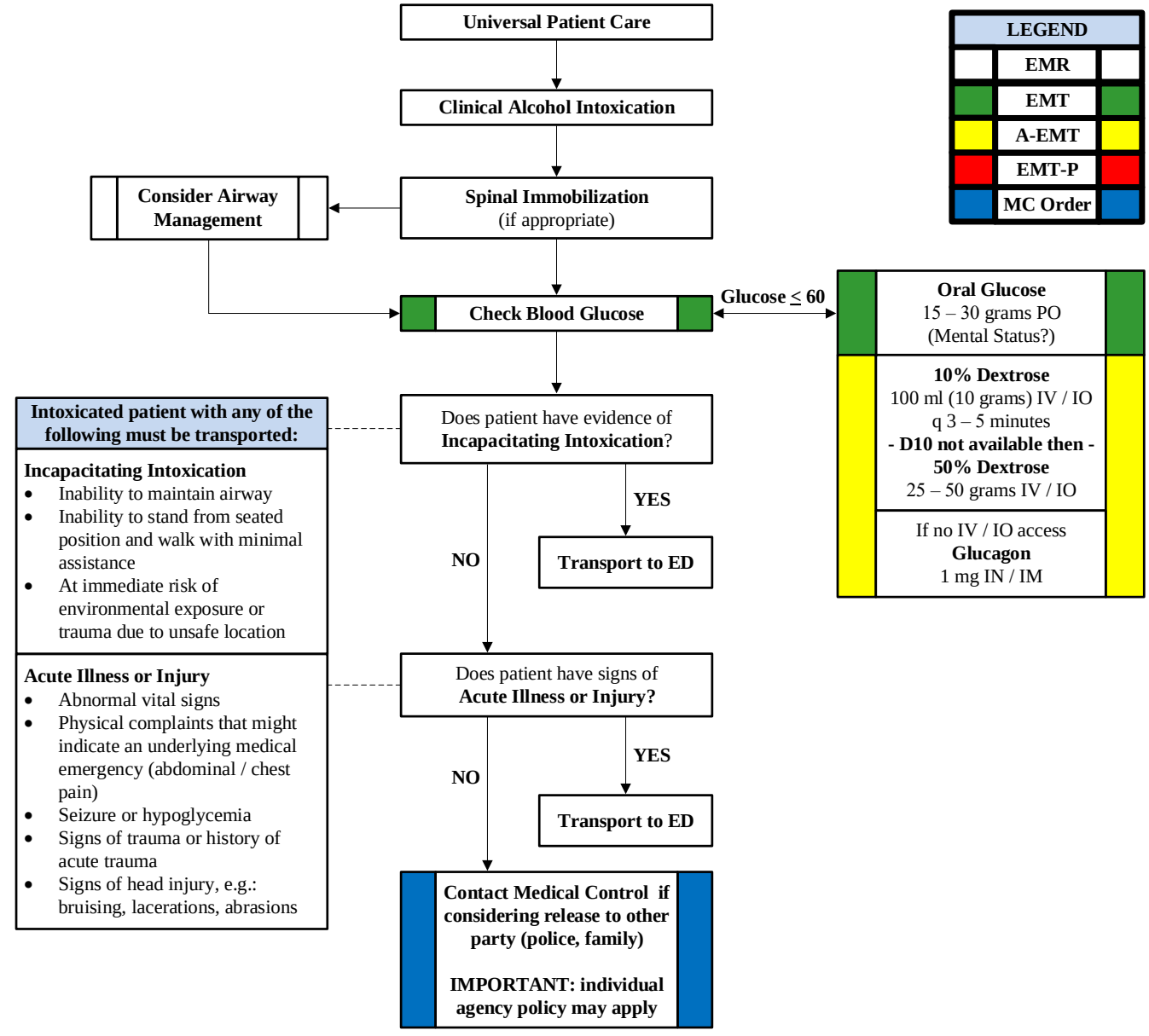
**SPECIAL CONSIDERATIONS:**

1. The differential (causes) of abdominal pain is numerous, with origin rarely identified in a field setting. Assessment should be centered upon gathering as much information as possible related to the complaint of "abdominal pain."
2. Consider internal hemorrhage with an associated shock presentation. For blood pressure < 90 mmHg, consider initial fluid bolus of 250 – 500 mL NS (repeat PRN for perfusing BP). Elderly patients may have significant hypovolemic shock with blood pressures above 90mmHg.
3. Abdominal pain in women of childbearing age should be treated as an ectopic pregnancy until proven otherwise.
4. The diagnosis of abdominal aneurysm should be considered with abdominal pain in patients over age 50.
5. Appendicitis presents with vague, peri-umbilical pain which migrates to the RLQ over time.
6. Symptoms of dehydration
    a. Increased thirst / dry mouth
    b. Headache
    c. Weakness / confusion
    d. Dizziness / light headed / fainting
    e. Palpitations
    f. Decreased urine output

# TAB 3 GUIDELINE 3

# ALCOHOL INTOXICATION

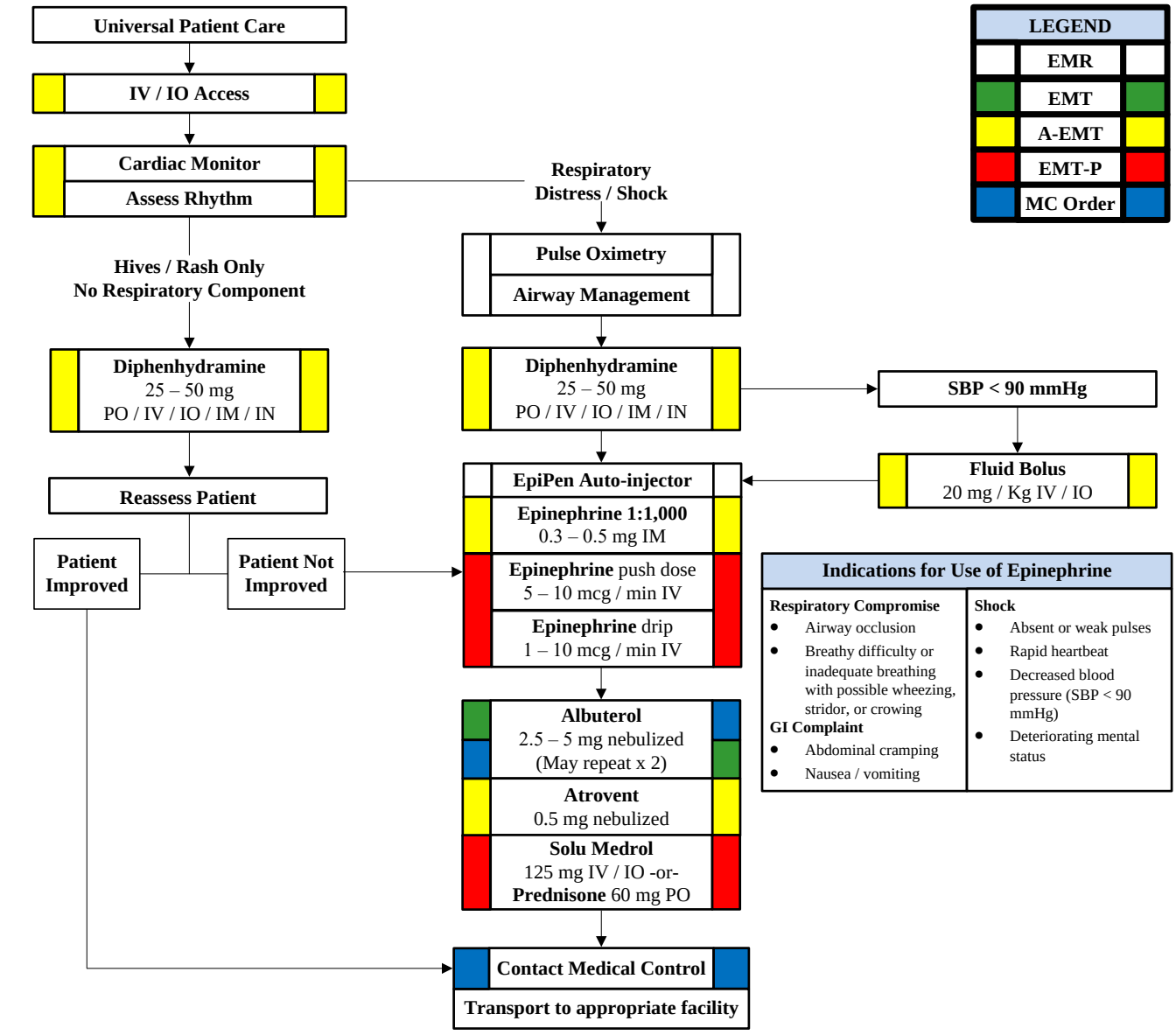
| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Known diabetic, medic alert tag<br>• Drugs, drug paraphernalia<br>• Report of illicit drug use or toxic ingestion<br>• Past medical history<br>• Medications<br>• History of trauma<br>• Change in condition | • Decreased mental status<br>• Change in baseline mental status<br>• Bizarre behavior<br>• Hypoglycemia (cool, diaphoretic skin)<br>• Hyperglycemia ( warm, dry skin; fruity breath; Kussmaul respirations; signs of dehydration) | • Diabetes (hyper / hypoglycemia<br>• Toxicologic<br>• Acidosis / Alkalosis<br>• Environmental exposure<br>• Electrolyte abnormality<br>• Trauma<br>• Sepsis |



# TAB 3 GUIDELINE 4

## ALLERGIC REACTION | ANAPHYLAXIS

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Onset and location<br>• Insect sting or bite<br>• Food allergy / exposure<br>• Medication history / allergy / exposure<br>• New clothing, soap, detergent<br>• Past history of reactions<br>• Past medical history | • Itching or hives<br>• Coughing / wheezing or respiratory distress<br>• Chest or throat constriction<br>• Difficulty swallowing<br>• Hypotension or shock<br>• Hypotension or shock / Edema<br>• Abdominal cramps | • Urticaria (rash only)<br>• Anaphylaxis (systemic effect)<br>• Shock (vascular effect)<br>• Angioedema (drug induced)<br>• Aspiration / Airway obstruction<br>• Vasovagal event<br>• Asthma<br>• CHF |



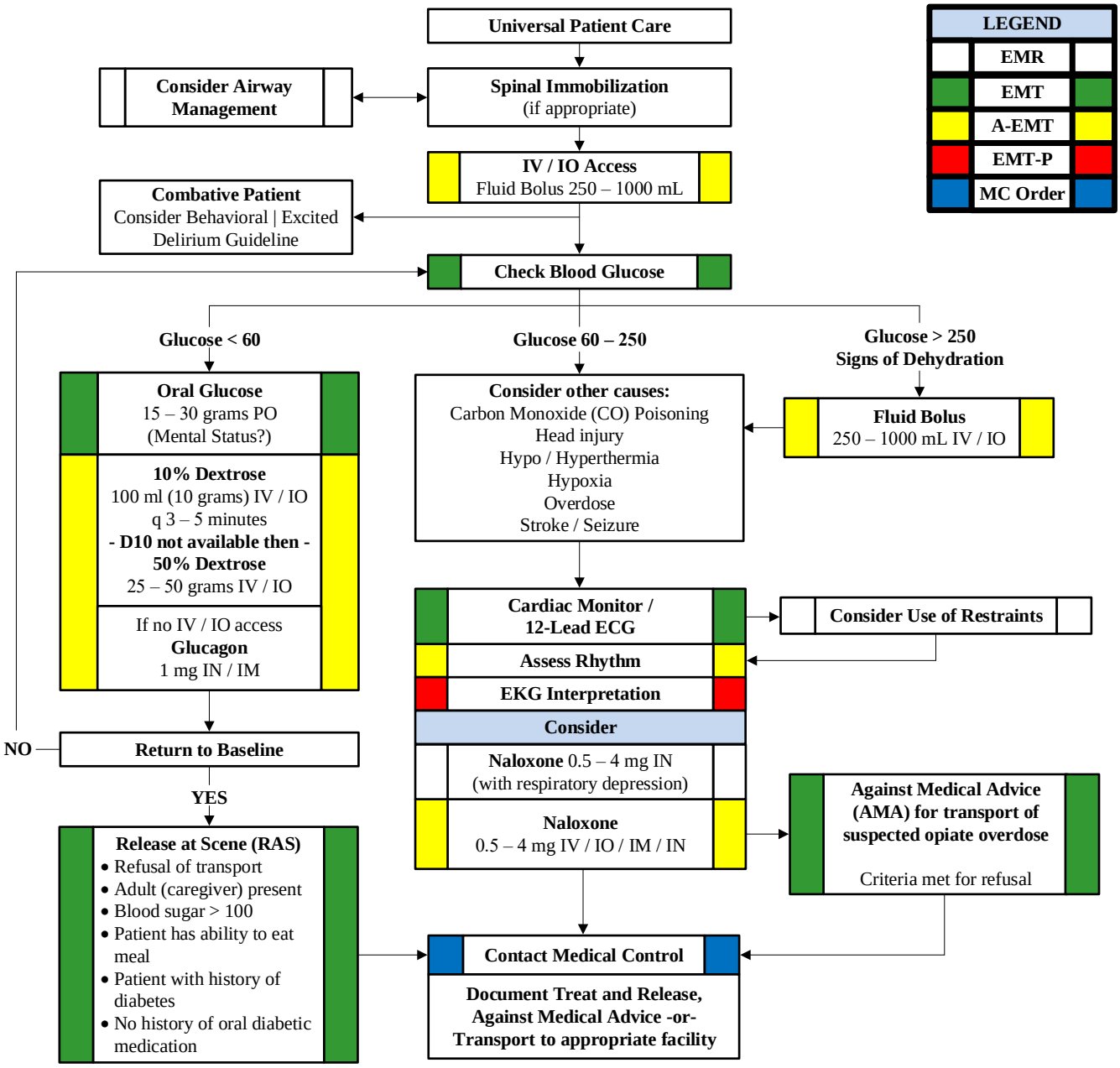
**SPECIAL CONSIDERATIONS:**

1. Patients with allergic reactions can deteriorate quickly. Airway is a prime concern.
2. Epinephrine should be administered for:
    a. **Respiratory Compromise**
        i. Airway occlusion
        ii. Breathy difficulty or inadequate breathing with possible wheezing, stridor, or crowing
    b. **GI Complaint**
        i. Abdominal cramping, nausea, vomiting
    c. **Shock**
        i. Absent or weak pulses
        ii. Rapid heartbeat
        iii. Decreased blood pressure (SBP < 90 mmHg)
        iv. Deteriorating mental status
3. Lethal edema may be localized to the tongue, uvula or other upper airway structures. Examine closely and be prepared to intubate early before swelling occurs. Nasal tracheal intubation may be preferred.
4. Any patient with respiratory symptoms or extensive reaction should receive IV or IM diphenhydramine (Benadryl).
5. Epinephrine
    a. If severe reaction with signs | symptoms of shock and / or airway involvement and ALS not available, then administer Epipen Auto-injector for **weight > 30 Kg (66 lbs).**
    b. Drip
        i. Mix 1 mg epinephrine (1:10,000 or 1:1000 concentration) in 250 ml bag normal saline or D5W to give 4:1 concentration, mix in 500 ml bag normal saline or D5W to give 2:1 concentration. Titrate 2 – 10 mcg / min
    c. Push dose
        i. Mix 0.1 mg (1 ml) epinephrine (1: 10,000) in 9 ml NS to give 10:1 concentration. Give 0.5 – 1 ml dose pushes every 1 – 2 minutes for blood pressure control
    d. Contact **On-Line Medical Control** prior to administering Epinephrine to patients who are > 50 years of age, have a history of cardiac disease, or if the patient's heart rate is > 150. Epinephrine may precipitate cardiac ischemia.

# TAB 3 GUIDELINE 5

## ALTERED MENTAL STATUS | COMA

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Known diabetic, medic alert tag<br>• Drugs, drug paraphernalia<br>• Report of illicit drug use or toxic ingestion<br>• Past medical history<br>• Medications<br>• History of trauma<br>• Change in condition | • Decreased mental status<br>• Change in baseline mental status<br>• Bizarre behavior<br>• Hypoglycemia<br>  • Cool, diaphoretic skin<br>• Hyperglycemia<br>  • Warm, dry skin<br>  • Fruity breath<br>  • Kussmaul respirations<br>  • Signs of dehydration | • Head trauma<br>• CNS (stroke, tumor, seizure, infection)<br>• Cardiac (MI, CHF)<br>• Infection / Toxicologic<br>• Thyroid (hyper / hypo)<br>• Shock (septic, metabolic, traumatic)<br>• Diabetes (hyper / hypoglycemia<br>• Electrolyte abnormality<br>• Acidosis / Alkalosis<br>• Environmental exposure<br>• Pulmonary (hypoxia)<br>• Psychiatric disorder |



**SPECIAL CONSIDERATIONS:**

1. If the patient wishes to refuse transportation to a hospital and you have administered any medications, you must contact on-line MEDICAL CONTROL prior to leaving the patient or completing the Against Medical Advice / Release At Scene form
2. Non-transport of hypoglycemic patient, Treat and Release guideline
    a. **Criteria:**
        i. Patient must be able to refuse transport as per patient exhibiting decisional capacity to make appropriate decisions
        ii. Following treatment of a hypoglycemia state, patient is conscious, alert to time, date and place, and requests that they not be transported to the hospital
        iii. Certain patients should be informed that their hypoglycemic state may not be an isolated issue and it is recommended that they be transported:
            1. Patients with other associated findings such as hypoglycemic episode, including excessive alcohol consumption, shortness of breath, chest pain, fever, etc
            2. Patients on oral hypoglycemic medication such as glipizide, glyburide or chlorpropamide (hypoglycemic episode may last hours or days)
            3. Patients who when treated with IV Dextrose take greater than 10 minutes to return to a normal level of consciousness
            4. Patient's history does not reveal circumstances that may have contributed to the hypoglycemic episode
        iv. Repeat rapid Glucose test is > 100 mg / dl
        v. The patient has a repeat SBP > 90 mmHg, pulse rate > 60 BPM
    b. **Guideline for Treat and Release:**
        i. If the criteria above are met, then the patient is a candidate for Treat and Release
        ii. The patient must be released to the care of a responsible individual who will remain with the patient as an observer for a reasonable time
        iii. The patient should be given both verbal and written instructions for follow-up care prior to being released
        iv. If another episode occurs, request medical assistance immediately
3. Non-transport of opiate overdose, Against Medical Advice Guidelines
    a. When dealing with patients that are suspected opiate overdose it is in their best interest to receive an evaluation and monitoring from hospital personnel. Many opiate containing

medications have the potential of causing somnolence and decreased respirations necessitating reversal medication

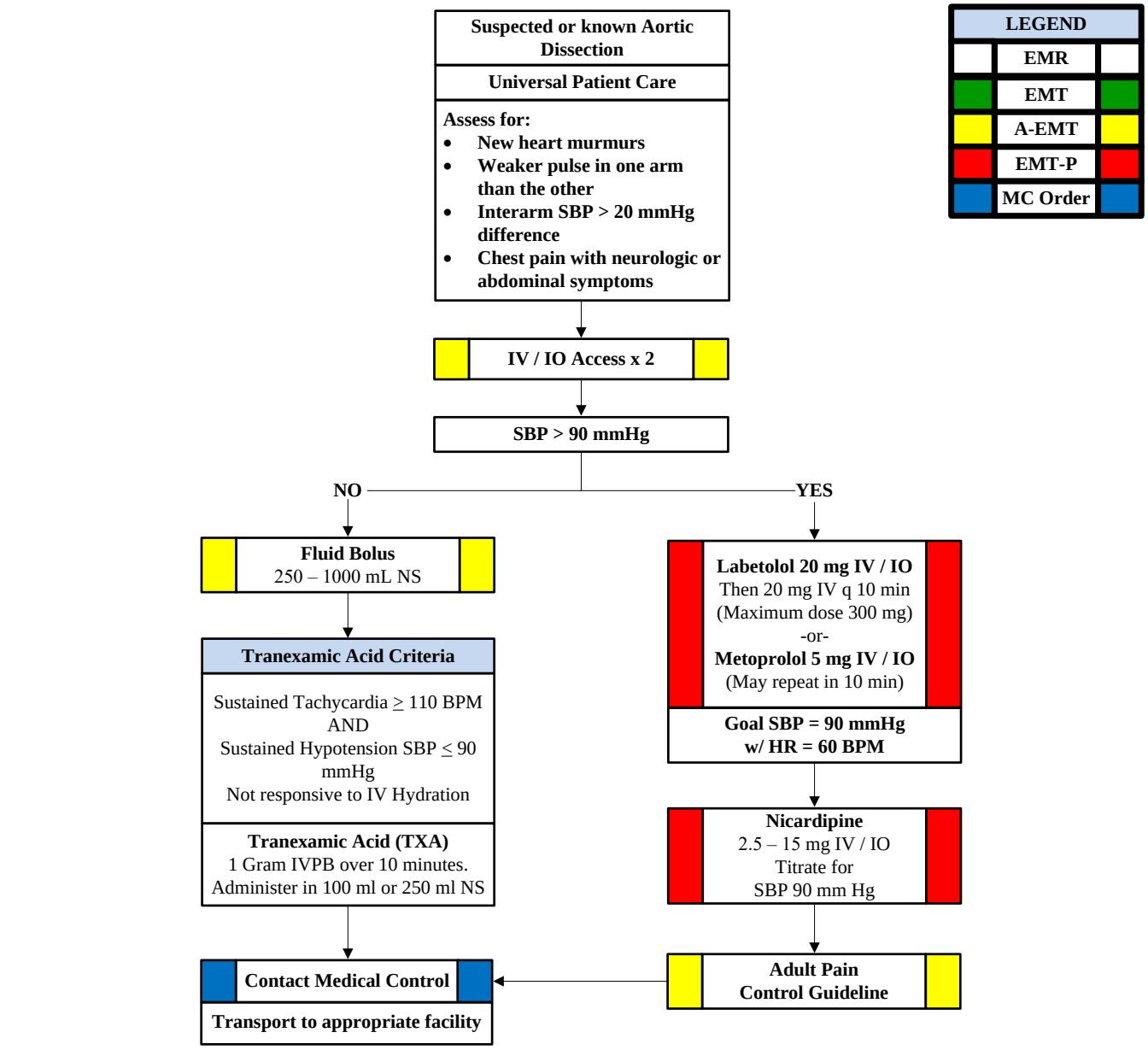
b. **Criteria:**
    i. Patient responded immediately to administration of opiate reversal agents (naloxone)
    ii. Age > 18 years of age
    iii. Patient must be alert, oriented to person, place, time and event
    iv. Patient must be able to refuse transport as per patient exhibiting decisional capacity to make appropriate decisions
    v. Must have been an accidental (non-suicidal) opiate overdose and did not overdose on long acting opiates
    vi. Patient is no longer exhibiting any signs of overdose with normal pupil size and vital signs with HR < 100, SBP > 90 mmHg, respiratory rate > 12
    vii. Patient **MUST** verbalize the understanding that they can die from the ingestion of opiate medication and that they are refusing transport to hospital for additional evaluation and monitoring by hospital personnel

c. **Guideline for Release Against Medical Advice**
    i. If the criteria above are met, then the patient is a candidate for Release Against Medical Advice
    ii. The patient must be released to the care of a responsible individual who will remain with the patient as an observer for a reasonable time
    iii. The patient should be given both verbal and written instructions for follow-up care prior to being released
    iv. If another episode occurs, request medical assistance immediately.
    v. If the patient wishes to refuse transportation to a hospital and you have administered any medications, **you MUST contact on-line MEDICAL CONTROL** prior to leaving the patient or completing the Against Medical Advice / Release At Scene form
    vi. Document in the PCR the physician that you spoke with and that the patient has decisional capacity with the ability to refuse additional medical care

# TAB 3 GUIDELINE 6

## AORTIC DISSECTION

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Age<br>• Past medical / surgical history<br>• Medications<br>• Onset of pain / injury<br>• Previous back injury<br>• Location of pain<br>• Palliation / Provocation<br>• Region / Radiation / Referred<br>• Severity (1-10)<br>• Time (duration / repetition) | • Pain (paraspinour, spinous process, chest, abdomen)<br>• Syncope<br>• Difficulty speaking<br>• Extremity weakness<br>• Extremity numbness<br>• Shooting pain into an extremity<br>• Bowel / bladder dysfunction<br>• Weaker pulse in one arm than the other | • Chest pain / Acute Coronary Syndrome<br>• Pneumothorax<br>• Pulmonary Embolism<br>• Muscle spasm / strain<br>• Herniated disc with nerve compression<br>• Aneurysm |



**SPECIAL CONSIDERATIONS:**

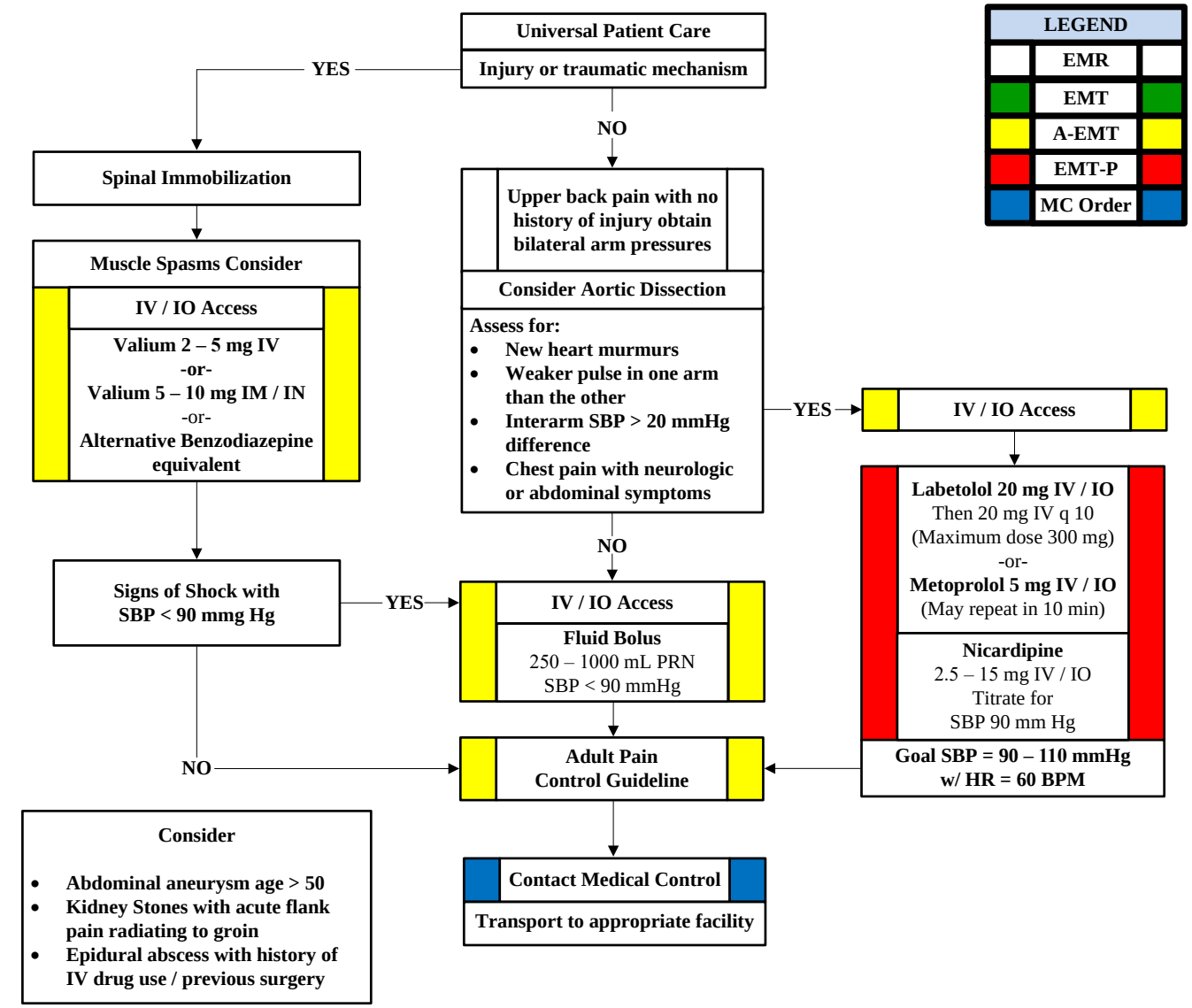
1. Aortic dissection begins with the formation of a tear in the aortic intima that directly exposes an underlying medial layer to the driving force (pulse pressure) of the intraluminal blood
2. There are two types of aortic dissections
    a. Stanford type A
        i. Involves the ascending aorta and/or aortic arch, and possibly the descending aorta
        ii. The tear can originate in the ascending aorta, the aortic arch, or, more rarely, in the descending aorta
        iii. It includes DeBakey types I and II and requires emergent surgical repair
    b. The Stanford type B
        i. Involves the descending aorta or the arch (distal to the left subclavian artery), without involvement of the ascending aorta

    It includes DeBakey type III and is typically managed medically until complications arise

# TAB 3 GUIDELINE 7

## BACK PAIN

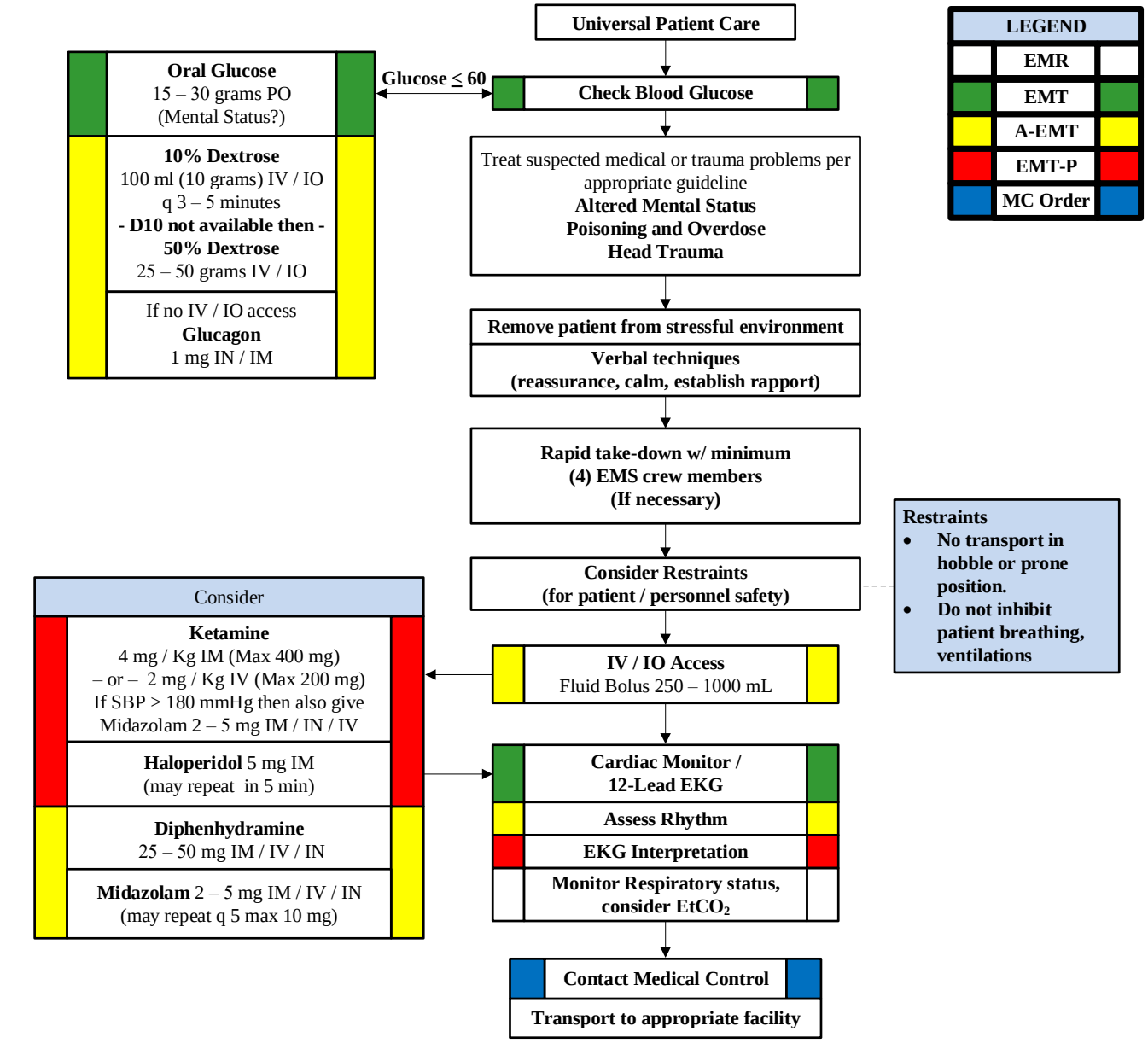
| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Age<br>• Past medical / surgical history<br>• Medications<br>• Onset of pain / injury<br>• Previous back injury<br>• Traumatic mechanism<br>• Location of pain<br>• Palliation / Provocation<br>• Region / Radiation / Referred<br>• Severity (1-10)<br>• Time (duration / repetition)<br>• Fever | • Pain (paraspinour, spinous process)<br>• Swelling<br>• Pain with range of motion<br>• Extremity weakness<br>• Extremity numbness<br>• Shooting pain into an extremity<br>• Bowel / bladder dysfunction | • Muscle spasm / strain<br>• Herniated disc with nerve compression<br>• Sciatica<br>• Spine fracture<br>• Kidney stone<br>• Pyelonephritis<br>• Aneurysm<br>• Pneumonia<br>• Spinal epidural abscess<br>• Metastatic Cancer |



# TAB 3 GUIDELINE 8

## BEHAVIORAL | EXCITED DELIRIUM

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Situational crisis<br>• Psychiatric illness / medications<br>• Injury to self or threats to others<br>• Medic alert tag<br>• Substance abuse / overdose<br>• Diabetes | • Anxiety, agitation, confusion<br>• Affect change, hallucinations<br>• Delusional thoughts, bizarre behavior<br>• Expression of suicidal / homicidal thoughts<br>• Poor concentration, easily distracted, psychosis<br>• Combative, violent<br>• Large pupils / light sensitivity<br>• Tachycardic / Hypertension | • See Altered Mental Status differential<br>• Hypoxia<br>• Alcohol intoxication<br>• Medication effect / overdose<br>• Withdrawal syndromes<br>• Depression<br>• Bipolar (manic-depressive)<br>• Schizophrenia, anxiety disorders, etc. |



**SPECIAL CONSIDERATIONS:**

1. Excited delirium is an extreme disturbance of consciousness and mental status that occurs in individuals especially when under the influence of stimulants or anti-psychotic medications and it represents an acute **LIFE THREATENING MEDICAL EMERGENCY**
    a. Combination of delirium, psychomotor agitation, anxiety, hallucinations, speech disturbances, disorientation, violent / bizarre behavior, insensitivity to pain, hyperthermia and increased strength. Potentially life-threatening and associated with use of physical control measures, including physical restraints and Tasers
        i. Need rapid take down, sedation, cooling measures and IV fluid replacement. These patients often suffer respiratory or cardiac arrest once subdued and should be closely monitored and transported by an ALS Unit to closest appropriate facility
    b. Most commonly seen in male subjects with a history of serious mental illness and/or acute or chronic drug abuse, particularly stimulant drugs such as cocaine, crack cocaine, methamphetamine, amphetamines or similar agents
    c. Alcohol withdrawal or head trauma may also contribute to the condition
2. Maintain objectivity during evaluation and treatment. Verbal aggression exhibited by patients can quickly escalate to physical violence. Always proceed with calm, reassuring directions for the patient. If a situation appears threatening, sufficient law enforcement presence may be necessary before patient restraint is attempted
    a. If needing to take the patient down, at minimum, utilize (4) ems crew members / police officers to secure each limb
    b. **If a patient suspected of excited delirium suffers cardiac arrest, consider a fluid bolus and sodium bicarbonate early**
3. Patients requiring physical restraint should be placed in the lateral recumbent position when possible. Consider your own safety and limitations when physical restraint is required.
    a. Restrained patients should never be left unattended. Continue to evaluate effectiveness of restraints and any compromise that may be caused by the restraint process (i.e., airway, breathing, circulation)
    b. Positional asphyxia – very large ventilation volumes are needed to oxygenate and blow off carbon dioxide overload. They should never be left prone or face down in handcuffs and should never by “hog-tied”
4. Do not overlook the possibility of associated domestic violence or abuse
5. Richmond Agitation-Sedation Scale

a. Validated agitation-sedation scale from age 2 months and older

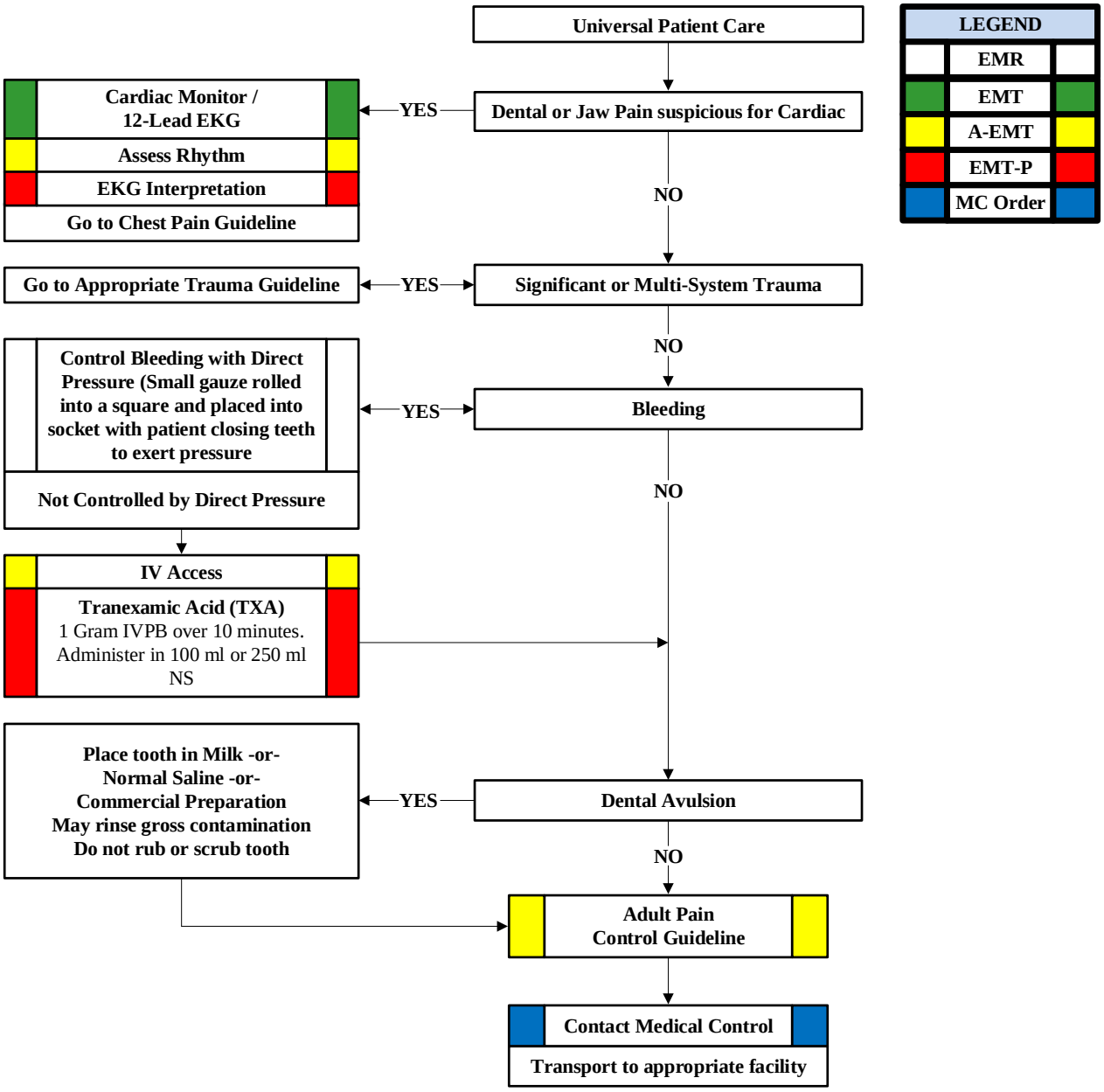
b. Goal is for RASS between (0) to (-1)

| Score | Term | Description |
|---|---|---|
| + 4 | Combative | Overtly combative or violent; immediate danger to staff |
| + 3 | Very agitated | Pulls on or removes tube(s) or catheter(s) or has aggressive behavior toward staff |
| + 2 | Agitated | Frequent nonpurposeful movement or patient–ventilator dyssynchrony |
| + 1 | Restless | Anxious or apprehensive but movements not aggressive or vigorous |
| 0 | Alert and Calm | Spontaneously pays attention to caregiver |
| - 1 | Drowsy | Not fully alert, but has sustained (more than 10 seconds) awakening, with eye contact, to voice |
| - 2 | Light Sedation | Briefly (less than 10 seconds) awakens with eye contact to voice |
| - 3 | Moderate Sedation | Any movement (but no eye contact) to voice |
| - 4 | Deep Sedation | No response to voice, but any movement to physical stimulation |
| - 5 | Unarousable | No response to voice or physical stimulation |

# TAB 3 GUIDELINE 9

## DENTAL PAIN

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Age<br>• Past medical history<br>• Medications<br>• Onset of pain / injury<br>• Trauma with "knocked out" tooth<br>• Location of tooth<br>• Whole vs. partial tooth injury | • Bleeding<br>• Pain<br>• Fever<br>• Swelling of face / buccal mucosa<br>• Tooth missing or fractured | • Decay<br>• Infection<br>• Fracture<br>• Avulsion<br>• Abscess<br>• Facial cellulitis<br>• Impacted tooth (wisdom)<br>• TMJ syndrome<br>• Myocardial infarction |



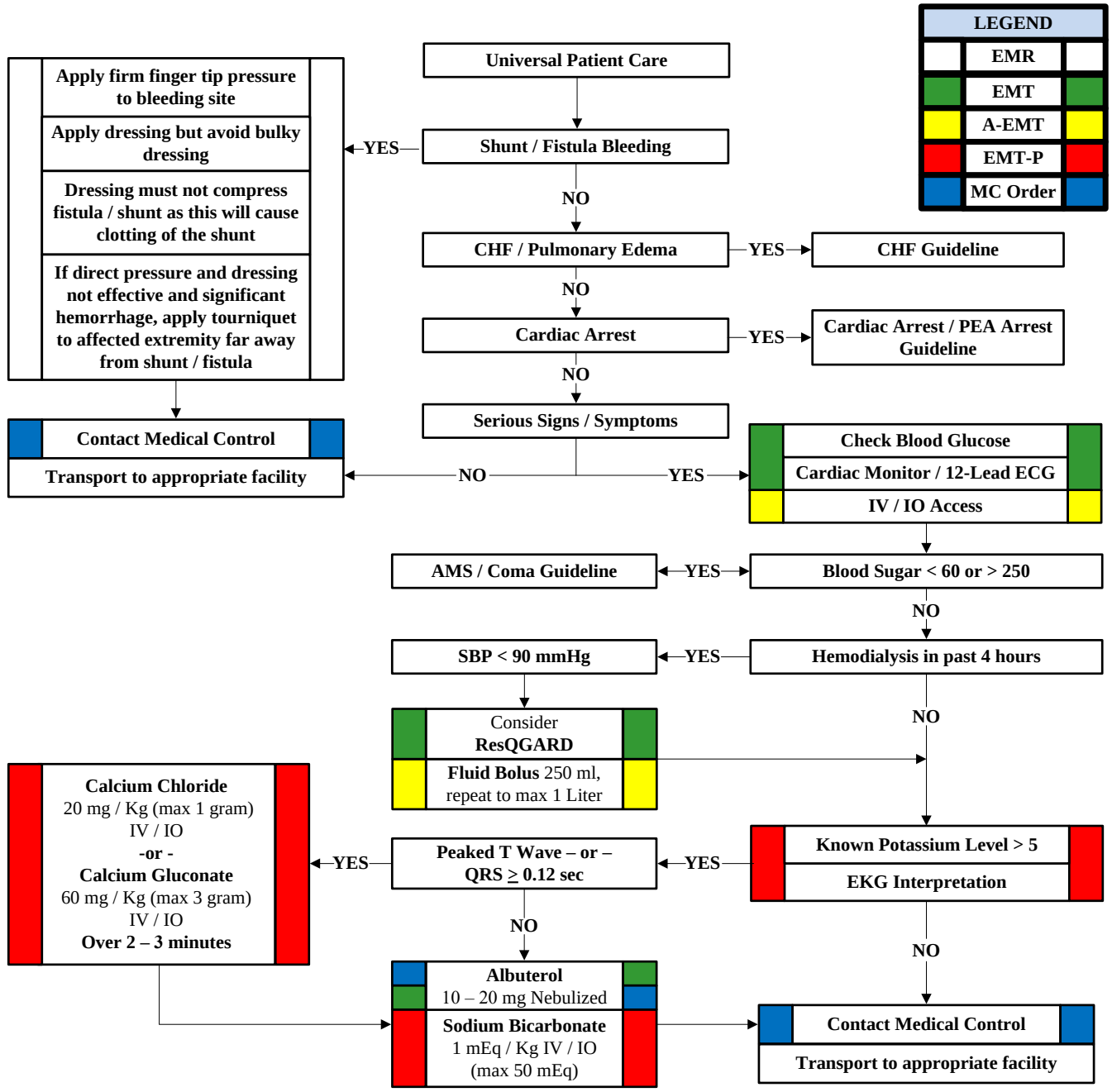
**SPECIAL CONSIDERATIONS:**

1. Recommended Exam: Mental Status, HEENT, Neck, Chest, Lungs, Neurology
2. Significant soft tissue swelling to the face or oral cavity can represent a cellulitis or abscess.
3. Scene and transport times should be minimized in complete tooth avulsions. Re-implantation is possible within 4 hours if the tooth is properly cared for.
4. All pain associated with teeth should be associated with a tooth which is tender to tapping or touch (or sensitivity to cold or hot).

# TAB 3 GUIDELINE 10

## DIALYSIS | RENAL FAILURE | HYPERKALEMIA

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Past medical history<br>• Medications<br>• Peritoneal or Hemodialysis<br>• Shunt access noted<br>• Crush Injury | • EKG abnormality<br>  • Peaked T waves<br>  • Wide complex, bizarre appearance with slow rhythm<br>• Shortness of breath<br>• Hypotension<br>• Bleeding<br>• Seizure<br>• Altered Mental Status | • End Stage Renal Disease<br>• Electrolyte imbalance<br>• Crush Injury<br>• Prolonged immobilization<br>• Rhabdomyolisis<br>• Congestive Heart Failure |



**SPECIAL CONSIDERATIONS:**

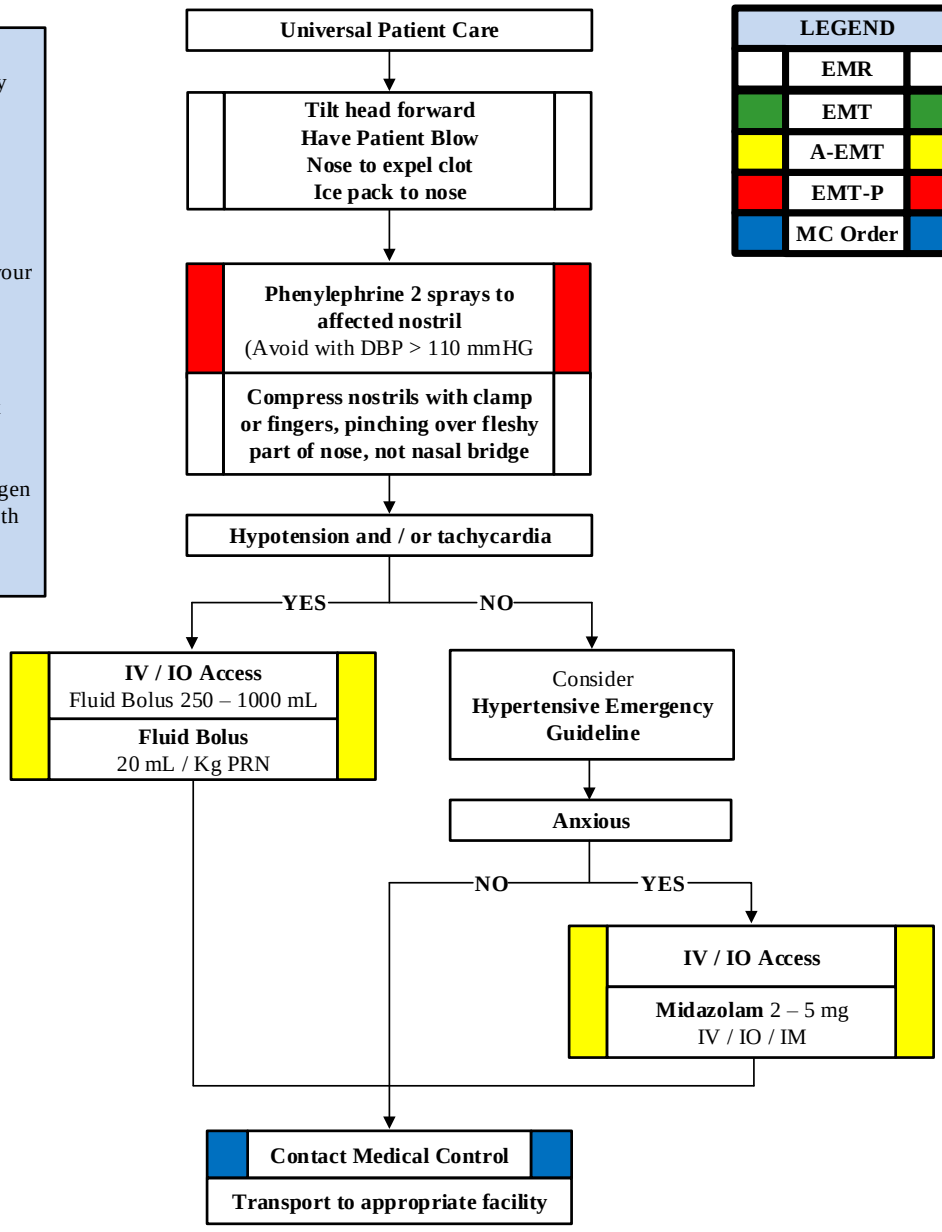
1. Do not take blood pressure or start IV in extremity which has a shunt / fistula in place.
2. Access of shunt or dialysis catheter is indicated in the dead or near-dead patient only with no other available access. Utilize IO if available.
3. Always consider Hyperkalemia in all dialysis or renal failure patients.
4. Patient with suspected cardiac arrest secondary to hyperkalemia will potentially need multiple dosages of calcium and sodium bicarbonate to correct

# TAB 3 GUIDELINE 11

# EPISTAXIS

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Age<br>• Past medical history<br>• Medications (HTN, anticoagulants, ibuprofen / OTC headache relief powder)<br>• Previous episodes of epistaxis<br>• Trauma<br>• Duration of bleeding<br>• Quantity of bleeding | • Bleeding from nasal passage<br>• Pain<br>• Nausea<br>• Vomiting | • Trauma<br>• Infection (viral URI or Sinusitis)<br>• Allergic rhinitis<br>• Lesions (polyps, ulcers)<br>• Hypertension |

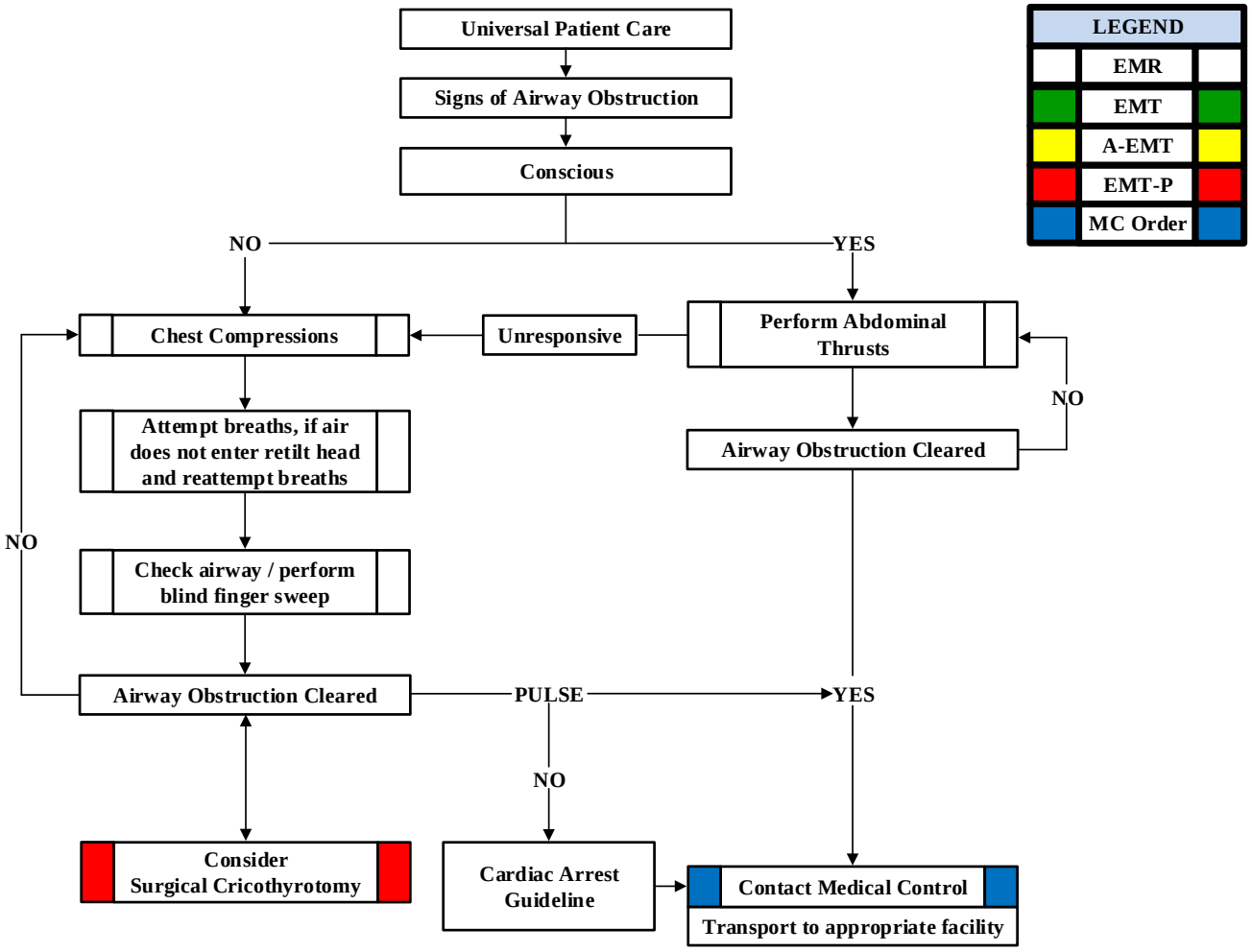
- Most nose bleeding is from an anterior source and may be easily controlled
- Avoid phenylephrine in pts with known CAD
- Anticoagulation with aspirin, clopidogrel (Plavix), warfarin (Coumadin) will make epistaxis much harder to control. Note if your patient is taking these or other anticoagulant medications
- Posterior epistaxis is a true emergency and may require advanced ED techniques. Do not delay transport. Be prepared for potential airway issues.
- Patients using nasal cannula oxygen may have cannula placed in mouth while nares are clamped or compressed for nosebleed



## TAB 3 GUIDELINE 12

## FOREIGN BODY AIRWAY OBSTRUCTION - ADULT

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Events leading up to incident<br>• Trauma<br>• Aspiration<br>• Medication<br>• Allergic reaction | • Anxiety<br>• No air movement<br>• Clutching throat<br>• Unresponsive<br>• Sore throat, fever,<br>• "Hot potato" voice, drooling | • Foreign Body<br>• Infection<br>• Trauma<br>• Laryngeal or tracheal fracture<br>• Oropharyngeal laceration |

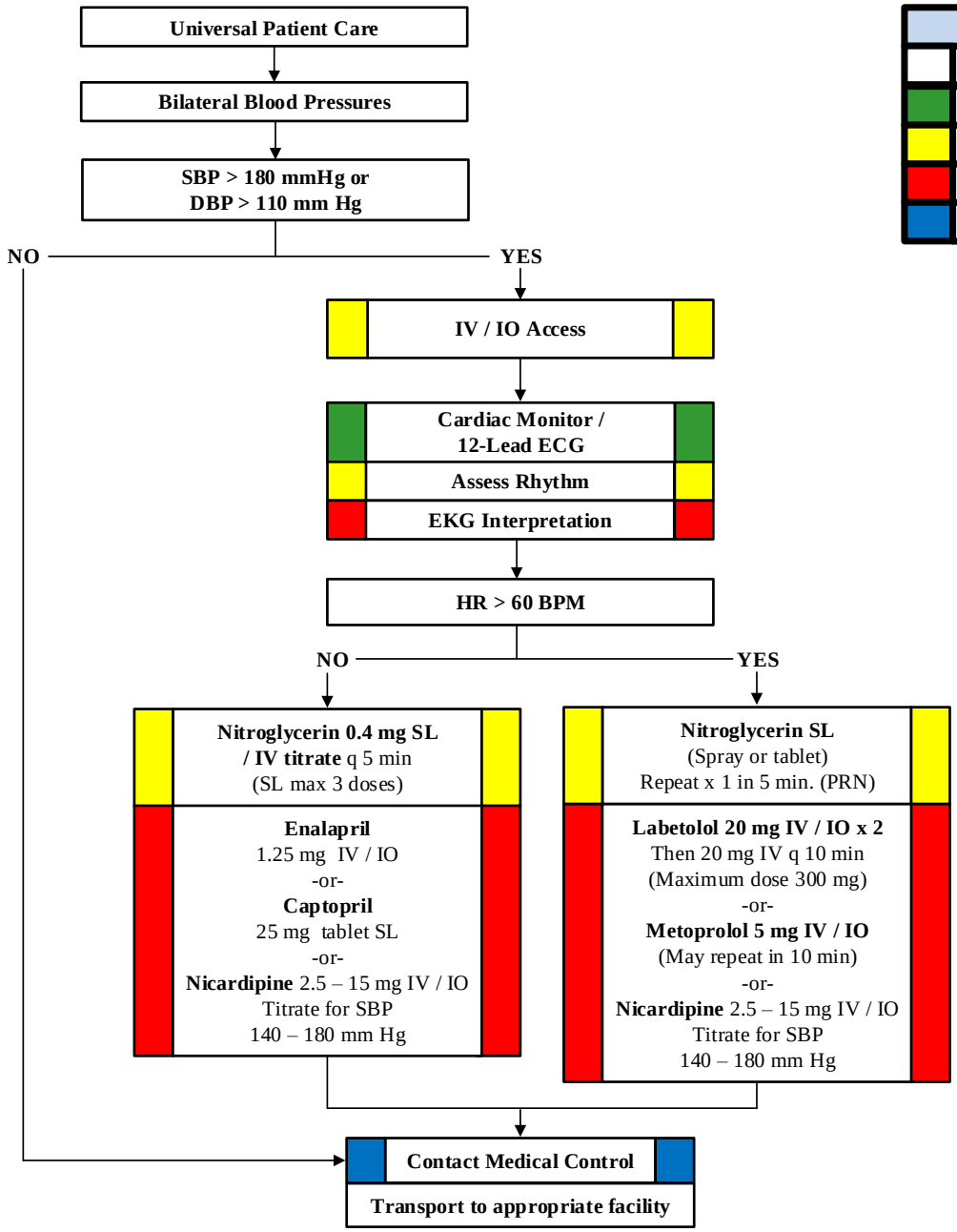



| Mild Airway Obstruction Signs | Severe Airway Obstruction Signs |
|---|---|
| • Good air exchange<br>• Responsive and can cough forcefully<br>• May wheeze between coughs | • Poor or no air exchange<br>• Weak, ineffective cough or no cough at all<br>• High-pitched noise while inhaling or no noise at all<br>• Increased respiratory difficulty<br>• Possible cyanosis (turning blue)<br>• Unable to speak or move air<br>• Clutching the neck with the thumb and fingers<br>• Unresponsive |

# TAB 3 GUIDELINE 13

## HYPERTENSIVE EMERGENCY

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Documented hypertension<br>• Related diseases: diabetes, CVA, renal failure, cardiac<br>• Medications (compliance?)<br>• **Viagra, Levitra, Cialis**<br>• Pregnancy | **One of these:**<br>• Systolic BP 180 or greater<br>• Diastolic BP 110 or greater<br>**And at least one of these:**<br>• Chest Pain<br>• Headache / Blurred Vision<br>• Nosebleed<br>• Dizziness | • Hypertensive encephalopathy<br>• Primary CNS injury (Cushing's response = bradycardia with hypertension<br>• Myocardial infarction<br>• Aortic dissection (aneurysm)<br>• Pre-eclampsia / Eclampsia |



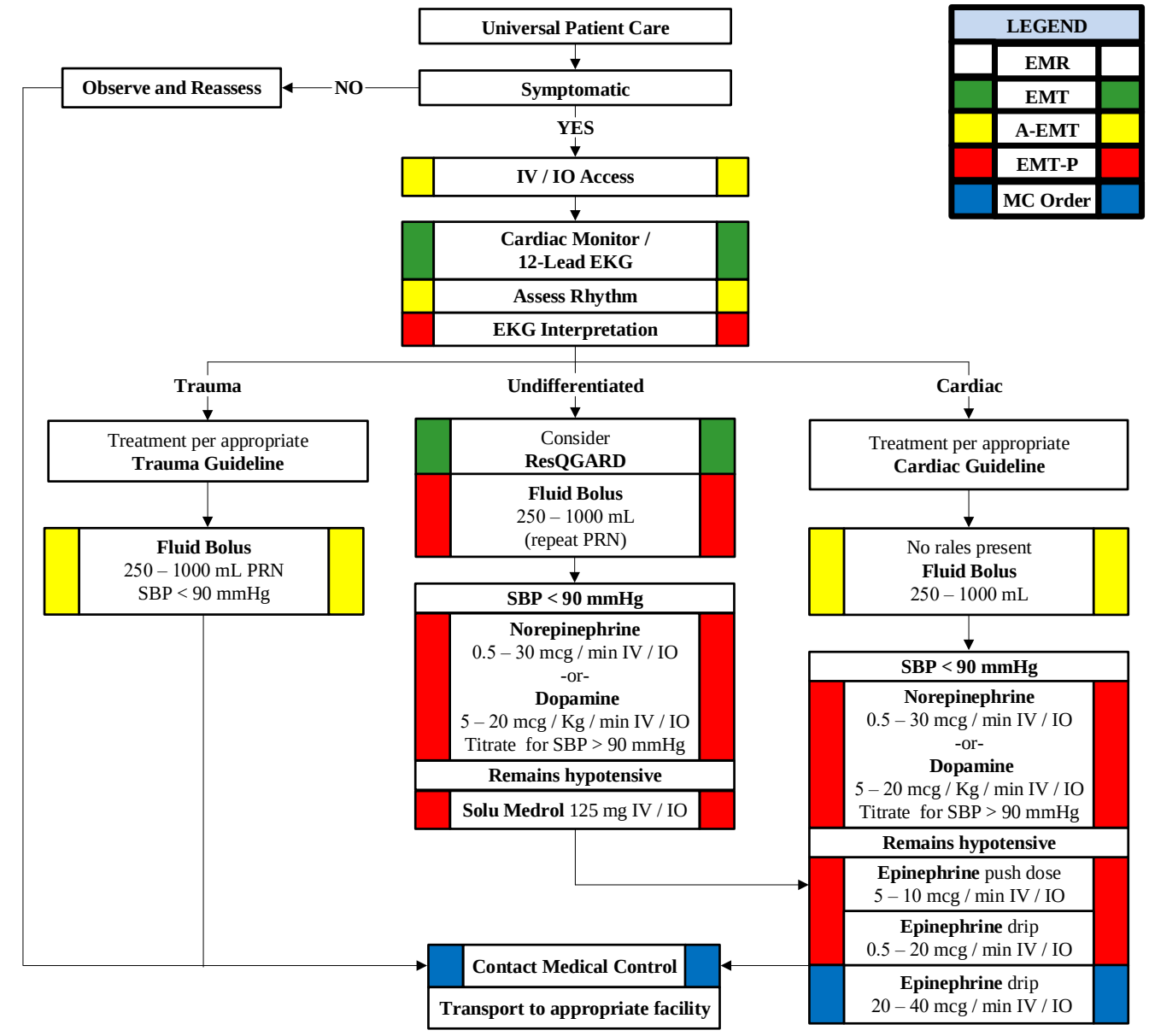
**SPECIAL CONSIDERATIONS:**

1. **Elevated blood pressure of itself rarely requires emergency therapy.**
    a. Initial triage should quickly identify those patients who have an elevated BP without any evidence of significant target organ damage or any other impending cardiovascular events.
        i. Secondary hypertension in response to stress or pain is a common field finding. It does not require field treatment.
        ii. Hypertension can also be from a severe head injury and intracranial bleeding. Treatment should be for the actual intracranial problem and not the blood pressure problem.
    b. A careful cardiovascular examination, as well as a thorough neurologic examination, including mental status, should be conducted.
    c. Improper BP cuff size can produce falsely high or low blood pressure measurements
2. Initial goal for BP reduction is not to obtain a normal BP, but to achieve a progressive controlled reduction to minimize the risk of hypoperfusion to vital organs.
    a. **Initial reduction in mean arterial pressure should not exceed 20 – 25% below the pretreatment BP**. **As an alternative, mean arterial pressure can be reduced within the first 30 – 60 minutes to 110 – 115mmHg.**
    b. Excessively rapid reductions in BP have been associated with acute deterioration in renal function, ischemic cardiac or cerebral events, and occasional retinal artery occlusion and acute blindness.
3. Signs and symptoms of a hypertensive emergency:
    a. Rapid rise in diastolic pressure over 130mmHg
    b. New onset symptoms that accompany rise in BP:
        i. Chest pressure / Difficulty breathing.
        ii. Mental confusion / Agitation.
        iii. Severe headache.
        iv. Light-headed / Dizziness.
        v. Nausea / vomiting.
        vi. Visual impairment (may include transient blindness).

# TAB 3 GUIDELINE 14

# HYPOTENSION (SHOCK)

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Blood loss - vaginal or gastrointestinal bleeding, AAA, ectopic pregnancy<br>• Fluid loss - vomiting, diarrhea, fever<br>• Infection<br>• Cardiac ischemia (MI, CHF)<br>• Medications<br>• Allergic reaction<br>• Pregnancy<br>• History of poor oral intake | • Restlessness, confusion<br>• Weakness, dizziness<br>• Weak, rapid pulse<br>• Pale, cool, clammy skin<br>• Delayed capillary refill<br>• Hypotension<br>• Coffee-ground emesis<br>• Tarry stools | • Shock<br>  • Hypovolemia<br>  • Cardiogenic<br>  • Septic<br>  • Neurogenic<br>  • Anaphylactic<br>• Ectopic pregnancy<br>• Dysrhythmias<br>• Pulmonary embolus<br>• Tension pneumothorax<br>• Medication effect / overdose<br>• Vasovagal<br>• Physiologic (pregnancy) |



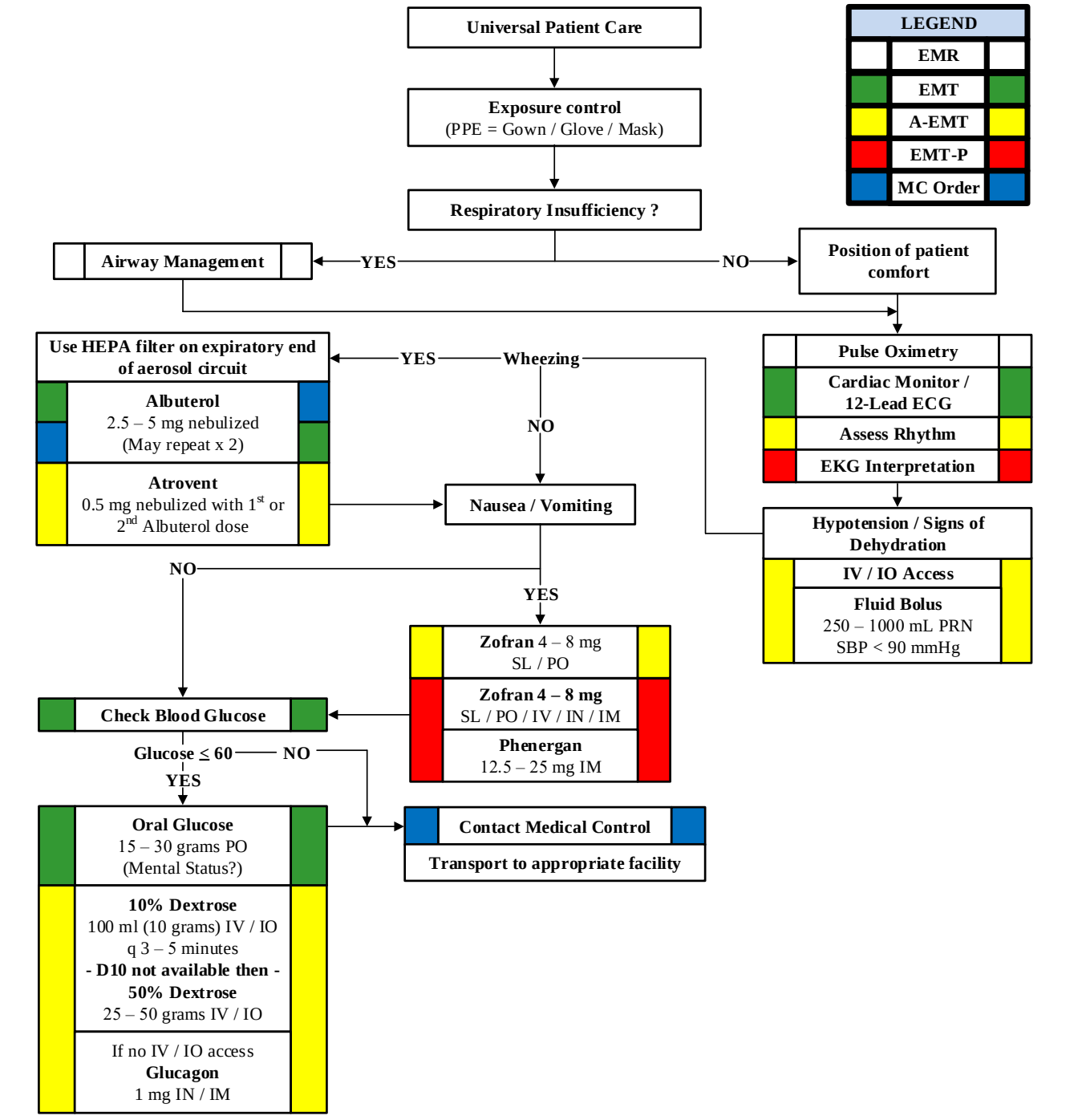
**SPECIAL CONSIDERATIONS:**

1. Hypotension can be defined as a mean arterial pressure (MAP) < 65 mmHg
2. Consider all possible causes of shock and treat per appropriate guideline
    a. Anaphylactic – reaction to substance to which patient is hypersensitive or allergic
    b. Cardiogenic – myocardial infection with damage to heart muscle
    c. Hemorrhagic – severe bleeding or loss of body fluid from trauma, burns, surgery or dehydration from severe nausea and vomiting
    d. Metabolic – body homeostasis impaired; have disturbance in acid-base balance
    e. Neurogenic – injury or trauma to the nervous system
    f. Obstructive – compression of the great vessels leading back to the heart or compression on the heart itself by masses, fluid, etc that causes a limitation on preload
    g. Septic – acute infection
3. If no evidence of cardiogenic cause, institute general treatment measures.
    a. Patients should **always** have adequate intravascular fluid load **prior** to the use of vasopressors
    b. Limit normal saline or lactated ringer bolus to 2 liters unless septic shock suspected
    c. Consider application of the ResQGARD for patients ≥ 25 lbs. who are experiencing symptoms of low blood circulation secondary to a variety of causes such as:
        - Hypovolemia
            - Internal Hemorrhage
            - External Hemorrhage
            - Dehydration
        - Hypotension
            - Dialysis
            - Sepsis
            - Orthostatic intolerance
            - Medication reaction
4. Epinephrine
    a. Drip
        i. Mix 1 mg epinephrine (1:10,000 or 1:1000 concentration) in 250 ml bag normal saline or D5W to give 4:1 concentration, mix in 500 ml bag normal saline or D5W to give 2:1 concentration. Titrate 2 – 10 mcg / min
    b. Push dose
        i. Mix 0.1 mg (1 ml) epinephrine (1: 10,000) in 9 ml NS to give 10:1 concentration. Give 0.5 – 1 ml dose pushes every 1 – 2 minutes for blood pressure control

# TAB 3 GUIDELINE 15

# INFLUENZA LIKE ILLNESS (ILI)

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Immunization<br>• Previous influenza<br>• Pregnancy<br>• Diabetic<br>• HIV / Immunocompromised<br>• Medication – chemotherapy, steroids, immunosuppressant | • Fever / Chills<br>• Coughing<br>• Sore throat<br>• Runny or stuffy nose<br>• Headaches<br>• Body aches<br>• Fatigue<br>• Vomiting / Diarrhea | • Common cold<br>• Carbon monoxide poisoning<br>• Other viral syndromes<br>• Pneumonia<br>• Meningitis<br>• Mononucleosis<br>• HIV |



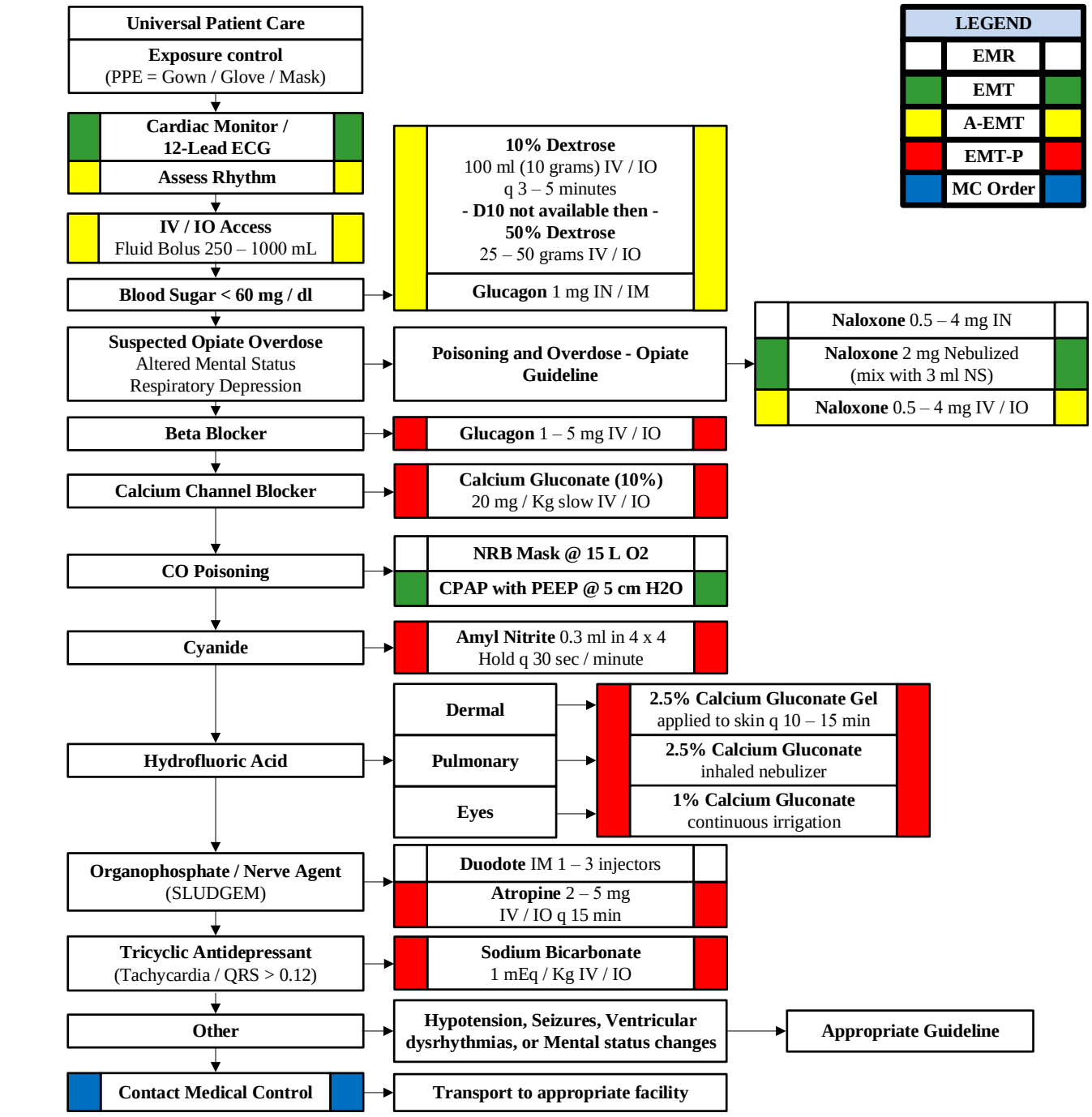
**SPECIAL CONSIDERATIONS:**

1. Influenza or "the flu" is caused by a number of unique influenza viruses. The patient is contagious for 48 hours prior to the onset of symptoms and as long as febrile or coughing which may be over 1 week after onset of symptoms.
2. Required personal protective equipment (PPE).
    a. Gloves / Goggles or eye shields.
    b. Fit tested N-95 respirator or Air Purifying Respirator (APR) or Powered APR (PAPR).
    c. Gown if gross contamination possible.
    d. Place plain surgical mask on patient and apply oxygen on top (**patients never use N-95 respirators**).
3. Disinfection.
    a. Vehicle will be left open for 5 – 10 minutes with ventilation running and doors and windows open.
    b. Fully recommended PPE will be used during decontamination process.
    c. Gross contamination will be removed and washed with soap / water.
    d. All exposed surfaces will be cleaned with approved hospital grade disinfectant and allowed to air dry to include benches, cots, counters and exposed walls.
    e. PPE will be removed with no cross contamination (remove one glove, remove mask by straps).
    f. Strict hand washing from elbows down with soap and water for minimal of 20 seconds or if unavailable waterless hand cleaner will be used.

# TAB 3 GUIDELINE 16

## POISONING | OVERDOSE | TOXIC INGESTION

| HISTORY | SIGNS / SYMPTOMS | ENVIRONMENT |
|---|---|---|
| • What type of ingestion<br>• When did ingestion occur<br>• How Much<br>• Reason for ingestion<br>• Actions of bystanders<br>• Previous psychiatric disorders<br>• Diseases / Medications: ie depressants<br>• Medical alert tags | • Increased salivation<br>• Soot or burns in mouth<br>• Irritation of the eyes<br>• Sweating and skin burns<br>• Decreased respiratory rate<br>• Lung findings (ie edema)<br>• Delayed capillary refill<br>• Tachycardia / Arrhythmias<br>• Seizures | • Acetaminophen<br>• Anticholinergic<br>• Aspirin<br>• Cardiac medications<br>• Insecticides (organophosphates)<br>• Solvents, alcohols, cleaning agents<br>• Stimulants |



**SPECIAL CONSIDERATIONS:**

1. General:
    a. Improve the care of patients with poisonings, and environmental/biochemical terrorism exposures in the pre-hospital setting. Provide for the most timely and appropriate level of care to the patient, including the decision to transport or treat on the scene
    b. If no immediate life threat or need for transport is identified, EMS personnel may conference the patient/caller with the Poison Center Specialist at the **Poison Control Center at 800-222-1222**.
        i. The Poison Center Specialist at the State Poison Center will evaluate the exposure and make recommendations regarding the need for on-site treatment and/or hospital transport in a timely manner
        ii. If the patient is determined to need EMS transport, the poison control center Specialist will contact the receiving hospital and provide information regarding the poisoning, including treatment recommendations. EMS may contact medical control for further instructions or to discuss transport options.
        iii. If the patient is determined not to require EMS transport, personnel will give the phone number of the patient/caller to the Poison Control Center Specialist. The Specialist will initiate a minimum of one follow-up call to the patient/caller to determine the status of patient.
        iv. Minimal information that should be obtained from the patient for the state poison center includes:

| | |
|---|---|
| Name and age of patient | Substance(s) involved |
| Time of exposure | Any treatment given |
| Signs and symptoms | |

        v. Minimal information which should be provided to the State Poison Center for mass poisonings, including biochemical terrorism and HazMat, includes:

| | |
|---|---|
| Substance(s) involved | Time exposure |
| Signs and symptoms | Any treatment given |

    c. Do not induce vomiting for
        - Hydrocarbons
        - Strong Acids
        - Strong Base Iodides
        - Silver Nitrate
        - Strychnine
        - Who are not alert
    d. Do not neutralize acids with alkali or Do not neutralize alkali with acids
    e. Product labels and home kits may be misleading and dangerous

f. All empty containers of ingested material should accompany patient to the hospital

g. Do not rely on patient history of ingestion, especially in suicide attempts

2. Overdose / Ingestion concerns:

a. **Acetaminophen:** Initial presentation normal or nausea/vomiting. If not detected and treated, will cause irreversible liver failure

b. **Anticholinergic:** Increased HR, increased temperature, dilated pupils, mental status changes

c. **Aspirin:** Early signs consist of abdominal pain, vomiting ringing in the ears. Tachypnea and altered mental status may occur later. Renal dysfunction, liver failure, and or cerebral edema among other things can take place later

d. **Cardiac Medications:** Dysrhythmias and mental status changes

e. **Depressants:** Decreased HR, decreased BP, decreased temperature, decreased respirations, non-specific pupils

f. **Insecticides:** Increased or decreased HR, increased secretions, nausea, vomiting, diarrhea, pinpoint pupils

g. **Solvents**: Nausea, vomiting, and mental status changes

h. **Stimulants:** Increased HR increased BP, increased temperature, dilated pupils, and seizures

i. **Tricyclics:** 4 major areas of toxicity: seizures; dysrhythmias; hypotension; decreased mental status or coma; rapid progression from alert mental status to death

| Condition | Treatment |
|---|---|
| Carbon Monoxide | • Carbon monoxide is produced from a variety of sources such as vehicles, gasoline engines, camp stoves, lanterns, burning charcoal and wood, gas ranges, heating systems and poorly vented chimneys. Structural fires are another common source of CO exposure.<br>• Normal Carbon Monoxide Levels (ages 3 – 74).<br>  • Nonsmokers = 0.83 $\pm$ 0.67%.<br>  • Smokers = 4.30 $\pm$ 2.55%.<br>• Factors which may reduce the reliability of carbon monoxide readings:<br>  • Poor peripheral circulation (hypovolemia, hypotension, hypothermia).<br>  • Excessive sensor motion. |

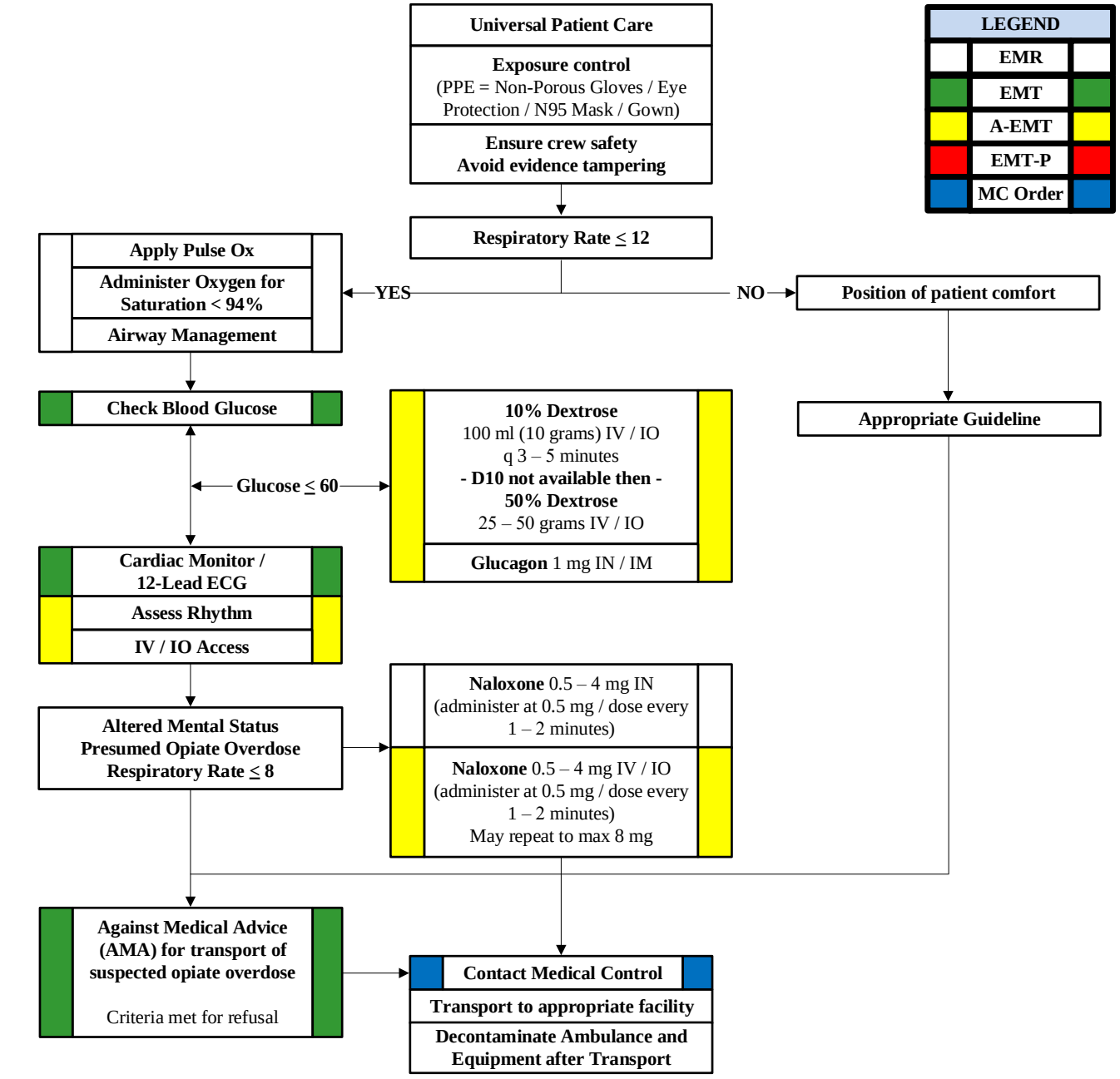
| | |
|---|---|
| | • Fingernail polish (may be removed with finger nail polish remover).<br>• Irregular heart rhythms (atrial fibrillation, SVT, etc.).<br>• Jaundice**.**<br>• **Consider transport to hospital with hyperbaric chamber for potential hyper oxygen therapy. Consult with On-Line Medical Control for diversion approval.** |
| Cyanide | • Any smoke inhalation victim with mental status changes should also be treated for Cyanide Poisoning if medication is available, or if known exposure to Cyanide. Any patient or firefighter that goes into cardiac arrest after exposure to smoke from a fire.<br>• Present history: when last well, progression of present state, prior symptoms such as increase in respirations, convulsions, coma.<br>• Check for bottles and read ingredient label. If patient is in an industrial setting, ask if they use Cyanide.<br>• Principal manifestations of poisoning with these compounds are rapid respirations, blood pressure fall, convulsions and coma; may also cause lightheadedness, vomiting, flushing, headache, drowsiness, hypotension, rapid pulse and unconsciousness.<br>• Check for odor of "BITTER ALMONDS".<br>• **Alternative therapy includes Hydroxocobalamin (5 grams in 200 ml NS / D5W) administered over 5 minutes** |
| Hydrofluoric Acid | • Skin exposure - 2.5% Calcium Gluconate gel applied to affected area, may be reapplied every 10-15 minutes.<br>• Inhalation exposure - 2.5% Calcium Gluconate may be administered by aerosol.<br>• Eye exposure - 1% Calcium Gluconate continuous irrigation.<br>• EMT or Advanced EMT should continue the therapy initiated by previous EMS providers in regards to dermal or inhalation therapy of Calcium Gluconate. |
| Nerve Agent Exposure / | • Symptoms<br>• **S.L.U.D.G.E: Salivation, Lacrimation, Urination, Defecation, GI distress, Emesis** |

| | |
|---|---|
| Organophosphate Poisoning | • **D.U.M.B.B.E.L.S: Diarrhea, Urination, Miosis, Bradycardia, Bronchorrhea, Emesis, Lacrimation, Salivation**<br>• Mild symptoms:<br>  • 1 Duodote<br>• Atropine 1mg IVP every 15 min until heart rate reaches 180<br>• Moderate: Unable to ambulate but still conscious<br>• 1 Duodote<br>• **Atropine 2 mg IVP** every 15min until heart rate reaches 180<br>• Severe: Unconscious / seizures<br>  • 3 Duodote<br>  • **Atropine 5 mg IVP** every 15min until heart rate reaches 180<br>**Do not administer more than three (3) DuoDote Auto-Injectors or three (3) Mark 1 Kits** unless definitive medical care is available. The limit of 3 doses is specific to the pralidoxime component of the DuoDote and Mark 1 Kit. **If necessary, additional doses of atropine can be administered if the 3 doses of DuoDote or Mark 1 Kit injections do not produce an adequate response.** |

# TAB 3 GUIDELINE 17

## POISONING | OVERDOSE | OPIATE

| HISTORY | SIGNS / SYMPTOMS | ENVIRONMENT |
|---|---|---|
| • What type of ingestion<br>• When did ingestion occur<br>• How Much<br>• Reason for ingestion<br>• Actions of bystanders<br>• Previous psychiatric disorders<br>• Diseases / Medications: ie depressants<br>• Medical alert tags | • Increased salivation<br>• Soot or burns in mouth<br>• Irritation of the eyes<br>• Sweating and skin burns<br>• Decreased respiratory rate<br>• Lung findings (ie edema)<br>• Delayed capillary refill<br>• Tachycardia / Arrhythmias<br>• Seizures | • Acetaminophen<br>• Anticholinergic<br>• Aspirin<br>• Cardiac medications<br>• Insecticides (organophosphates)<br>• Solvents, alcohols, cleaning agents<br>• Stimulants |



**SPECIAL CONSIDERATIONS:**

1. The main focus for treatment is to ensure proper respiratory and oxygen saturation status. The goal is "**NOT TO WAKE"** the patient up, but to ensure adequate oxygenation and ventilation. Naloxone administration should be at no more than 0.5 mg aliquots every 1 – 2 minutes. While naloxone is being administered ensure that proper ventilation is being performed with bag-valve mask and oxygen
2. All suspected patients with opiate overdose should be handled using non-porous type gloves (nitrile style, non-latex) and eye protection. Consider wearing N-95 mask and gowns for any patient that has visible powder on body, or if there is visible powder in patient care area
3. Non-transport of opiate overdose, Against Medical Advice Guidelines
    a. When dealing with patients that are suspected opiate overdose it is in their best interest to receive an evaluation and monitoring from hospital personnel. Many opiate containing medications have the potential of causing somnolence and decreased respirations necessitating reversal medication
    b. **Criteria:**
        i. Patient responded immediately to administration of opiate reversal agents (naloxone)
        ii. Age > 18 years of age
        iii. Patient must be alert, oriented to person, place, time and event
        iv. Patient must be able to refuse transport as per patient exhibiting decisional capacity to make appropriate decisions
        v. Must have been an accidental (non-suicidal) opiate overdose and **DID NOT** overdose on long acting opiates (methadone, oxycontin, buprenorphine, long acting morphine)
        vi. Patient is no longer exhibiting any signs of overdose with normal pupil size and vital signs with HR < 100, SBP > 90 mmHg, respiratory rate > 12
        vii. Patient **MUST** verbalize the understanding that they can die from the ingestion of opiate medication and that they are refusing transport to hospital for additional evaluation and monitoring by hospital personnel
    c. **Guideline for Release Against Medical Advice**
        i. If the criteria above are met, then the patient is a candidate for Release Against Medical Advice

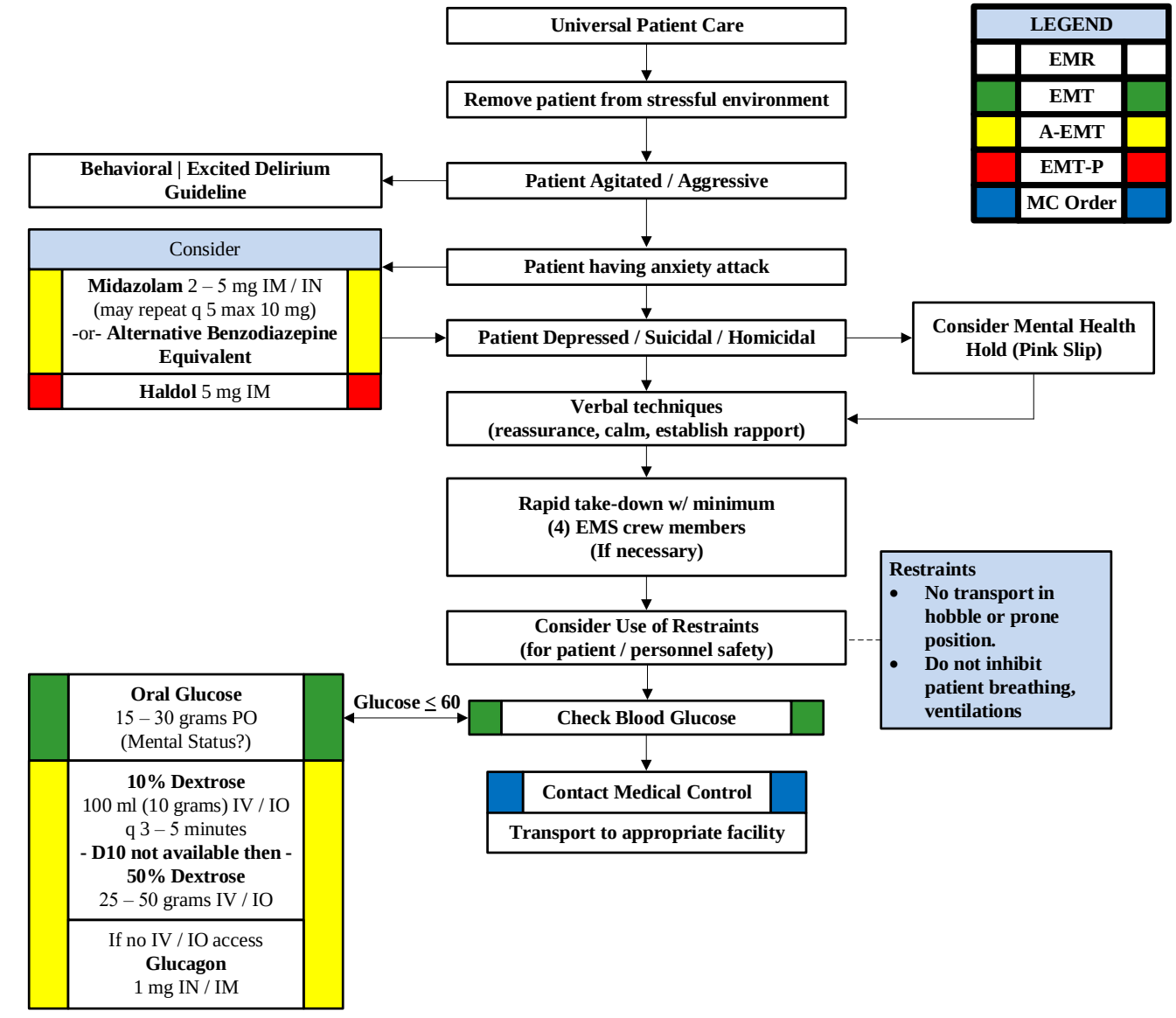
ii. The patient must be released to the care of a responsible individual who will remain with the patient as an observer for a reasonable time
iii. The patient should be given both verbal and written instructions for follow-up care prior to being released
iv. If another episode occurs, request medical assistance immediately.
v. If the patient wishes to refuse transportation to a hospital and you have administered any medications, you **MUST contact on-line MEDICAL CONTROL** prior to leaving the patient or completing the Against Medical Advice / Release At Scene form
vi. Document in the PCR the physician that you spoke with and that the patient has decisional capacity with the ability to refuse additional medical care

4. Vehicle and Equipment Decontamination
    a. Any concern for opiate contamination within the vehicle or on the equipment should be cleaned using N95 mask with non-porous type gloves (nitrile style, non-latex) and eye protection
    b. Spill Clean Up Instructions
        i. Wear appropriate PPE
        ii. Add one teaspoon full of powder OxiClean™ to 500 mL water
        iii. Shake gently until all powder is in solution
        iv. Completely cover spill with spray
        v. Within 15 minutes, scrub with a paper towel until dry (solution evaporates over time and this decreases the effectiveness of decontamination)
        vi. All PPE (except goggles) and paper towels must be disposed of in a biohazardous waste bin

# TAB 3 GUIDELINE 18

# PSYCHIATRIC PATIENT

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Situational crisis<br>• Psychiatric illness / medications<br>• Injury to self or threats to others<br>• Medic alert tag<br>• Substance abuse / overdose<br>• Diabetes | • Anxiety, agitation, confusion<br>• Affect change, hallucinations<br>• Delusional thoughts, bizarre behavior<br>• Expression of suicidal / homicidal thoughts<br>• Poor concentration, easily distracted, psychosis<br>• Combative, violent | • See Altered Mental Status differential<br>• Hypoxia<br>• Alcohol intoxication<br>• Medication effect / overdose<br>• Withdrawal syndromes<br>• Depression<br>• Bipolar (manic-depressive)<br>• Schizophrenia, anxiety disorders, etc. |



**SPECIAL CONSIDERATIONS:**

1. Richmond Agitation-Sedation Scale
    a. Validated agitation-sedation scale from age 2 months and older
    b. Goal is for RASS between (0) to (-1)

| Score | Term | Description |
|---|---|---|
| + 4 | Combative | Overtly combative or violent; immediate danger to staff |
| + 3 | Very agitated | Pulls on or removes tube(s) or catheter(s) or has aggressive behavior toward staff |
| + 2 | Agitated | Frequent nonpurposeful movement or patient–ventilator dyssynchrony |
| + 1 | Restless | Anxious or apprehensive but movements not aggressive or vigorous |
| 0 | Alert and Calm | Spontaneously pays attention to caregiver |
| - 1 | Drowsy | Not fully alert, but has sustained (more than 10 seconds) awakening, with eye contact, to voice |
| - 2 | Light Sedation | Briefly (less than 10 seconds) awakens with eye contact to voice |
| - 3 | Moderate Sedation | Any movement (but no eye contact) to voice |
| - 4 | Deep Sedation | No response to voice, but any movement to physical stimulation |
| - 5 | Unarousable | No response to voice or physical stimulation |

2. **Mental Health Holds (Pink Slip)**
    a. If a patient has an isolated mental health complaint (e.g. suicidality), and does not have a medical complaint or need specific medical intervention, then that patient may be appropriately transported by law enforcement according to their guidelines.
    b. If a patient has a psychiatric complaint with associated illness or injury (e.g. overdose, altered mental status, chest pain, etc), then the patient should be transported by EMS
    c. If a patient with a psychiatric complaint is intoxicated or otherwise lacks decision making capacity for any other reason, than no Mental Health Hold is needed and such a patient should be brought to an emergency department for evaluation and stabilization with implied consent.
    d. If EMS is called to evaluate a patient with an isolated psychiatric complaint who is not intoxicated, or otherwise lacking decision making capacity, and who refuses treatment or transport, and law enforcement are not willing to transport patient, then EMS should contact **MEDICAL CONTROL**.

i. If there is a reasonable concern for suicidal or homicidal ideation, or grave disability from another mental health condition, then **MEDICAL CONTROL** may give a verbal order placing the patient on a Mental Health Hold and direct EMS personnel to transport the patient against his or her will in accordance with State of Ohio statutes.

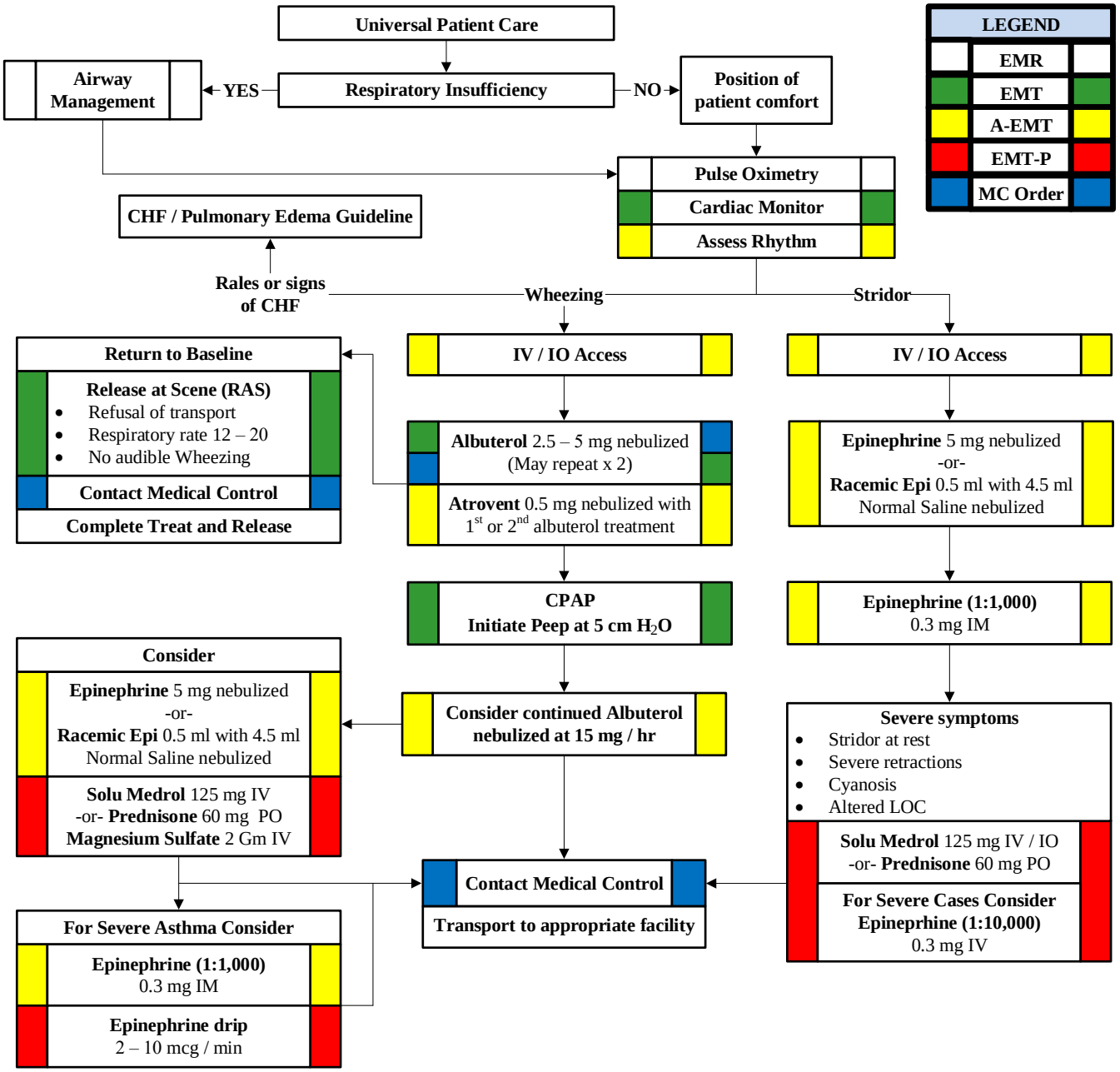
ii. The physician's name, and time and date of the Mental Health Hold must be recorded on the PCR. Effort should be made to obtain consent for transport from the patient, and to preserve the patient's dignity throughout the process.

e. A patient being transported on a Mental Health Hold may be transported to any appropriate receiving emergency department

# TAB 3 GUIDELINE 19

## RESPIRATORY DISTRESS

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Asthma<br>• COPD - chronic bronchitis, emphysema, congestive heart failure<br>• Home treatment (oxygen, nebulizer)<br>• Medications (theophylline, steroids, inhalers<br>• Toxic exposure, smoke inhalation | • Shortness of breath<br>• Pursed lip breathing<br>• Decreased ability to speak<br>• Increased respiratory rate / effort<br>• Wheezing, rhonchi, rales, stridor<br>• Use of accessory muscles<br>• Fever, cough<br>• Tachycardia | • Asthma / COPD (emphysema, bronchitis)<br>• Anaphylaxis<br>• Aspiration<br>• Pneumonia / Pleural effusion<br>• Pulmonary Embolus<br>• Pneumothorax<br>• Cardiac (MI or CHF)<br>• Pericardial tamponade<br>• Hyperventilation<br>• Inhaled toxin (carbon monoxide, etc) |



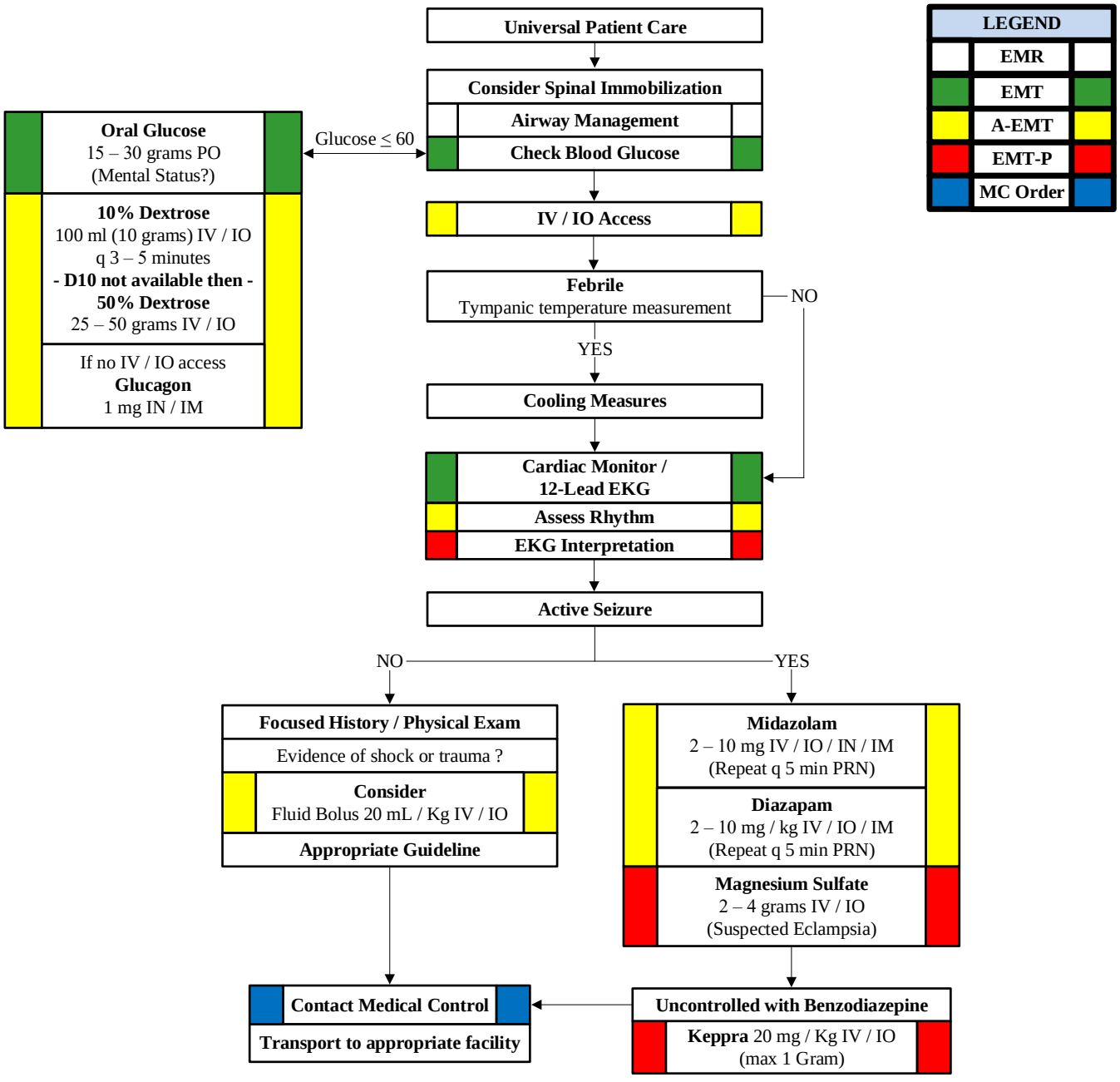
**SPECIAL CONSIDERATIONS:**

1. Atrovent (Ipratropium bromide)
    a. **Give with either the 1st or 2nd albuterol treatment. The combination treatment of albuterol and atrovent should only be administered once**
2. Epinephrine
    a. Drip
        i. Mix 1 mg of Epinephrine (1:10,000) in 250 mL of Normal Saline / D5W (gives a concentration of 4 mcg / ml); titrate from 2 - 10 mcg / min
    b. Nebulized
        i. 5 mg (1 mg / ml) of 1:1,000
    c. Push Dose / Syringe Use
        i. Mix 0.1 mg (1 ml) of Epinephrine (1:10,000) in 9 mL syringe of Normal Saline which gives a concentration of 10 mcg / ml
    d. Use with caution in patients greater than 40 years or in patients with known cardiovascular disease
3. Patients with COPD, the goal for $SpO_2$ and use of oxygen should be 88 – 94%
4. Non-transport of asthmatic patient, Treat and Release guideline
    a. **Criteria:**
        i. Patient must be able to refuse transport as per patient exhibiting decisional capacity to make appropriate decisions
        ii. Following treatment of an asthmatic exacerbation patient is conscious, alert to time, date and place, and requests that they not be transported to the hospital
        iii. Patient lung sounds on auscultation are back to baseline
    b. **Guideline for Treat and Release:**
        i. If the criteria above are met, then the patient is a candidate for Treat and Release.
        ii. The patient must be released to the care of a responsible individual who will remain with the patient as an observer for a reasonable time
        iii. The patient should be given both verbal and written instructions for follow-up care prior to being released:
            1. Take action to prevent a recurrent episode such as remain in the care of a responsible individual
            2. Use medication as directed

# TAB 3 GUIDELINE 20

## SEIZURE

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Fever<br>• Prior history of seizures<br>• Seizure medications<br>• Reported seizure activity<br>• History of recent head trauma<br>• Congenital abnormality | • Observed seizure activity<br>• Altered mental status<br>• Hot, dry skin or elevated body temperature | • Infection / Fever<br>• Head trauma<br>• Medication or toxin<br>• Hypoxia or respiratory failure<br>• Hypoglycemia<br>• Metabolic abnormality / acidosis<br>• Tumor |



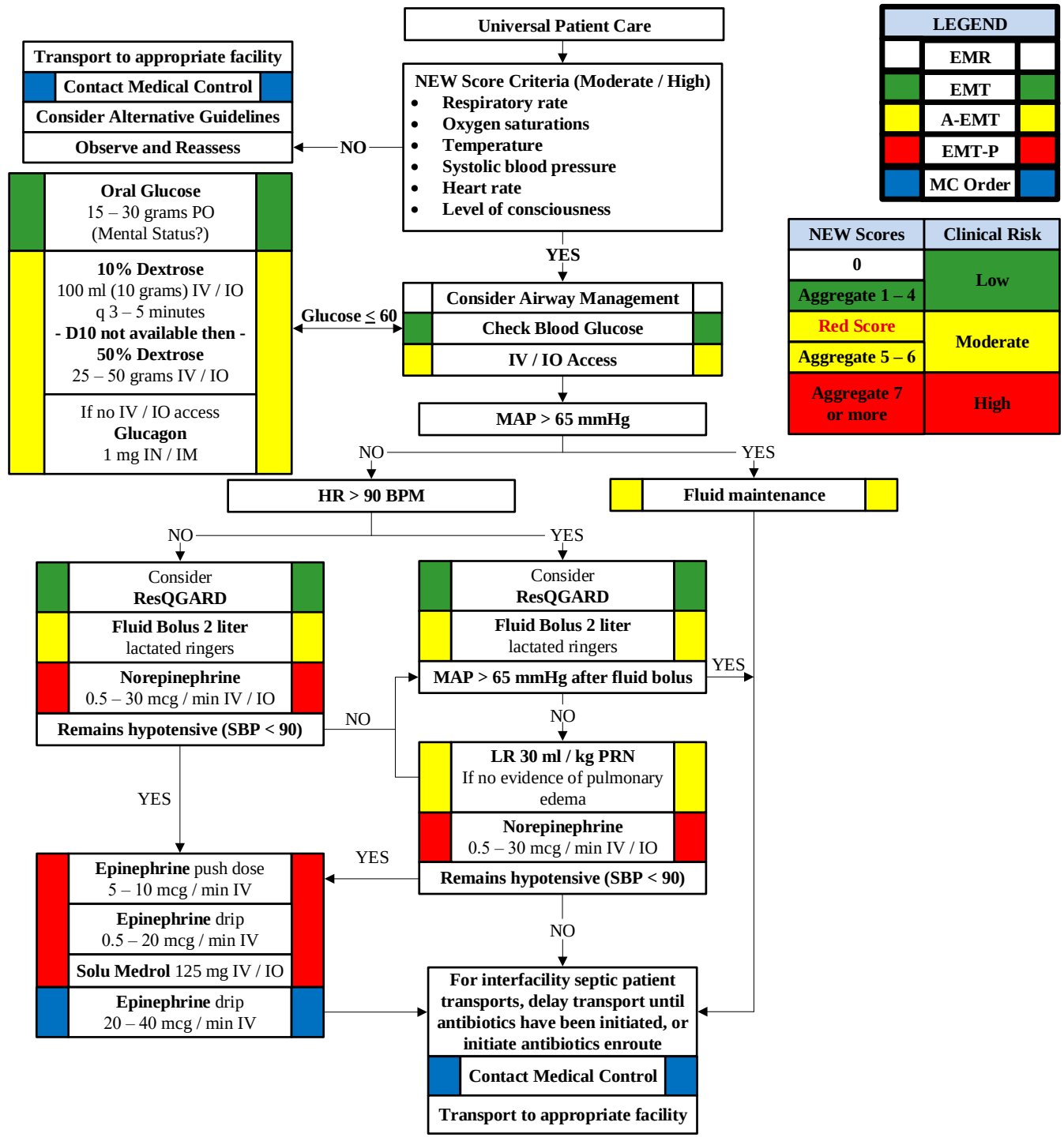
**SPECIAL CONSIDERATIONS:**

1. If an actively seizing patient is encountered, move hazardous materials away from the patient. Protect the patient's head from injury. Remember to always immediately check for pulses after seizure activity stops.
    a. Trauma to the tongue during seizure activity is unlikely to cause serious problems. Attempts to force anything into the patient's airway may cause complete obstruction.
2. Seizure Types
    a. **Status epilepticus** is defined as two or more successive seizures without a period of consciousness or recovery. This is a true emergency requiring rapid airway control, treatment, and transport.
    b. **Grand Mal seizures (generalized)** are associated with loss of consciousness, incontinence, and tongue trauma.
    c. **Focal seizures (petit mal)** effect only a part of the body and are not usually associated with a loss of consciousness.
    d. **Jacksonian seizures** are seizures that start as a focal seizure and become generalized.
3. Assess possibility of occult trauma and substance abuse. If evidence or suspicion of trauma, full c-spine immobilization is required.
4. Be prepared for airway problems with continued seizures. The **Airway Guideline** should be considered for all patients unable to protect their own airway (i.e., semi-conscious, unconscious).
5. **The following guidelines must be followed for Versed administration for seizure control**
    a. Frequent assessment of airway for compromise requiring assistance.
    b. Continuous pulse oximetry monitoring.
    c. If advanced airway placed, continuous end-tidal C02 monitoring (confirmed capnographic waveform).
    d. Frequent assessment of blood pressure. Maintain SBP > 90 mmHg.

# TAB 3 GUIDELINE 21

## SEPSIS

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Fever<br>• Infection<br>• Medications<br>• Pregnancy<br>• Fluid loss - vomiting, diarrhea<br>• History of poor oral intake | • Fever<br>• Restlessness, confusion<br>• Weakness, dizziness<br>• Weak, rapid pulse<br>• Pale, cool, clammy skin<br>• Delayed capillary refill<br>• Hypotension | • Shock<br>  • Hypovolemia<br>  • Cardiogenic<br>  • Septic<br>  • Neurogenic<br>  • Anaphylactic<br>• Bacterial, viral or fungal infection |



**SPECIAL CONSIDERATIONS:**

1. Sepsis is a vasodilatory shock. Patients have relative volume depletion. Aggressive fluid resuscitation is the mainstay of treatment.
2. Acute sepsis management should be initiated as soon as possible and completed within 6 hours. If patient is > 6 hours from presentation contact medical control for direction.
3. Patients with sepsis require aggressive therapy including IV fluids (lactated ringer is the fluid of choice), antibiotic administration and if necessary vasopressors and airway management.
4. Patient should receive at minimum 2 liters fluid bolus before initiation of vasopressors.
5. Further evaluation of the degree of the septic patient is based upon the National Early Warning Score (NEWS)
    a. Maximum NEW score of (18)
    **b. RED score refers to an extreme variation in a single physiological parameter** (ie a score of 3 on the NEWS chart, colored RED to aid identification and represents an extreme variation in a single physiological parameter)

| PHYSIOLOGICAL PARAMETERS | 3 | 2 | 1 | 0 | 1 | 2 | 3 |
|---|---|---|---|---|---|---|---|
| Respiration Rate | ≤8 | | 9 - 11 | 12 - 20 | | 21 - 24 | ≥25 |
| Oxygen Saturations | ≤91 | 92 - 93 | 94 - 95 | ≥96 | | | |
| Any Supplemental Oxygen | | Yes | | No | | | |
| Temperature | ≤35.0 | | 35.1 - 36.0 | 36.1 - 38.0 | 38.1 - 39.0 | ≥39.1 | |
| Systolic BP | ≤90 | 91 - 100 | 101 - 110 | 111 - 219 | | | ≥220 |
| Heart Rate | ≤40 | | 41 - 50 | 51 - 90 | 91 - 110 | 111 - 130 | ≥131 |
| Level of Consciousness | | | | A | | | V, P, or U |

6. **Maintenance fluid is calculated using the 4-2-1 rule**
    a. 1st 10 kg of body weight x 4 ml
    b. 2nd 10 kg of body weight x 2 ml
    c. Remaining kg of body weight x 1 ml
    d. Example for 80 kg person

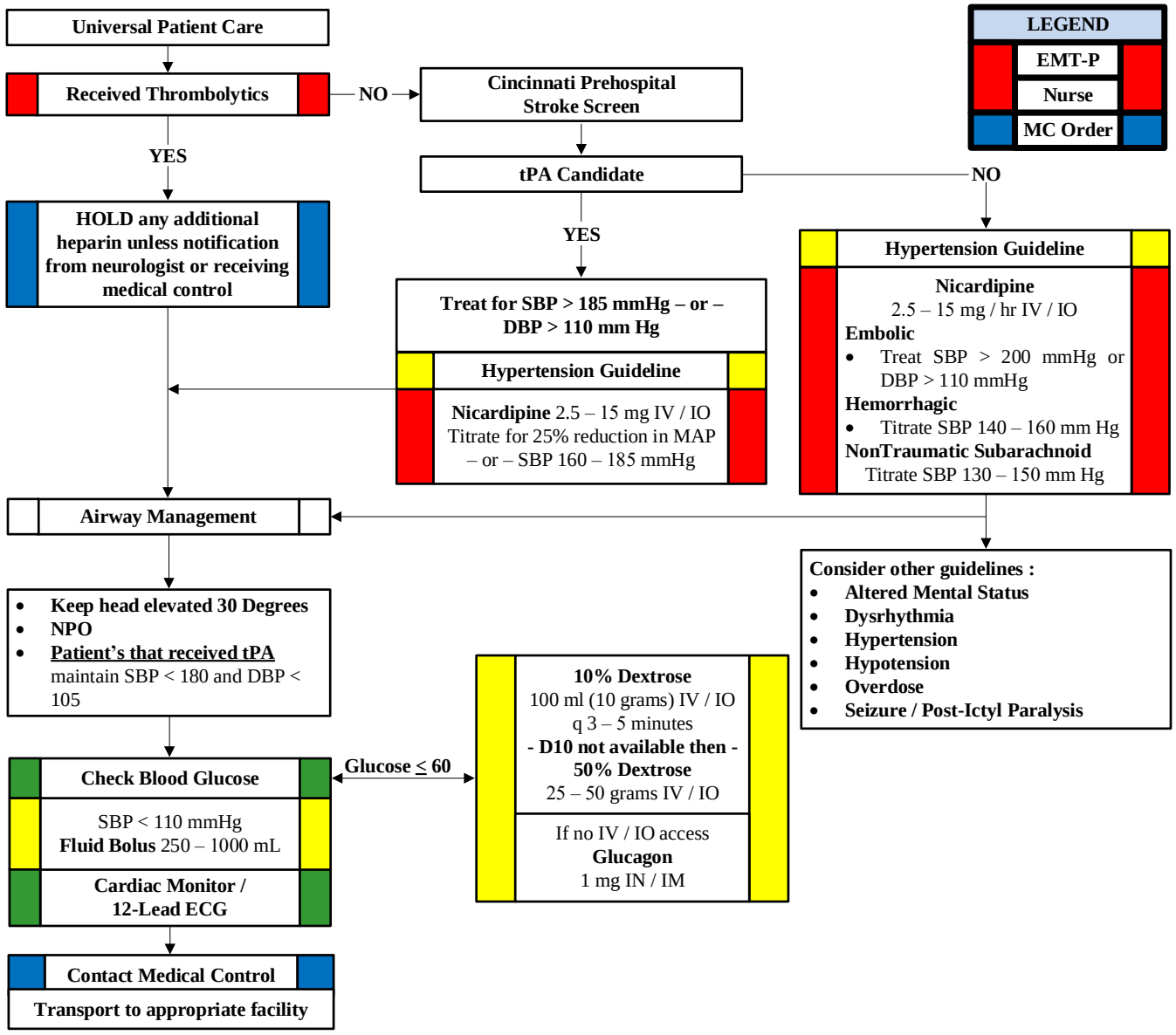
i. 10 kg x 4 ml = 40 ml
ii. 10 kg x 2 ml = 20 ml
iii. 60 kg x 1 ml = 60 ml
iv. Total maintenance fluid = 120 ml

7. Epinephrine
    e. Drip
        i. Mix 1 mg epinephrine (1:10,000 or 1:1000 concentration) in 250 ml bag normal saline or D5W to give 4:1 concentration, mix in 500 ml bag normal saline or D5W to give 2:1 concentration. Titrate 2 – 10 mcg / min
    f. Push dose
        i. Mix 0.1 mg (1 ml) epinephrine (1: 10,000) in 9 ml NS to give 10:1 concentration. Give 0.5 – 1 ml dose pushes every 1 – 2 minutes for blood pressure control
8. Resources
    a. https://www.rcplondon.ac.uk/projects/outputs/national-early-warning-score-news

# TAB 3 GUIDELINE 22

## STROKE – INTERFACILITY TRANSFER

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Previous CVA, TIA's<br>• Previous cardiac / vascular surgery<br>• Cardiac history, Atrial fibrillation, CAD, seizure, diabetes, HTN<br>• Medications (blood thinners)<br>• History of trauma<br>• Occult blood loss (GI, ectopic)<br>• Females: LMP, vaginal bleeding<br>• Fluid loss: nausea, vomiting, diarrhea<br>• Medications | • Altered mental status<br>• Weakness / Paralysis<br>• Blindness or other sensory loss<br>• Aphasia / Dysarthria<br>• Syncope / Loss of consciousness with recovery<br>• Vertigo / Dizziness<br>• Vomiting<br>• Headache / Seizures<br>• Respiratory pattern change<br>• Hypertension / hypotension<br>• Palpitations, slow or rapid pulse | • See Altered Mental Status<br>• TIA (Transient Ischemic Attack)<br>• Seizure<br>• Hypoglycemia<br>• Stroke<br>  • Thrombotic, Embolic (85%)<br>  • Hemorrhagic (15%)<br>• Tumor<br>• Trauma<br>• Orthostatic hypotension<br>• Cardiac syncope<br>• Hypoglycemia |



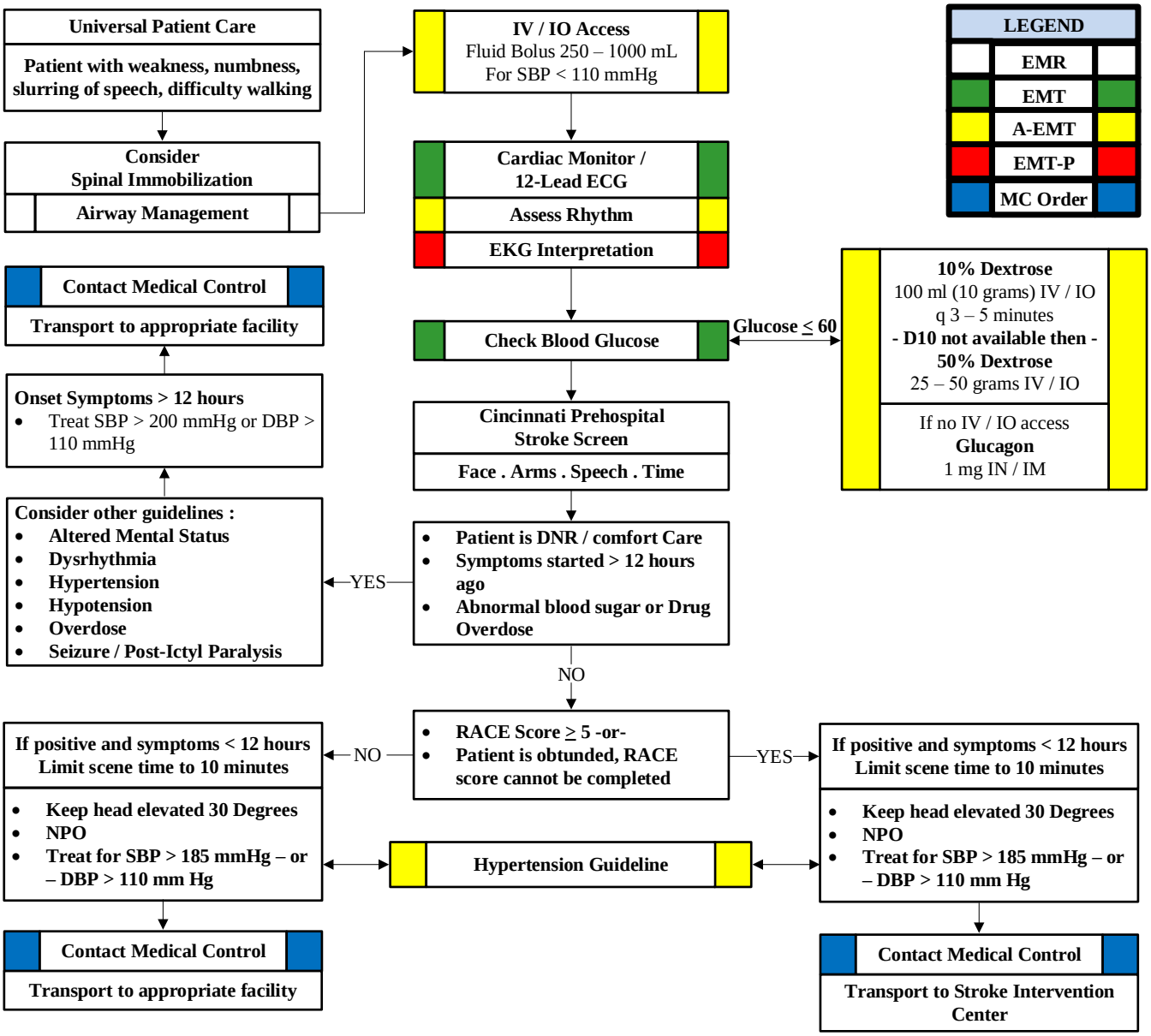
**SPECIAL CONSIDERATIONS:**

1. **Patients that have received tPA prior to transport or while in transport:**
    a. Should be handled with care to prevent any bleeding.
    b. Neurologic examination should be performed every 15 minutes.
    c. **<u>SHOULD NOT</u> receive any additional anticoagulants given during transport** (this would include heparin / aspirin / Plavix, etc) unless directed by receiving neurologist or medical control.

# TAB 3 GUIDELINE 23

## STROKE – SCENE

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Previous CVA, TIA's<br>• Previous cardiac / vascular surgery<br>• Cardiac history, Atrial fibrillation, CAD, seizure, diabetes, HTN<br>• Medications (blood thinners)<br>• History of trauma<br>• Occult blood loss (GI, ectopic)<br>• Females: LMP, vaginal bleeding<br>• Fluid loss: nausea, vomiting, diarrhea<br>• Medications | • Altered mental status<br>• Weakness / Paralysis<br>• Blindness or other sensory loss<br>• Aphasia / Dysarthria<br>• Syncope / Loss of consciousness with recovery<br>• Vertigo / Dizziness<br>• Vomiting<br>• Headache / Seizures<br>• Respiratory pattern change<br>• Hypertension / hypotension<br>• Palpitations, slow or rapid pulse | • See Altered Mental Status<br>• TIA (Transient Ischemic Attack)<br>• Seizure<br>• Hypoglycemia<br>• Stroke<br>  • Thrombotic, Embolic (85%)<br>  • Hemorrhagic (15%)<br>• Tumor<br>• Trauma<br>• Orthostatic hypotension<br>• Cardiac syncope<br>• Hypoglycemia |



**SPECIAL CONSIDERATIONS:**

1. The most common causes of stroke are:
    a. **Cerebral thrombosis** (a blood clot obstructing the artery).
    b. **Cerebral embolus** (a mass or air bubble obstructing the artery).
    c. **Cerebral hemorrhage** (ruptured artery / ruptured aneurysm).
2. To facilitate accuracy in diagnosing stroke and to expedite transport, an easy-to-use neurological examination tool is recommended. Utilize the **Cincinnati Prehospital Stroke Screen (CPSS)** for evaluation of acute, non-comatose, non-traumatic neurovascular complaints. The CPSS evaluates using **F.A.S.T.T.** criteria (**F**acial palsy, **A**rm weakness, **S**peech abnormalities, **T**ime of onset/**T**ransport). **If any one of the three components of the CPSS is abnormal, the probability of stroke is 72%.**
    a. Onset of stroke symptoms is defined as the last witnessed time the patient was symptom-free (i.e., awakening with stroke symptoms would be defined as an onset time of the previous evening when the patient was symptom-free).
3. Not all neurologic deficits are caused by a stroke. Look for other treatable medical conditions such as:
    - Hypoglycemia
    - Hypothermia
    - Hypotension
    - Hypoxia
    - Hyperthermia
4. Potential concerns:
    a. A patient with a stroke can present with aphasia and still is completely alert. Talk to the patient, explain everything that you are doing and avoid comments that you would not want to hear yourself. This patient needs a tremendous amount of reassurance.
    b. Be alert for airway problems (difficulty swallowing, vomiting).
    c. Spinal immobilization should be provided if the patient sustained a fall or other trauma.
    d. Bradycardia may be present in a suspected stroke patient due to increased ICP.
5. Definitions
    a. Aphasia – inability to speak
    b. Agnosia – inability to process sensory information. Often loss of ability to recognize objects, persons, sounds, shapes or smells.
    c. Asomatognosia – deficit in body awareness. Can take the form of forgetting, ignoring, denying, disowning or misperceiving their own body (entirely or partially).
    d. Anosognosia – inability to gain feedback about one's own condition.

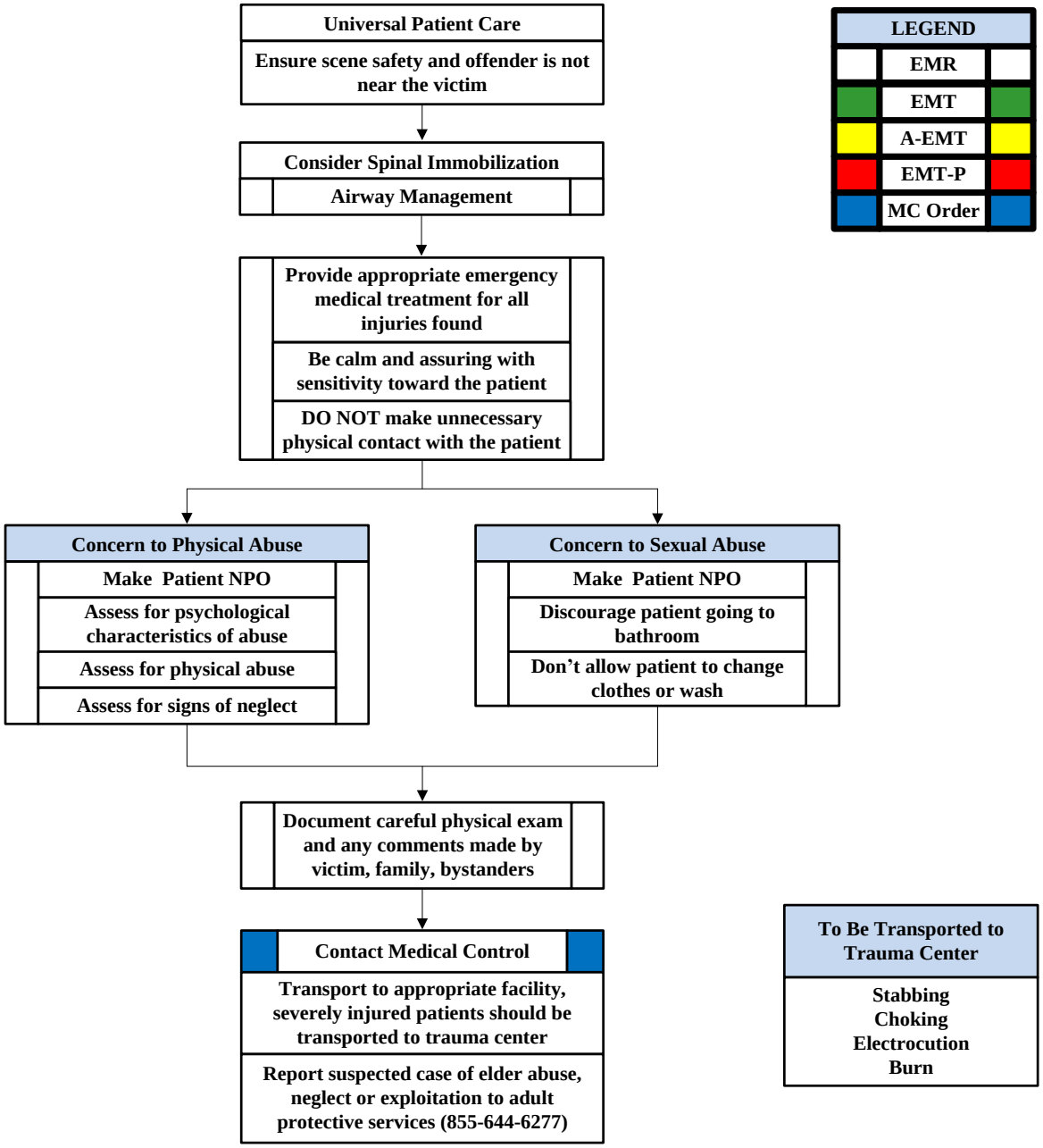
| Cincinnati Prehospital Stroke Scale (CPSS) | | | |
|---|---|---|---|
| **Sign/Symptom** | **How Tested** | **Normal** | **Abnormal** |
| ❖ **F**acial Droop | **Have the patient show their teeth or smile** | **Both sides of the face move equally** | **One side of the face does not move as well as the other** |
| ❖ **A**rm Drift | **The patient closes their eyes and extends both arms straight out for 10 seconds** | **Both arms move the same, or both do not move at all** | **One arm either does not move, or one arm drifts downward compared to the other** |
| ❖ **S**peech | **The patient repeats "The sky is blue in Cincinnati"** | **The patient says correct words with no slurring of words** | **The patient slurs words, says the wrong words, or is unable to speak** |
| ❖ **T**ime of onset | **Observed by a valid historian (symptoms < 3 hours – Limit scene time to 15 minutes)** | | |
| ❖ **T**ransport | **The patient is considered a possible CVA patient if any of the tested signs or symptoms is abnormal.** | | |

| Rapid Arterial Occlusion Evaluation Scale (RACE SCORE) | | | | |
|---|---|---|---|---|
| **Facial palsy** | Ask the patient to show teeth | Absent<br>Mild<br>Moderate to severe | Symmetrical movement<br>Slightly asymmetrical<br>Completely asymmetrical | 0<br>1<br>2 |
| **Arm motor function** | Extending the arm of the patient 90 degrees (if sitting) or 45 degrees (if supine) | Normal to mild<br>Moderate<br>Severe | Limb upheld more than 10 seconds<br>Limb upheld less than 10 seconds<br>Patient do not raise the arm against gravity | 0<br>1<br>2 |
| **Leg motor function** | Extending the leg of the patient 30 degrees (in supine) | Normal to mild<br>Moderate<br>Severe | Limb upheld more than 5 seconds<br>Limb upheld less than 5 seconds<br>Patient do not raise the leg against gravity | 0<br>1<br>2 |
| **Head and gaze deviation** | Observe eyes and cephalic deviation to one side | Absent<br><br>Present | Eye movements to both sides were possible and no cephalic deviation was observed<br>Eyes and cephalic deviation to one side was observed | 0<br><br>1 |
| **If right hemiparesis (Aphasia)** | Ask the patient two verbal orders<br>• Close your eyes<br>• Make a fist | Normal<br>Moderate<br>Severe | Performs both tasks correctly<br>Performs one task correctly<br>Performs neither task | 0<br>1<br>2 |
| **If left hemiparesis (Agnosia)** | Ask:<br>**Asomatognosia**<br>Whose arm is this? (while showing him/her the paretic arm)<br>**Anosognosia**<br>How well can you move this arm? | Normal<br>Moderate<br>Severe | No asomatognosia or anosognosia<br>Asomatognosia or anosognosia<br>Both of them present | 0<br>1<br>2 |
| | | | **Score Total (0 – 9)** | |

# TAB 3 GUIDELINE 24

## SUSPECTED ABUSE | NEGLECT

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Events leading up to call<br>• Has individual gone to the bathroom, showered<br>• History of trauma | • Bruising to extremities<br>• Vaginal injury<br>• Withdrawal from caregiver / EMS provder | • Sexual abuse<br>• Neglect<br>• Traumatic injuries |



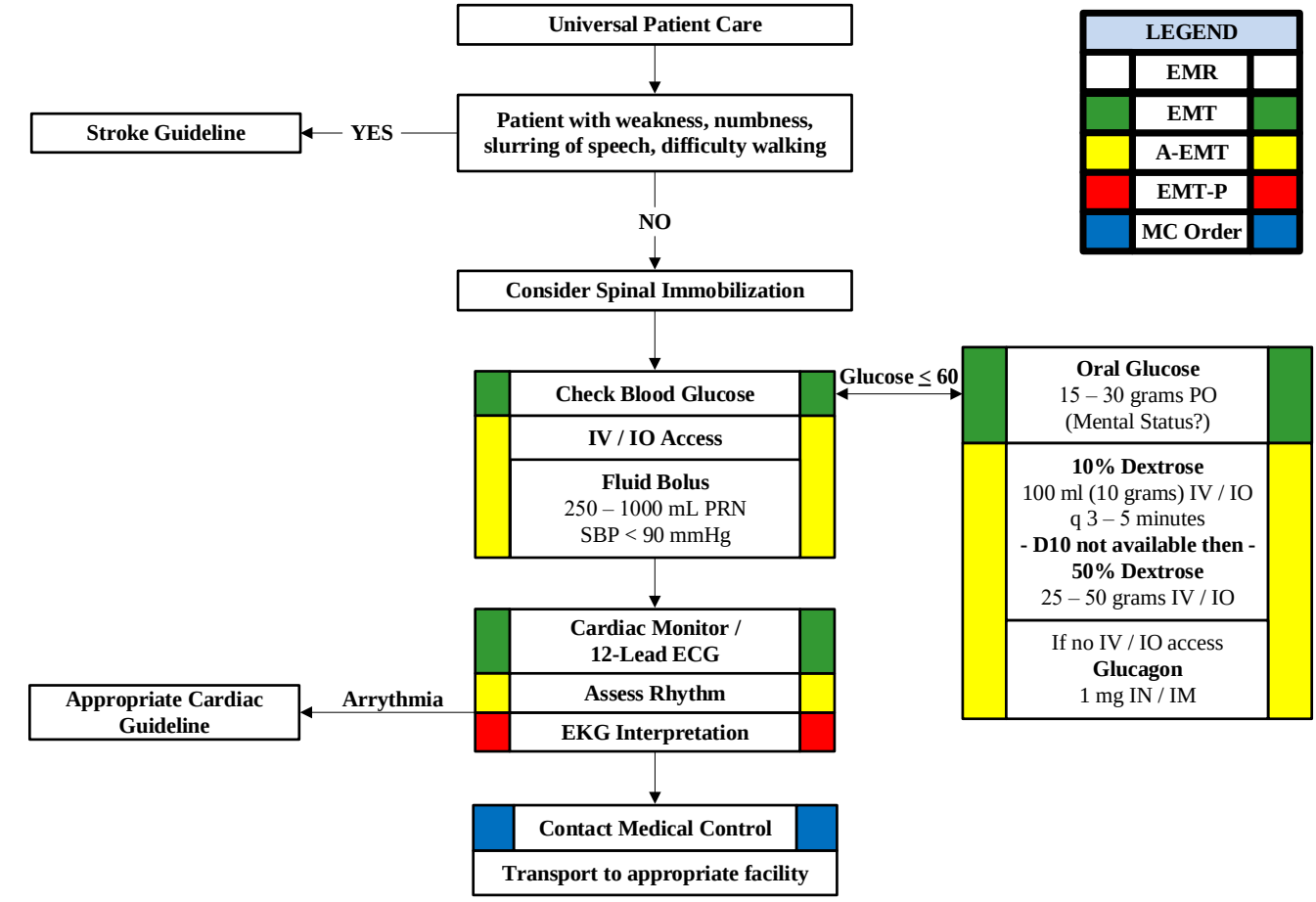
**SPECIAL CONSIDERATIONS:**

1. Reporting concern of abuse, neglect or exploitation
    a. Per Ohio Revised Codes (ORC) 2151.421 and 5101.61 EMS and Fire personnel are **REQUIRED** to report abuse, neglect or exploitation of adult (elderly) or child (under the age of 18)
    b. Report suspected child abuse, neglect or exploitation to Ohio's Public Children Service Agencies for your respective county or free hotline at 855-642-4453
    c. Report suspected elderly abuse, neglect or exploitation to Ohio's Adult Protective Services for your respective county or free hotline at 855-644-6277
2. If possible, have a witness the same gender as the victim present at all times
3. Wrap a plastic sheet around the victim if possible
4. DO NOT inspect genitals unless evidence of uncontrolled hemorrhage, trauma, or severe pain is present
5. DO NOT allow patient to shower or douche
6. Collect patient's clothing when possible
    a. Place clothing in plastic sheet or separate plastic/paper bags with ID labels and found location
    b. Leave all sheets placed in plastic/paper bag with patient at facility
    c. Notify all staff of clothing samples

# TAB 3 GUIDELINE 25

## SYNCOPE

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Previous CVA, TIA's<br>• Previous cardiac / vascular surgery<br>• Cardiac history, Atrial fibrillation, CAD, seizure, diabetes, HTN<br>• Medications (blood thinners)<br>• History of trauma<br>• Occult blood loss (GI, ectopic)<br>• Females: LMP, vaginal bleeding<br>• Fluid loss: nausea, vomiting, diarrhea<br>• Medications | • Altered mental status<br>• Weakness / Paralysis<br>• Blindness or other sensory loss<br>• Aphasia / Dysarthria<br>• Syncope / Loss of consciousness with recovery<br>• Vertigo / Dizziness<br>• Vomiting<br>• Headache<br>• Seizures<br>• Respiratory pattern change<br>• Hypertension / hypotension<br>• Palpitations, slow or rapid pulse | • See Altered Mental Status<br>• TIA (Transient Ischemic Attack)<br>• Seizure<br>• Hypoglycemia<br>• Stroke<br>  • Thrombotic, Embolic (85%)<br>  • Hemorrhagic (15%)<br>• Tumor<br>• Trauma<br>• Orthostatic hypotension<br>• Cardiac syncope<br>• Hypoglycemia |



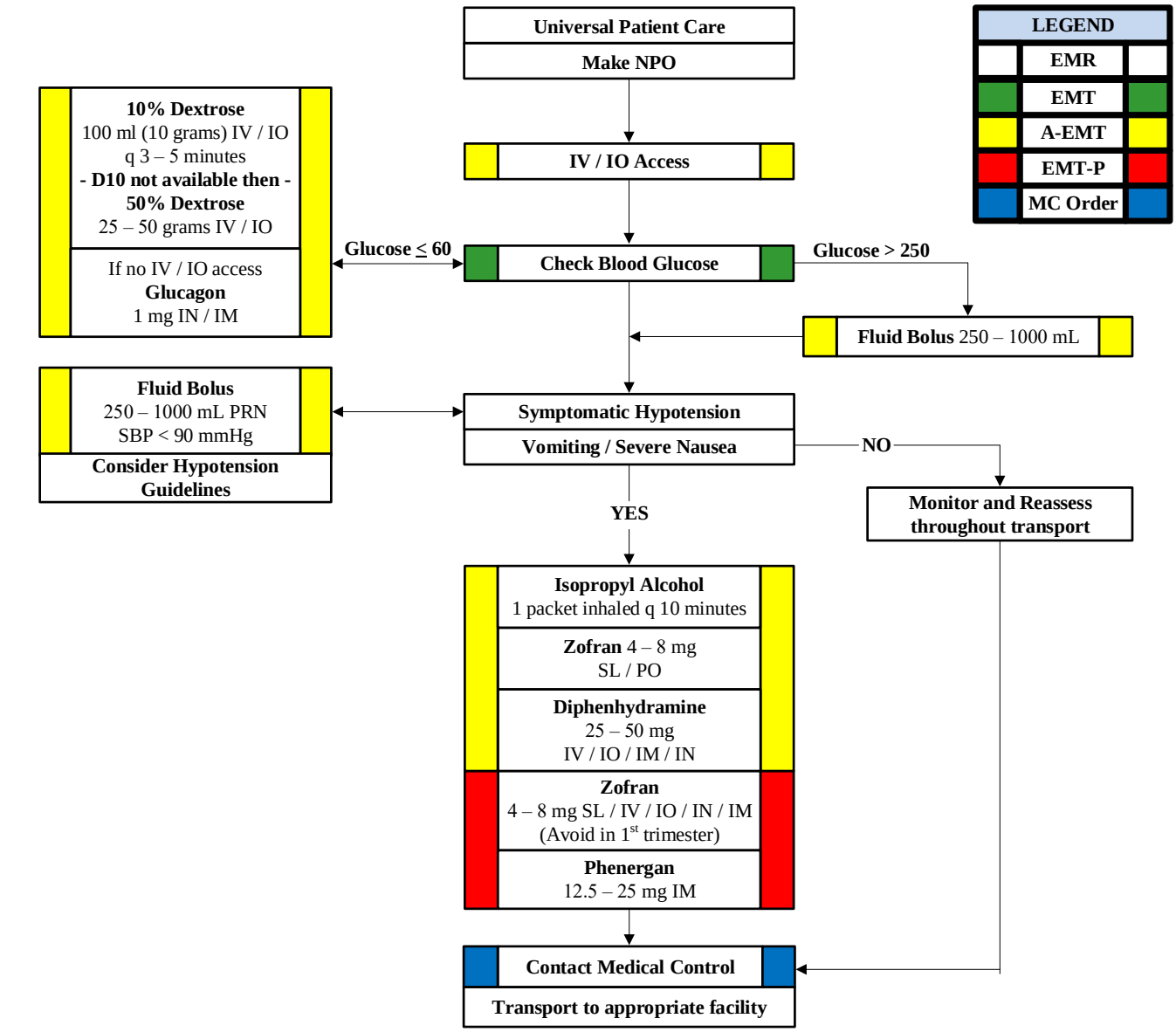
**SPECIAL CONSIDERATIONS:**

1. Syncope is defined as a transient state of unconsciousness from which the patient has recovered. If patients present with altered mentation, treat per the **Altered Mental Status Guideline.**
2. Most syncope is vasovagal in nature and characterized by dizziness progressing to fainting/unconsciousness which may last for several minutes. For many patients, recumbent positioning may be sufficient to restore vital signs and level of consciousness to within normal values. Syncope which occurs without warning is potentially serious and often caused by cardiac arrhythmia.
3. Assess for signs and symptoms of trauma if associated or questionable fall with syncope.
4. **Patients over the age of 40 with syncope even though apparently normal, should be transported.**
    a. In middle aged or elderly patients, syncope can be due to a number of potentially serious conditions. The most important things to recognize are:
        i. Arrhythmias.
        ii. Occult GI bleeding.
        iii. Seizures.
        iv. Ruptured abdominal aortic aneurysm.
        v. Cerebral hemorrhage.

# TAB 3 GUIDELINE 26

# VOMITING AND DIARRHEA

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Age<br>• Time of last meal<br>• Last bowel movement/emesis<br>• Improvement or worsening with food or activity<br>• Duration of problem<br>• Other sick contacts<br>• Past medical history<br>• Medications<br>• Menstrual history (pregnancy)<br>• Travel history | • Pain<br>• Character of pain<br>• Distention<br>• Diarrhea / Constipation<br>• Anorexia<br>• Radiation<br>• Fever, headache, blurred vision, weakness, malaise, cough, headache, dysuria, mental status changes, rash | • GI or renal disorders<br>• Diabetic ketoacidosis<br>• Gynecologic disease<br>• Infections (pneumonia, influenza)<br>• Electrolyte abnormalities<br>• Food or toxin induced<br>• Medication or substance abuse<br>• Pregnancy |



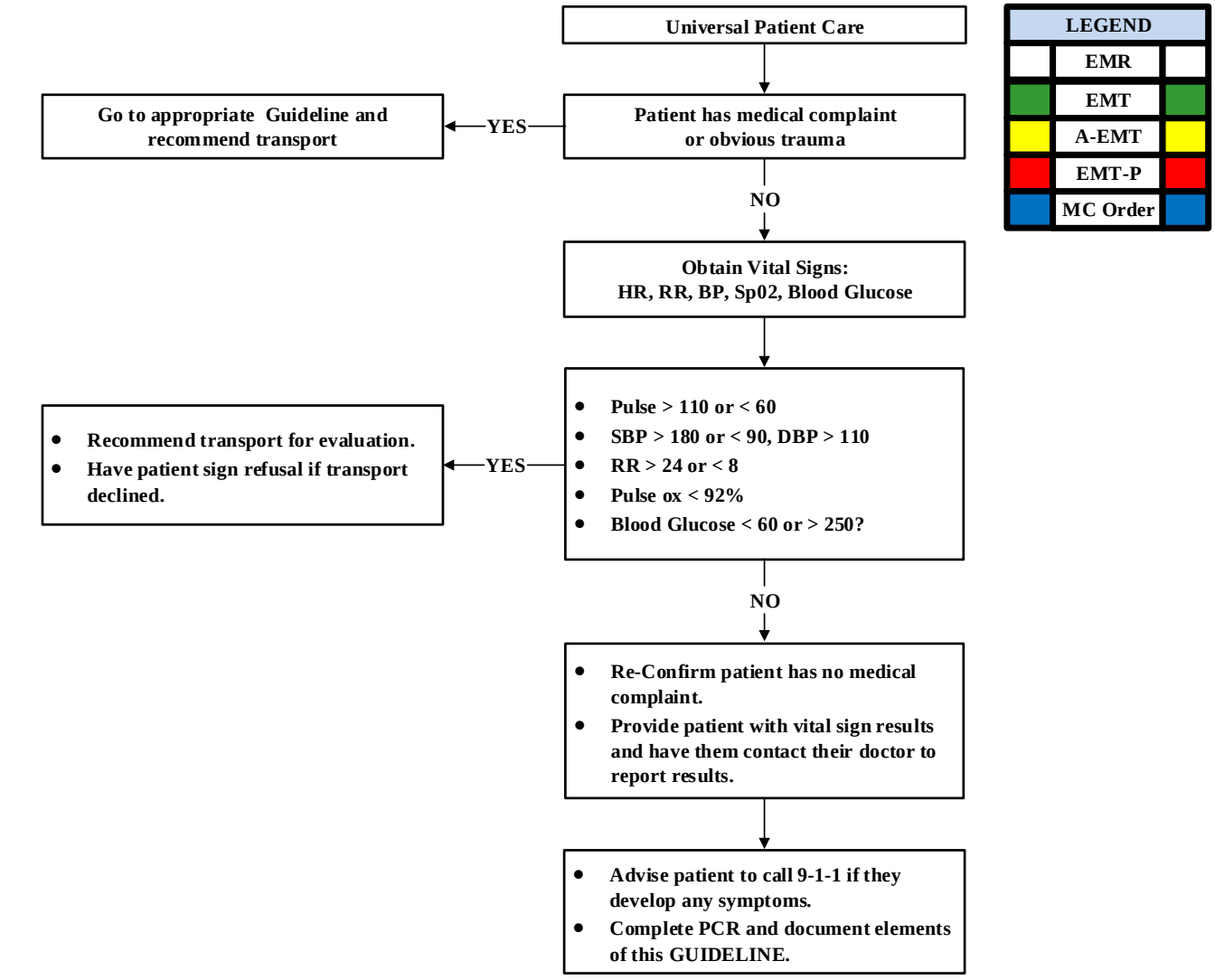
**SPECIAL CONSIDERATIONS:**

1. Vomiting and diarrhea may be symptoms of more serious problems, but all represent some degree of hypovolemia. The most serious causes are GI bleed or other intra-abdominal catastrophe. A rare cardiac patient may also present with vomiting or diarrhea as the predominate symptom so 12 Lead EKG should be done if cardiac risk factors are present.
2. Check at the house for evidence of overdose; patient who doesn't call the squad for medication ingestions may call later when GI symptoms become severe.
3. Blood in the GI tract is an irritant: it causes vomiting and diarrhea. Only if upper tract bleeding is extremely brisk will the blood reach the rectum undigested.
4. GI bleeders may be very sick and hypovolemic without showing an obvious source of their problem. A rapid transport guideline with IV fluid resuscitation is necessary for potential improved patient outcome.

# TAB 3 GUIDELINE 27

# WELL PERSON CHECK

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Patient presents requesting "blood pressure check"<br>• EMS responds to "assist invalid"<br>• Someone else called 911; patient did not request<br>• Other situation in which patient does not have a medical complaint or obvious injury | • Assess for medical complaint<br>• For patients with hypertension, particularly check for chest pain, shortness of breath, and/or neurologic changes<br>• For assist invalid calls, particularly check for syncope, trauma from fall, or inability to ambulate | • Hypertensive urgency<br>• Hypertensive emergency<br>• Syncope<br>• Cardiac ischemia<br>• Cardiac dysrhythmia<br>• Fracture<br>• Head trauma |



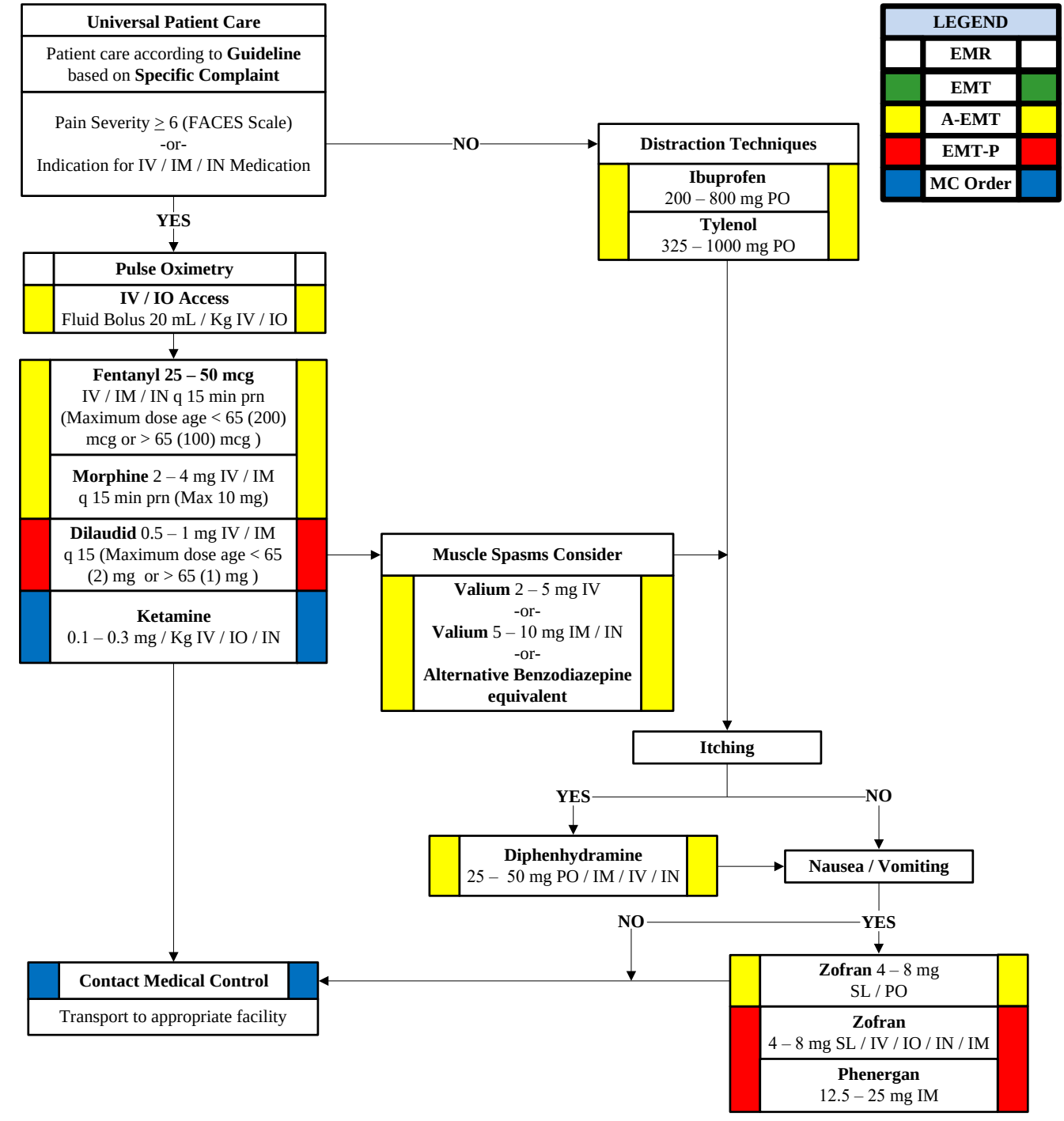
**SPECIAL CONSIDERATIONS:**

1. Patients who are denying more severe symptoms may initially present for a “routine check”. Please confirm with the patient at least twice that they have no medical complaints.
2. All persons who request service are considered patients and shall have a PCR completed.
3. For patient in this category, the PCR may be brief but must include vital signs and documentation of the lack of a medical complaint. Additionally, patients with a potential mechanism for trauma should have a trauma exam completed.
4. Should a patient refuse evaluation and/or decline further evaluation once have started, document as much as you can.
5. Even patients who refuse vital signs can be observed and respirations measured. The PCR narrative is IMPORTANT in these and all cases, and must accurately and thoroughly describe the patient encounter.

# TAB 3 GUIDELINE 28

## ADULT PAIN CONTROL GUIDELINE

| HISTORY | SIGNS / SYMPTOMS | DIFFERENTIAL |
|---|---|---|
| • Age<br>• Location<br>• Duration<br>• Severity (1-10)<br>• Past medical history<br>• Medications<br>• Drug allergies | • Severity (pain scale)<br>• Quality (sharp, dull, etc)<br>• Radiation<br>• Relation to movement, respiration<br>• Pain increased with palpation of area | • Per specific protocol<br>• Musculoskeletal<br>• Visceral (abdominal)<br>• Cardiac<br>• Pleural / Respiratory<br>• Neurogenic<br>• Renal (colic) |



**SPECIAL CONSIDERATIONS:**

1. This guideline will be utilized without MEDICAL CONTROL orders for adult patients > 16 years of age for treatment of pain from isolated extremity fractures, dislocations, burns and treatment of cancer related pain. Appropriate documentation and signed releases are required for treat and release situations. PO medications with minimal oral fluids only if surgical / sedation procedures should be necessary for definitive care.
2. Guideline for safe use of analgesics:
    a. Be aware of the effects of combining drugs: Adding one CNS depressant or hemodynamic depressant to another can create unpredictable changes.
    b. Don't forget about medication allergies: Adding IV analgesics on top of recently taken oral sedatives, analgesics or muscle relaxants may cause unpredictable additive effects as well.
    c. Know your pain management goal: Your goal may actually be different for different types of patients (Reduction of pain vs. removal of pain).
    d. Give a complete report to ED staff: Drugs given, time, results, and adverse effects.
3. Oral ibuprofen should be avoided in any patient with an acute fracture.
4. Appropriate documentation and signed releases are required for treat and release situations. PO pain medication only. Patient unable to be released if given narcotic medication.
5. Ketamine should be given only if there is no opiate pain medication available and online medical control has been contacted.
6. Akithesia response from Phenergan is a potential complication. This is the restless feeling that a patient will get. This symptom can be controlled / relieved with giving diphenhydramine (Benadryl).