Verde Valley Medical Center
Northern Arizona Healthcare

Prehospital Care Treatment Guidelines

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TABLE OF CONTENTS **PG**

APPENDIX

INTRODUCTION

The purpose of these treatment guidelines is to provide uniform prehospital care for agencies under the medical direction of Verde Valley Medical Center Base Hospital (referred to as VVEMS Agencies). They are directed towards A.L.S. (IEMT99/CEP) levels of Arizona Department of Health Services (A.D.H.S) certified pre-hospital care providers.

GOALS OF PRE-HOSPITAL CARE

The first goal of pre-hospital care is on-scene recognition and treatment of conditions in which the delay of treatment might increase morbidity and mortality. Once the patient enters the Emergency Medical Services (EMS) system, life-saving interventions should be initiated immediately.

The second goal is rapid transport, with only minimal on-scene delay, for patients whose conditions require immediate hospital stabilization.

The third goal of pre-hospital care is to provide initial stabilization, safe symptom relief and safe transport to a medical facility.

The fourth goal is on-scene triage in multiple casualty incidents.

To achieve the above stated goals of pre-hospital care, the medic must be skilled in patient assessment. He/she must be able to recognize those conditions where on-scene intervention is necessary and those when rapid transport is best.

Assessment must be rapid, succinct and goal directed. Main emphasis is on the primary survey. Secondary survey should not delay either life saving interventions or transport. Interventions identified in the assessment should be acted on immediately.

MEDICAL CONTROL

It is important to recognize that emergency care rendered in the pre-hospital environment, even though performed by an emergency medical technician, remains the responsibility of the On-line Physician. These treatment guidelines are not intended for use as inflexible rules for pre-hospital care, but rather as guidelines for physicians and pre-hospital care personnel alike. Although they represent a minimum standard of care against which actions may be judged, treatment guidelines are not absolute. Common sense and good judgment are equally important. Since individual situations may require variance from these guidelines, the final authority is the independent medical judgment of the medical control physician. Also, it should be understood that skill levels of individuals will vary, and the online medical control may find it necessary to vary from these guidelines. EMS providers are expected to use online medical control as a real time consultant when there are any doubts or concerns as to what is the correct course of action.

STANDING ORDERS

Standing orders are those interventions, approved by the Administrative Medical Director, which may be done immediately, prior to radio contact with online medical control. Generally, they will include those life or limb saving procedures where either the delay caused by radio communication could contribute to death or where there is no disagreement about what should be done in a very specific situation.

MEDICAL CONTROL OPTIONS

Medical control option means that the procedure requires a specific order from the online medical control via radio or telephone prior to performance. Any situation where procedures are performed, which by these treatment guidelines require a medical control option, and such medical control option is not obtained because of inability to establish radio contact or due to the critical nature of the situation, clear cut indications for the procedure(s) must exist (according to the treatment guidelines herein). We do not wish patients to suffer because of inadequacies or failures of the communication system but patient safety is of great importance. Communication with the Base Hospital should be established as soon as possible in such incidents.
Medical control options will be noted as footnotes in the individual treatment guidelines.

DETERMINATION OF DEATH

Prehospital personnel respond to victims of cardiopulmonary arrest in a variety of circumstances. The following guidelines are intended to assist in determining how and when resuscitative **measures should be withheld, initiated, and/or terminated. Refer to appropriate related treatment** algorithms for other specific information.

If the victim meets the criteria listed below, no resuscitative efforts need to be initiated. On-line medical control is NOT necessary. Contact law enforcement and initiate grief support. An EMS provider must remain with the victim until released to law enforcement.

All of the following criteria must be met:

- Patient is pulseless and apneic
- Presence of one or more signs of irreversible death
- Asystole is confirmed on the monitor in two leads for at least 12 seconds as defined in the guideline
- Hypothermia is not present

Signs of irreversible death:

- Decapitation
- Decomposition
- Transection of thorax or abdomen
- Burned beyond recognition
- Dependent Lividity and/or rigor mortis and Asystole in 2 leads for 12 seconds

WITHOLDING/TERMINATION OF RESUSCITATION

Field termination of resuscitative efforts may be considered for both trauma and medical patients. Patients must in cardiopulmonary arrest in a rhythm incompatible with life (asystole, pulseless electrical activity). Treat patients according to the trauma or medical field termination of guideline and associated treatment algorithm. On-line medical direction is required for all field terminations. Documentation on PCR should reflect termination of resuscitation time rather than time of death.

HEALTHCARE DIRECTIVES

If a valid Prehospital Medical Care Directive (orange DNR form) is present, no resuscitative measures are needed. A patch should be done to the base hospital if possible.

If a valid Living Will/Advanced Directive/Do Not Resuscitate consent or orders is present, begin resuscitation and contact medical control.

MEDICAL CONTROL OF ADVANCED LIFE SUPPORT (A.L.S.) AT THE SCENE

General Principles:

When an A.L.S. unit, under medical direction, is requested and dispatched to the scene of an emergency, a doctor/patient relationship has been established between the patient and the physician providing medical direction. The individual with the highest level of certification is responsible for management of the patient, and acts as the agent of medical direction unless the patient's physician is present.

If the patient's private physician is on the scene or a physician intervener* is present and he/she prefers to assume responsibility for care, the On-line Physician must be contacted and the situation discussed. Only Medical Control can relinquish care of the patient to another physician. Any action performed by the medic at the physician intervener's direction must be in line with local treatment guidelines. If not, Medical Control should be contacted. In any event, the physician intervener is responsible for appropriate documentation and, unless absolute necessity dictates otherwise, should accompany the patient to the hospital.

Intervener physician is a licensed physician who has not established a prior physician/patient relationship and who wishes to take charge of a medical emergency scene, and who is willing to provide evidence of licensure and agrees to continue care for the patient during transport to the hospital if feasible.

If an intervener physician is present and on-line medical direction does exist, the On-line Physician is ultimately responsible. If there is any disagreement between the intervener physician and the on-line physician, medical direction will remain with medical control. The on-line physician has the option of managing the case entirely, working with the intervener physician, or allowing him to assume responsibility. In the event that the intervener physician assumes responsibility, all orders to the A.L.S. provider should be repeated over the radio for

purposes of recording. The intervener physician should document his intervention in a manner acceptable to the local E.M.S. system. The decision of the intervener physician to accompany the patient to the hospital should be made in consultation with the on-line physician. If on-line medical direction is not possible, treatment guidelines will be followed.

ALS CALLS

- A.L.S. providers shall contact the On-line Physician for medical direction, as defined in the treatment guidelines. Provider should request permission to downgrade to B.L.S. if meets guidelines established in Appendix J. The provider shall clearly state at the beginning of an on-line communication if they are making a "courtesy notification" or a "patch." Any requested orders outside Offline Guidelines you are seeking orders, you are making a patch.

COMMUNICATIONS

GENERAL PROCEDURE:

Participating A.L.S. providers shall initiate ALS care through the use of treatment guidelines, and dependent upon patient response or treatment guideline criteria shall have the following communication options:

1. Stable Situation:
    a. Courtesy Notification (CN) with Base Hospital
        i. Information to be relayed via nurse intermediary to Sedona Emergency Center.
        ii. Provider must contact all other receiving facilities with courtesy notification
    b. Patch with Base Hospital
2. Unstable Situation after implementation of standing orders:
    a. Patch with Base Hospital
3. Unable to contact Base Hospital:
    a. Patch with designated back-up for Base Hospital

DEFINITIONS:

1. **ALS STABLE SITUATION (Requires minimum of Courtesy Notification):**
    All patients are assumed to be ALS unless criteria for BLS are present and the providers and online medical direction are comfortable making the patient a BLS transport. This will require a patch by medic requesting permission to down grade pt to BLS.
    SEE APPENDIX I for ALS Release of Patients for BLS Transport.

A patient with a single system or well-defined chief complaint(s) that after initial ALS intervention is:

- Without neurological, respiratory and/or cardiovascular compromise; or
- Has responded favorably to initial treatment modalities (resolving or improving chief complaint and/or signs/symptoms).

Criteria for ALS Stable Situations may include:

a. Conscious, alert and oriented to person, time, place and event (with consideration of pre-existing conditions) or an altered mental status in a non- traumatic event after treatment with no signs of impending central herniation, GCS maintained at $\geq$ 14 and stable vital signs.
b. Respirations within normal range for age group and without abnormal breath sounds (with consideration of preexisting conditions).
c. Pulse within normal range for age group and without irregularities (with consideration of preexisting conditions).
d. Blood pressure greater than 90 systolic and less than 180 systolic, or within normal range for age group (with consideration of pre-existing conditions).
e. No uncontrolled bleeding.
f. Relief of chest pain.

2. **ALS UNSTABLE SITUATIONS (Requires Patch):**

A patient with a single or multiple system or complex chief complaint with/without hemodynamic compromise and that does not respond favorably to initial treatment modalities. Criteria for an unstable patient condition may be indicated by the presence of any of the following:

a. Any situation where management is uncertain or risk benefit ratio of intervention is unclear or provider feels that patient is unstable or may deteriorate en route.
b. ALOC, adult or (with consideration of pre-existing conditions).pediatric all causes other than resolving postictal signs and symptoms (S/S).
c. Abnormal blood pressure (with consideration of pre-existing conditions).
d. Abnormal heart rate or rhythm persisting after treatment that is causing hemodynamic compromise (with consideration of pre-existing conditions).
e. Abnormal respiratory rate not responding to initial treatment (with consideration of pre-existing conditions).
f. Airway problems either before or after interventions.
g. Signs/symptoms of hypo-perfusion not improving.
h. Decreased motor or sensory ability (with consideration of pre-existing conditions)
i. Changes (deterioration) in presenting symptoms; stable patient who becomes unstable at any time.
j. Consent problems and ALS Refusals.
k. Uncertain triage decisions.
l. Patients with a pulse in which transcutaneous pacemaker or electrical conversion therapy is used.

3. **COURTESY NOTIFICATION (CN):**
Required contact with receiving facility after ALS care according to treatment guidelines and reassessment. Vital signs are within normal limits, the patient's condition is stable or improved. No medical control input is required in addition to that covered under the treatment guidelines. This call is abbreviated and is designed to allow receiving facility to prepare for arrival.

The following minimum information should be given during a "CN":

a. Identify self and agency
b. Mechanism of injury / description of illness
c. Age, sex, chief complaint, vital signs, GCS, blood glucose and pertinent findings.
d. Interventions, patient response/status
e. ETA to hospital

4. **PATCH:**

Required on-line medical direction with Base Hospital (or back-up) (requires physician input). A patch includes the above information and a request for recommendations or general or specific treatment advice either from physician or his/her representative.

EXCEPTIONS: (Critical Trauma, Medical Codes)

In order to concentrate efforts on administering patient care and enhancing early communication to and preparedness of the receiving facilities of critical trauma patients and patients in cardiopulmonary arrest from medical causes, an abbreviated Courtesy Notification may be made with the receiving facility of these patients rather than a Patch under the following circumstances:

1. Appropriate treatment interventions are covered under trauma treatment guidelines and/or cardiopulmonary arrest treatment guidelines.
2. No question exists in the prehospital provider's judgment as to the Application/provision of care outlined in the specific Treatment Guidelines.
3. No additional medical direction is necessary in the prehospital provider's judgment for the provision of care and/or triage.

BASIC RADIO PROCEDURES

All communications must include the following information:

1. EMSCOM Vehicle I.D.
2. Medic name & certification level
3. Status of call (A.L.S vs. B.L.S.)(Patch vs. Courtesy Notification)
4. Number of patients (If more than one patient)
5. Age & sex of patient(s)
6. Chief complaint(s)
7. History and objective finding(s)
8. Treatment rendered & response to treatment
9. State the orders you are requesting
10. E.T.A. and destination

COMMUNICATION GUIDELINES

1. When using a radio, allow for a three-second delay after depressing the transmit key. This allows the electronics to fully engage.
2. Stop frequently and release transmit key to insure that the base hospital has received your transmission.
3. Ask for On-line Physicians to come on the line for any A.L.S. calls regarding patients you think might be unstable; or any time the scope of complexity of information requires direct contact with the physician.
4. Present information so that the listener gets an overview early (e.g. "... a 68 year old male, auto accident victim in acute respiratory distress..."). Report findings in the same order you evaluate a patient, i.e. primary assessment, vital signs, secondary assessment.
5. You need not list all relatively minor findings that do not affect immediate patient care decisions
6. Communicate with courtesy, brevity, and clarity.
7. Repeat all orders received back to the base hospital—medicine, dose, route, frequency.
8. Remember that many people are listening to your radio communications, do not use patient names over radio communication. For Cathlab or Cardiac arrest patients use cell or land line communications to relay name and date of birth.
9. Follow Arizona Department of Public Safety (A.D.P.S.) EMSCOM Operations Manual.
10. Patches on B.L.S. patients should consume a minimum amount of time and only the most pertinent information.

COMMUNICATIONS SYSTEMS FAILURES

If unable to contact the Base Station via Hospital Radio or dedicated phone lines, contact should be made with your alternate Base Hospital. Any situation where procedures are performed, which by these treatment guidelines require a medical control option, and such medical control option is not obtained because of failure to establish radio contact, will be reviewed individually as to their appropriateness. Clear cut indications for procedures must exist.

Base Hospitals shall develop plans for medical control in the event of local equipment failure. Such plans should include contingencies for radio failure, power outages, structural failures, etc.

INTERMEDIARY'S RESPONSIBILITY IN RADIO COMMUNICATION

An intermediary is an emergency department nurse designated by the emergency physician to provide on-line medical supervision under verbal direction and control of the physician.

1. An intermediary will participate in daily communications and recording equipment troubleshooting procedure as outlined by A.D.P.S. R.C.C. Center policy.
2. An intermediary in contact with an A.L.S. unit will ask the emergency physician to come on-line at once if requested by the A.L.S. unit. If the emergency physician is unable to come on-line the nurse intermediary will relay all pertinent patient information and requests from the field to the on-duty physician. Any orders will then be relayed to field personnel.

3. Communications with A.L.S. providers shall be completed in a timely, organized manner.
4. When relaying verbal directions/orders to field units, the intermediary shall identify by name the On-line Physician giving the orders transmitted.

BODY SUBSTANCE ISOLATION

All patients should be considered potentially infectious. Standard precautions should be followed in accordance with Center for Disease Control (C.D.C.), Occupational Safety and Health Administration (O.S.H.A.), and base hospital guidelines.

TRANSPORTATION

The patient should go to the medical facility which best meets his medical needs. If not the closest hospital, this decision requires a medical control option unless previously approved by the Administrative Medical Director. The patient's choice of hospital should be considered when such a request does not adversely affect or delay care or the operation of the transporting agencies.
If immediate hospital (medical/surgical) intervention is required, the quickest form of transport must be considered.

- Flight decisions for trauma patients should be determined based off of the Arizona Trauma Triage Field Guidelines.
- Flight decisions for medical patients require Medical control input.

Scoop and Run involves rapid initiation of transport. It should not be undertaken until simple measures of airway control are performed on scene. The implementation of field procedures should not delay the transport of critical patients.

INTERFACILITY PATIENT TRANSPORTATION

Interhospital patient transfers on an emergency basis are commonly initiated when definitive or therapeutic needs of a patient are beyond the capacity of one hospital. A pre patch needs to be made to the On-line Medical Direction Physician prior to leaving the sending facility with an ALS patient. Any change in patient status requires the personnel to contact their Base Hospital, not the receiving facility for further orders.

1. All patients should be stabilized as much as possible before transfer.
2. E.M.S. personnel must receive an adequate summary of the patient's condition, current treatment, possible complications, other pertinent information, and sending physician's determination of level of service needed during the transport.
3. E.M.S. ALS personnel continue to operate under control of the Base Hospital. Any orders given to such medics on interfacility transfers must be in accordance with their treatment guidelines and must be reviewed and approved by on-line medical control as the treatment guidelines specifies prior to transport.
4. Transfer papers, summary, lab work, X-rays, etc., should be given to the transporting E.M.S. personnel, not the family or friends.

5. The receiving hospital physician must be contacted by the transferring physician and agree to accept the patient prior to the transfer.
6. The level of emergency personnel must be appropriate to the treatment needed or anticipated during transfer.
7. Patients with intravenous infusion must be transported by the appropriate level of personnel. If a patient is receiving medication outside the scope of the transferring A.L.S provider, that patient must be accompanied by an R.N. or Physician as indicated by the patient's condition.

AT SCENE TRANSFER OF CARE/MULTI AGENCY DOCUMENTATION

It is common for a variety of certified personnel with different skill levels to be providing care at the scene at one time. The fact that there is a higher skill level provider at the scene does not absolve each team member in patient care responsibilities.

Once on scene patient care is completed, and transportation of the patient is necessary, a few rules exist.

1. The A.L.S. provider with the highest skill level must accompany that patient to the receiving facility.
2. If care of the patient is transferred to another provider (that did not initiate the care), a report concerning patient scene, status, and care must be given to the provider when he or she accepts the patient.
3. Upon transfer of patient care, pertinent field information should be relayed without unnecessarily delaying transport.
4. When multiple teams render care, and do not arrive at the scene simultaneously, each team shall be responsible for reporting the care they rendered in written form. This is a minimum requirement and complex cases may require reporting of contemporaneous care in multiple reports if the report writer was not able to keep adequate records during the call.

TRAPPED OR IMPALED PATIENT

If you arrive at the scene to find a trapped or impaled patient who will take a significant time to extricate, or the impaled object cannot be easily cut, stabilize A.B.C.'s as much as possible and contact your Base Hospital. After explaining the situation, it may be appropriate for a physician from the hospital to come to the scene in case of the need for A.L.S. beyond your skill.

REFUSAL OF TREATMENT AND/OR TRANSPORT

Every patient has the right to refuse treatment and/or transport. However, for a patient to be able to refuse treatment and/or transport the following criteria must be present:
1) Legal Competence (age 18 or emancipated minor)
2) Mental Competence (alert and oriented x 4)
3) Medical Competence (they must be able to clearly understand the medical consequences/ health risks for refusing treatment and transport)

VVMC does not support, condone, or allow EMS initiated refusal of transport. All refusals must be initiated by the patient or their guardian.

All patient refusals that involve ALS complaints and care require a patch to the base station. Patch must be made prior to EMS leaving the scene. Medical control has the option to allow the refusal or to request the patient be restrained and brought to the ED for evaluation. This should only be done if it does not endanger the providers.

The patch for refusals should include the following:
1) Patient's chief complaint
2) 2 sets of vital signs (if able to obtain) ***the terminology "vital signs stable" is not acceptable, the patch must include the actual vital signs
3) Patient's physical exam
4) The patient's reason for refusal
5) Details on how the patient demonstrates legal, mental, and medical competence
6) The patient's plan for care or further evaluation

Documentation should include all of the above listed information required for the patch. It should also include any extra efforts done by providers (waiting on scene for parents/family to arrive, discussions with other persons on scene, obtaining phone numbers for call back, etc.)

BLS refusals should be documented identically to ALS refusals. These refusals do not require a patch, however providers are encouraged to patch if any unusual circumstances exist.

FIELD TRIAGE GUIDELINES

Due to the rural and isolated nature of much of this region, coupled with the long distances between communities, the emergency patient is usually taken to the nearest Emergency Receiving Facility.

Exceptions may occur when:

1. A rational and oriented patient specifically requests transport to another facility, and the E.M.S. personnel deem it feasible to do so. This requires a medical control input. Specific agency policy may affect the decision.
2. The nature of the patient's illness or injury requires services not available at the nearest facility. The decision to bypass the nearest facility should be substantiated during direct communication with the responsible On-line Physician at the Base Hospital and in compliance with VVEMS Medical Direction Policy on Transport Destination.
3. Multiple victims have been identified by prehospital personnel and possible overloading of the nearest hospital's resources may prompt directing transport of a victim(s) directly to another facility.

Ordinarily, priority will be given to the most critical patients. However, when the number of patients exceeds the E.M.S. resources immediately available, then priority must be given to more salvageable patients.

MULTIPLE CASUALTY INCIDENTS (M.C.I.)

If an agency has no formalized (written and implemented) M.C.I. plan the following will briefly outline steps to be taken in the event of an M.C.I.

Definition of an M.C.I.:

1. Five (5) or more critically (Immediate) injured patients and/or
2. An incident that exceeds or potentially exceeds the E.M.S. resources available.

These are based upon common triage treatment guidelines and the use of a nationally recognized Incident Management or Command System (I.M.S. /I.C.S.). All agencies are expected to use the I.M.S. to allow agencies to work with a common system to mitigate incidents. This outline is not intended to replace well established local plans; rather, it offers a guideline for those areas in which no organized plan exists.

On arrival at an M.C.I. - in order of priority:

1. Perform scene size up, assure scene safety
2. Request additional resources:
    a. from your agency;
    b. Consider:
        (1) Appropriate Law Enforcement Agencies
        (2) Aircraft assistance
        (3) Mutual aid
        (4) Specialized needs (i.e. HazMat, School buses, etc.).
3. Establish Initial Command
4. Notify the Base Hospital that you have an M.C.I.
    a. Number of patients
    b. Have Base Hospital notify regional hospital
5. When additional resources become available:
    a. Assign per I.C.S. (i.e. Triage, Transportation, Staging, Safety, etc.).
    b. START/Triage patients
        1. Immediate (to be transported first and treated immediately).
            a. **R**espiration-over 30
            b. Pulse-No Radial Pulse
            c. Mental Status-Unable To Follow Simple Commands
        2. Delayed (transportation and treatment may be deferred).
            a. Other patients unable to walk on their own
        3. Minor (to be transported or treated last)
            a. Patients that can walk on their own.
        4. Dead/Dying
            a. No Respirations after Head Tilt/OPA
    c. Provide for scene security:
        - Safety officer/sector* Law enforcement
    d. Incident Command or Medical Group/Branch notifies receiving hospital of the number of patients and their categories.
    Additional contact should be made to the receiving hospital if there is a significant change in the number of patients they will be receiving.
6. Designate treatment areas for Immediate, Minor, and Delayed:

a. Mark areas with flags or tape with color designation
b. Move patients to proper treatment area.
c. Leave Dead/Dying victims where they are unless hindering other patient care
d. Treat patients in designated treatment area.

7. Transportation officer organizes transportation taking into consideration patient priority.
    a. Transportation of patients to appropriate receiving facility(s)
    b. Ensures adequate medical personnel remain on scene to treat remaining patients.
8. Ambulances will provide brief courtesy notifications to the receiving facility to include:
    a. Triage priority of patients
    b. Description of major injuries
    c. Treatments provided
9. Consider Rescuer Assistance/Relief if incidents of long duration ("Rehab sector").
    a. Arrange for food and water.
    b. Rest area away from scene, if possible. (Consider house, store, etc.)
    c. Rotate personnel through "Rehab Sector".
10. At conclusion of incident:
    a. Restock units
    b. Consider post incident debriefing for all Rescuers and Police.
        (1) Within 12 hours post-incident.
        (2) Follow-up within 72 hours.
        (3) Offer individual counseling if needed/available.

Note: The above does not offer a detailed, in-depth study of M.C.I. response or the I.C.S. system. Further education in these areas should be pursued as space here will not allow total coverage of these areas. Practical drills and daily use of the I.C.S. on all multi-casualty incidents will increase proficiency in these areas.

PNEUMATIC ANTI-SHOCK GARMENT (P.A.S.G.)

The PASG has a limited role in modern EMS care. ADHS no longer requires PASG to be present on EMS vehicles and we only support its use in stabilizing pelvic fractures when other services are impractical or unavailable.

TREATMENT GUIDELINES

GENERAL ASSESSMENT AND TREATMENT APPROACH

Although there are many things that may be medically affecting your patient, there are a limited number of supporting treatments you have to offer. Do not let the gathering of information distract you from the management of life-threatening problems.

Remember, however that you may be able to gather information from bystanders at the scene, from the environment, and perhaps even from the patient that may not be available to the physician later on. Your partner can often be engaged in collecting this kind of information during the secondary examination.

HISTORY

1. Chief complaint (questioning to include, when appropriate):
    a. Onset
    b. Provocation
    c. Quality
    d. Radiation
    e. Severity
    f. Time
2. Associated complaints:
3. Relevant past medical history
4. Allergies
5. Medications and drugs:
6. Survey of surroundings for evidence of drug abuse, mental functioning, and family problems
7. Last meal, last menstrual period (if applicable)

INITIAL ASSESSMENT

Primary interventions should always be made as soon as a need for them is assessed.

AIRWAY:

Assess patency, stridor, foreign body (F.B.), ability to maintain airway.

TREATMENT

1. If compromised or absent airway, or patient unresponsive:
    a) Position the airway
    b) Insert OPA/NPA
    c) Suction PRN
    d) Remove dentures if an advanced airway is required
    e) Always consider C-spine injury
2. Consider endotracheal intubation or approved supraglottic device.
3. Medical direction recommends the use of a bougie for endotracheal intubation.
4. Post intubation or supraglottic device insertion; utilize a c-collar to prevent tube dislodgement.
3. Consider needle or surgical cricothyrotomy

BREATHING:

Assess: Rate, apparent tidal volume, effort, ability to speak, symmetrical movement, breath sounds, accessory muscle use, oximetry.

Realize that oxygenation and ventilation are separate but interdependent issues. Oxygenation may be assessed as adequate with a pulse oximeter, but the only way to assess ventilation as adequate is by ETCO2 monitoring and/or clinical means, i.e. rate, tidal volume, air movement.

TREATMENT

1. Position of comfort when appropriate
2. Oxygen as appropriate

3. Assist with Bag-Valve mask
4. CPAP may be used when indicated by protocols.

CIRCULATION:
Assess pulse presence, location, quality, rate, and capillary refill; assess blood loss from hemorrhage, skin color and temperature, and level of consciousness.

TREATMENT

1 Control active external bleeding with direct pressure, splint major fractures, uncontrolled arterial extremity bleeding, utilize C.A.T (combat application tourniquet)
2 IV NS; consider volume support (enroute)
3 Monitor Rhythm
4 Drug therapy as indicated

VITAL SIGNS
1. Obtain first quantitative set of vitals within five minutes if practical (pulse, blood pressure, respiratory rate, pulse oximetry, temperature)
2. Repeat according to patient's condition. Every 5 min for critical medical and trauma patients (if practical)

NEUROLOGICAL ASSESSMENT
Management of patients with head injury or neurological illness depends on careful assessment of neurological function. Changes in neurologic status are particularly important. The first observation of neurological status in the field provides the basis for monitoring sequential changes. It is, therefore, important that the first responder accurately observe and record neurological assessment, using parameters which will be followed throughout the patient's hospital course.

- The Glasgow Coma Scale is one method of monitoring patients with head injury. Errors and confusion are minimized when precise responses to specific stimuli are recorded. Always record specific responses in addition to the total score of the Glasgow Coma Scale. See Appendix E for Glasgow Coma Scale
- Another method to objectively describe LOC in the non-head injured patient is **AVPU**
  - **A:** Awake & Alert
  - **V:** Responsive to Verbal Stimulus
  - **P:** Responsive to Painful Stimulus
  - **U:** Unresponsive
- Eyes:
  1. Direction of gaze
  2. Size and reactivity of pupils
  3. Visual Field Loss
- Motor Function and Coordination
  1. Observe whether all four extremities move equally well
  2. Facial Droop
- Speech and Language
  1. Real words, but slurred enunciation
  2. Unable to use correct words and/or unable to comprehend simple question and commands

- Sensation (if patient awake):
    1. Observe for absent, abnormal or normal sensation at different levels if cord injury is suspected

SPECIAL NOTES:

A. Sensory and motor exam **must** be documented before and after moving patient with suspected spinal injury.
B. Note what stimulus is being used when recording responses.

GENERAL: FOCUSED HISTORY/PHYSICAL EXAM OR RAPID ASSESSMENT

DETAILED PHYSICAL EXAM DEFINITIONS:

Focused History/Physical Exam: The part of the assessment process in which the patient's major complaints or any problems that are immediately evident are further and more specifically evaluated.

Detailed Physical Exam: The part of the assessment process in which a detailed area-by area exam is performed on patients whose problems cannot be readily identified or when more specific information about problems identified in the focused history and physical exam is necessary.

The four components of physical examination are: inspection, auscultation, palpation, and occasionally, percussion.

CENTRAL VENOUS ACCESS

Administrative Medical Control has not authorized the initiation of central venous lines by Paramedics. Existing central venous access devices such as, porta-caths and PICCs may be accessed by Paramedics only as trained in the Advanced IV access training.

CPAP

CPAP is optional respiratory support treatment that has shown to rapidly improve vital signs, gas exchange, work of breathing and shortness of breath. CPAP may decrease the sense of dyspnea, and decrease the need for endotracheal intubation in patients who suffer from asthma, COPD, pulmonary edema, CHF, and pneumonia. This is approved for use by Paramedics in VVEMS agencies after proper training as delineated in the CPAP Use Guideline. See Appendix G

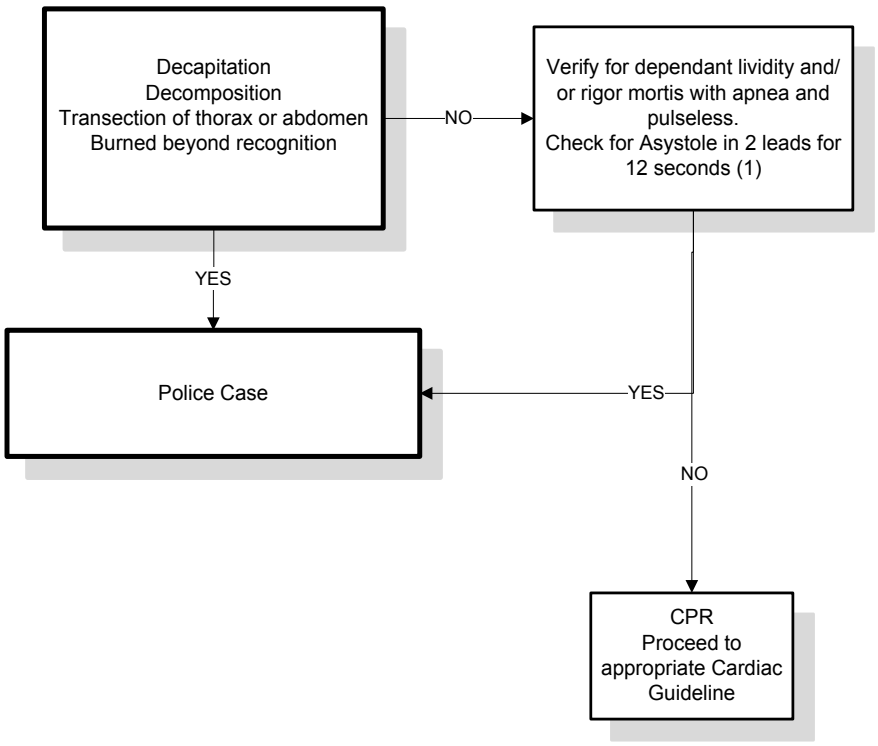
INTRAOSSEUS ACCESS/IO

VVEMS agencies may use this technique as part of their vascular access after completing the required training, in accordance with the IO Use Guideline. See Appendix G. Initiation of IO maybe performed by I-99 and Paramedics only.

RAPID SEQUENCE INTUBATION/RSI/MEDICATION ASSISTED INTUBATION

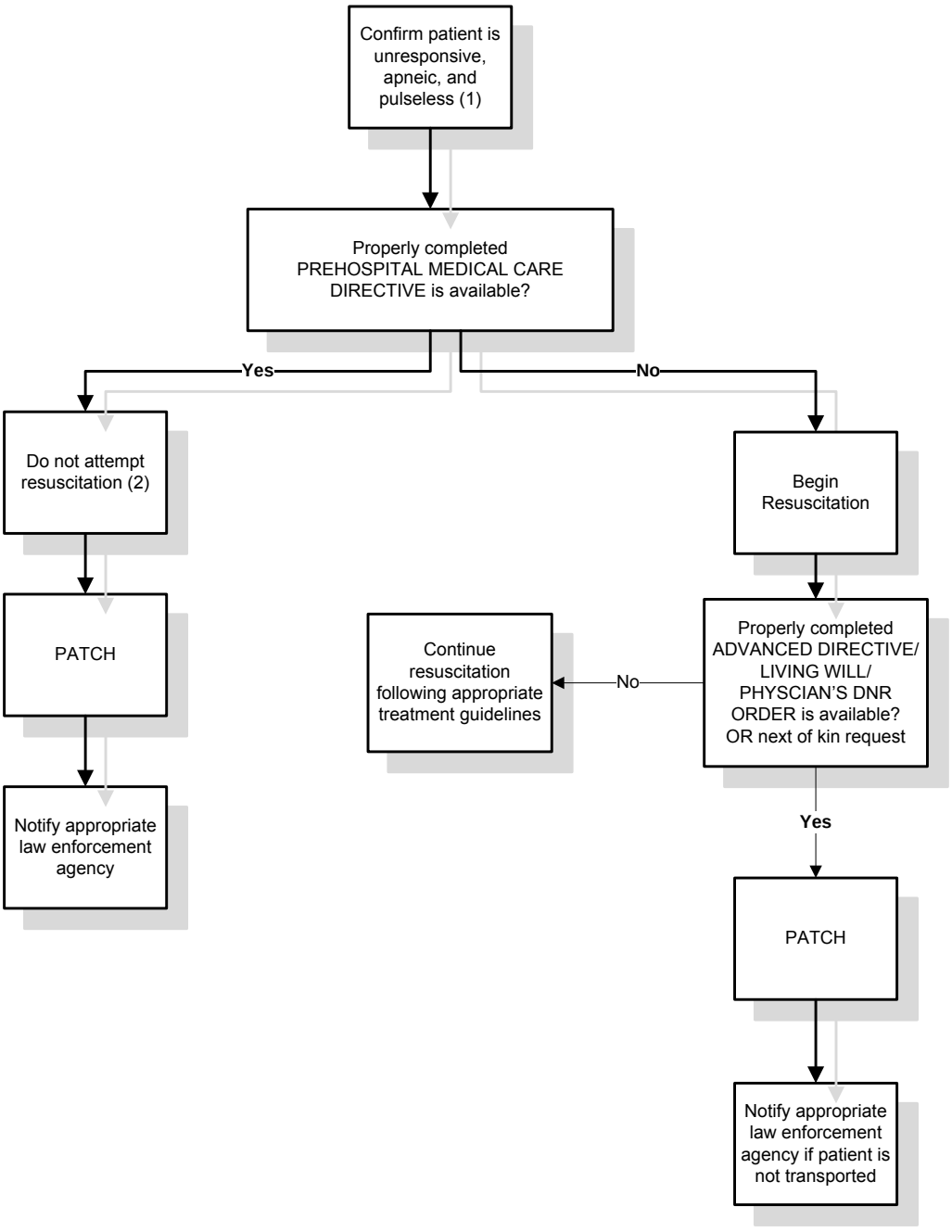
This is an approved skill for EMS use in the state of AZ. Agencies utilizing RSI must be approved by the Administrative Medical Director and must meet specific annual training requirements.

DEAD ON ARRIVAL



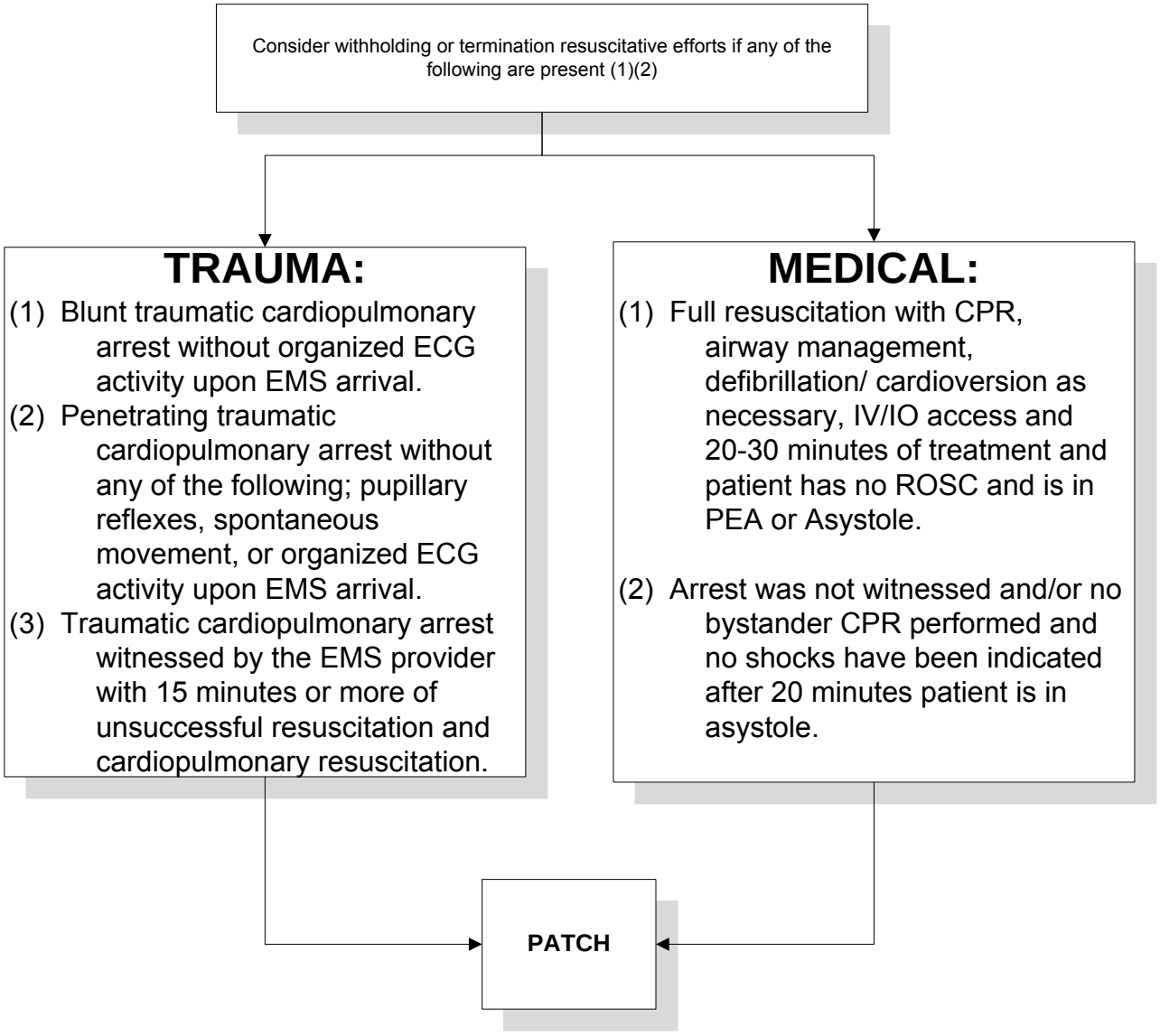
1) In situations where hypothermia may be a consideration, hypothermia guidelines should be followed. Seek Medical Control input.

DO NOT ATTEMPT RESUSCITATION ORDERS



(1) It is not the intent of advanced directives to deny treatment of other medical conditions not related to the terminal illness, pain medication, or other supportive care.
(2) If patients relatives are present and are indicating they want resuscitation attempted, in the presence of advance directives, begin resuscitation and patch for Medical Control input.
(3) If patient is in a healthcare facility or is being transported interfacility with a physician's DNR in place it is not necessary to begin CPR.

WITHHOLDING/TERMINATION OF RESUSCITATION

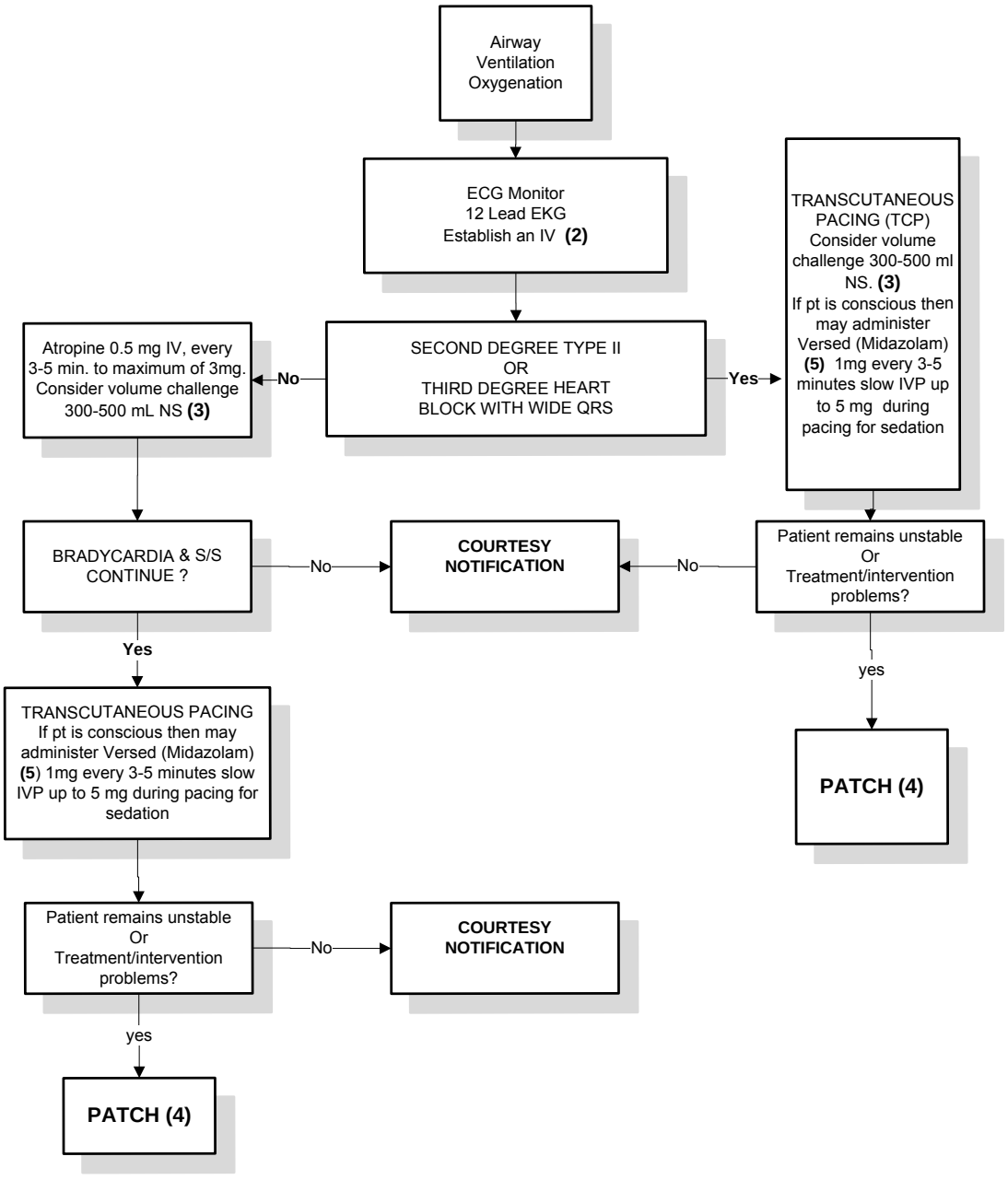


(1) For indications where no treatment is required the provider may withhold resuscitative efforts and patch for medical direction.
(2) Consideration should be given to potentially reversible conditions such as, overdose/poisoning, hypothermia, cold water drowning, etc.

ADULT BRADYCARDIA, UNSTABLE (1)

RATE < 60 MINUTE WITH ACCOMPANYING SIGNS/SYMPTOMS OF HEMODYNAMIC COMPROMISE, I.E., CHEST PAIN, HYPOTENSION, IF HISTORY/EVIDENCE OF TRAUMA, PROCEED TO TRAUMA TREATMENT GUIDELINE

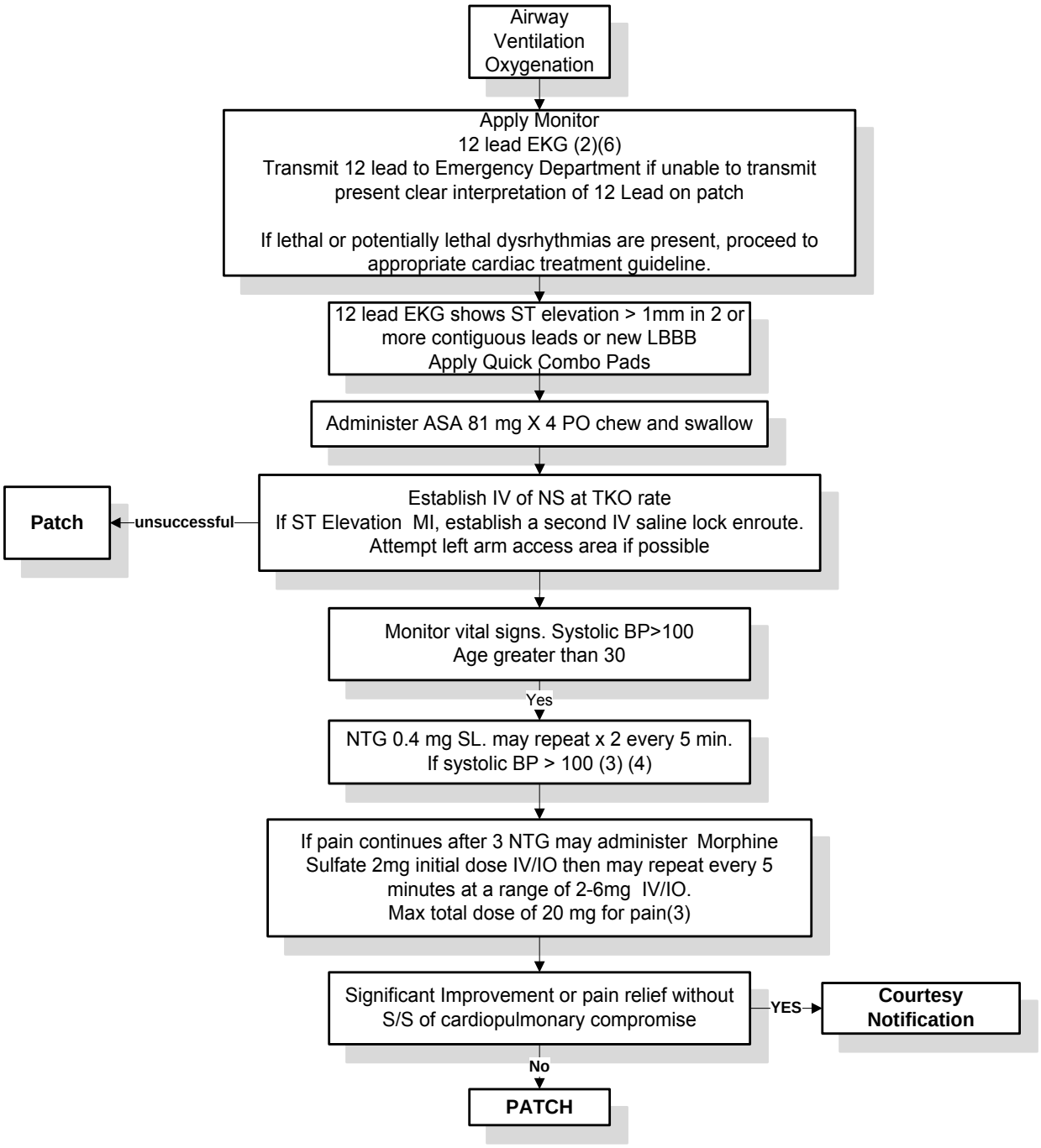
I-99 Skill/Medication limitation



(1) Signs/symptoms of an unstable patient may include chest pain, SOB, decreased LOC, hypotension, shock, pulmonary edema, congestive heart failure, and acute myocardial infarction.
(2) This should not delay definitive treatment.
(3) Repeat vital signs and lung auscultation before and after fluid administration
(4) Contact Medical Control to consider administration of Dopamine 5-20 mcg/kg/min **(5)** and/or Epinephrine 2-10 mcg/min
5) Not in scope of I-99

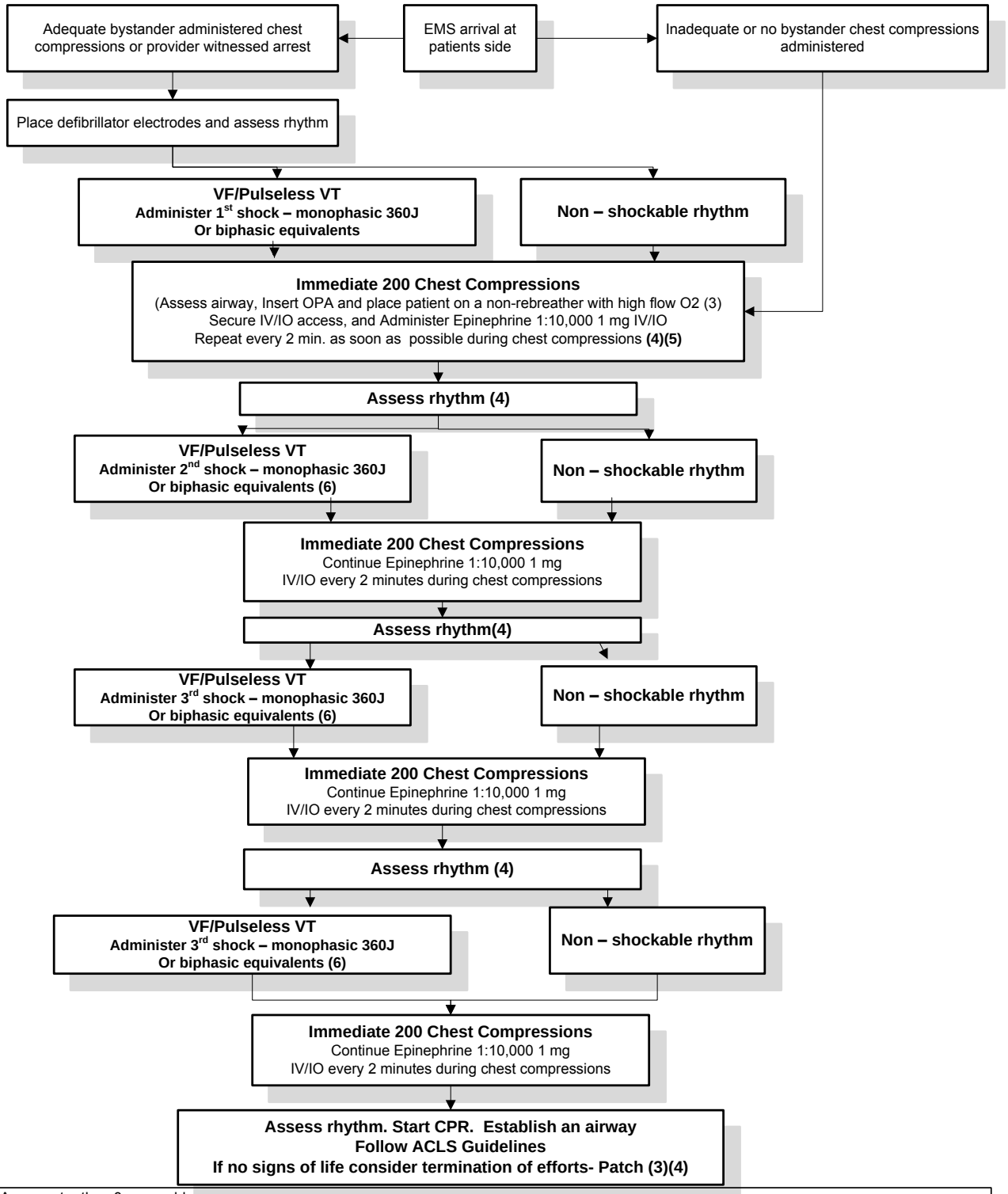
CHEST PAIN SUGGESTIVE OF CARDIAC ORIGIN

Chest Pain suggestive of possible myocardial ischemia **(1)**



1) Indications of chest pain suggestive of possible myocardial ischemia include: Description of crushing, squeezing, pressure, burning, tightness, diaphoresis, nausea/vomiting, apprehension, radiation, age>30, **associated cardiac risk factors.**
2) If twelve lead capability, should be done in pt's initial assessment.
3) Repeat vital signs and lung auscultation before and after administration of NTG or MS. Consider prior NTG use. If pain reoccurs and is not refractory to NTG, repeat NTG 0.4mg SL every 5 minutes as needed for pain relief, maintaining B/P > 100. MS may be repeated every 5 min maintaining B/P >100
4) Nitroglycerin is contraindicated in patients that have taken Viagra (sildenafil),Cialis, Levitra, or similar medications in the previous 72 hours
5) Contraindication to Aspirin if has an allergy to ASA. Can administer ASA without and IV in place.
6) Communication with hospital should be completed as soon as possible so that Cath Lab team can be notified for ST Elevation MI.

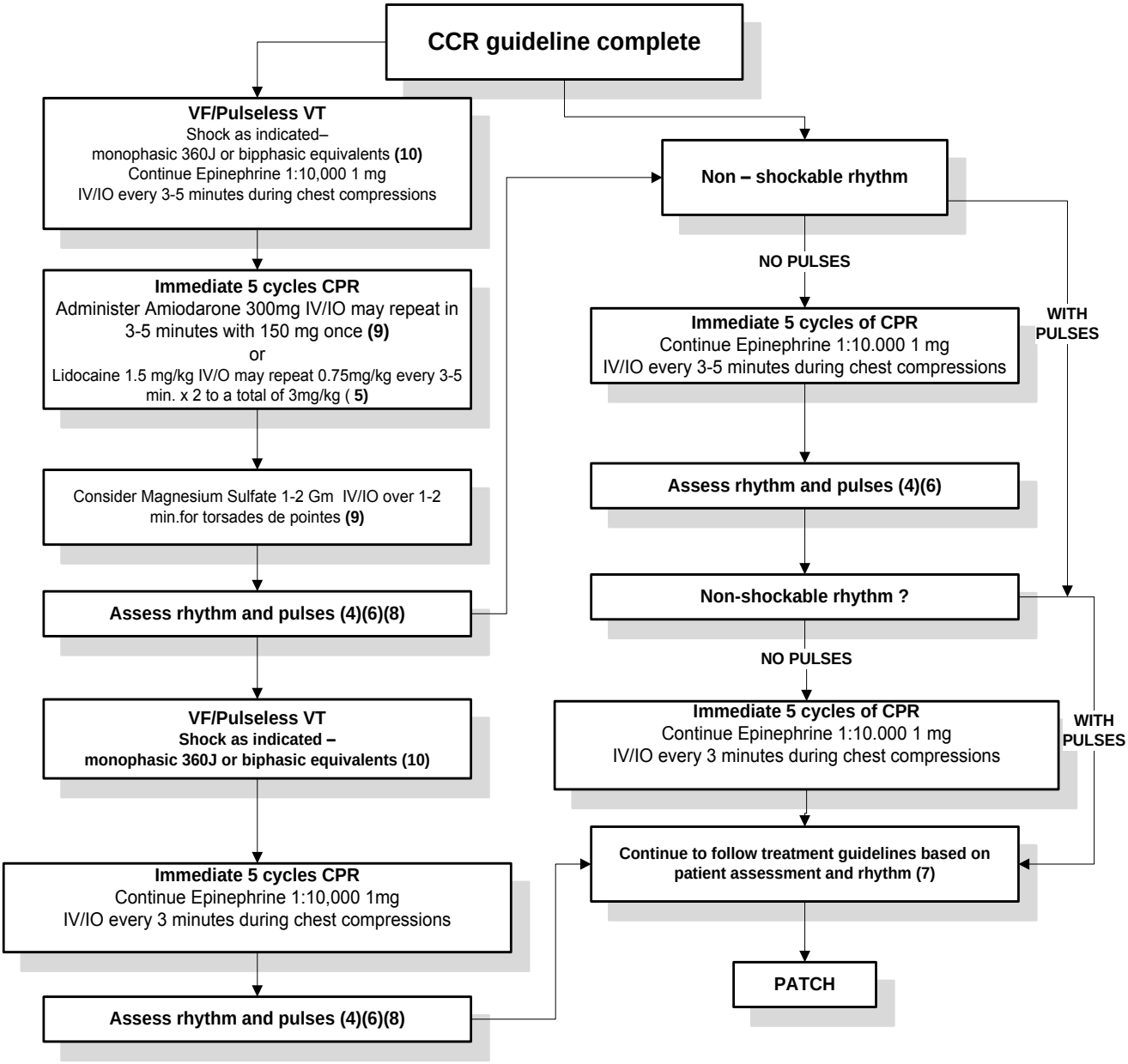
ADULT CARDIOPULMONARY ARREST – CCR ALTERNATIVE (1)(2)



1) Age greater than 8 years old.
2) Should not be used on patients; involved in traumatic event, overdose or where evidence of primary respiratory arrest is present.
3) Do not attempt intubation until after 4th set of 200 chest compressions. Ventilate with BVM if necessary.
4) Pulse checks should be done only if ECG indicates a potentially perfusing rhythm. Do not interrupt chest compressions. Be very brief.
(5) IO should be considered as first line access
(6) 10) Escalate Joule delivery (200,300,360) for V-Fib or Pulseless V-Tach refractory to initial shock of 200 J.

ADULT PULSELESS ARREST

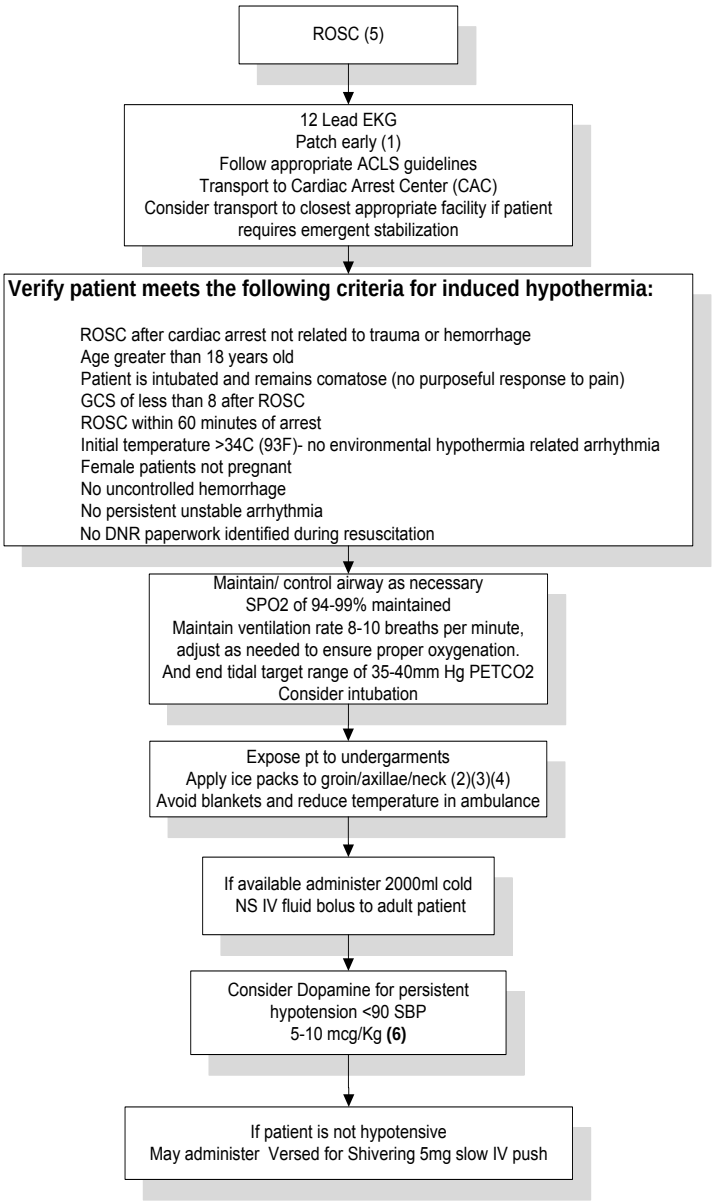
I-99 Skill/Medication limitation



1) Assess rhythm – quick look, only check pulses if there is an organized rhythm present.
2) Evaluate airway, intubate if necessary, limit interruption of CPR as much as possible.
3) Once patient is successfully intubated perform continuous asynchronous compression (rate 100/min) with ventilations (rate 8-10/min)
4) Pulse checks should be done only if EKG indicates a potentially perfusing rhythm, do not interrupt chest compressions, and be very brief.
5) Medications should be administered during CPR as soon as possible after rhythm checks.
6) Consider possible causes: Hypovolemia,(volume infusion), hypoxia (ventilation/re-evaluation),acidosis (ventilation/re-evaluation), tension pneumothorax (needle decompression), hypothermia, hypoglycemia, drug overdose, cardiac tamponade (volume infusion), massive AMI, hyperkalemia (consider NaHCO3, D50W,Calcium Chloride) massive pulmonary embolism.
7) If patient remains asystolic or other agonal rhythm after successful intubation, initial medications, no reversible causes are identified, and transport has not been initiated, consider termination of resuscitative efforts by order of a physician. Consider interval since arrest.
8) For successful conversions with HR>60 and no 2nd or 3rd degree heart blocks. Assess vital signs, administer Lidocaine 1-1.5 mg/kg and start infusion at 2-4 mg/ min. or Amiodarone 150 mg IV over 10 minutes then begin drip at 1mg/min for first 6 hours. (9) If patient received bolus doses prior to conversion administer maintenance infusion only.
9**) Not in scope of I-99**
10) Escalate Joule delivery (200,300,360) for V-Fib or Pulseless V-Tach refractory to initial shock of 200 J.

CARDIAC ARREST POST RESUSCITATION
INDUCED HYPOTHERMIA

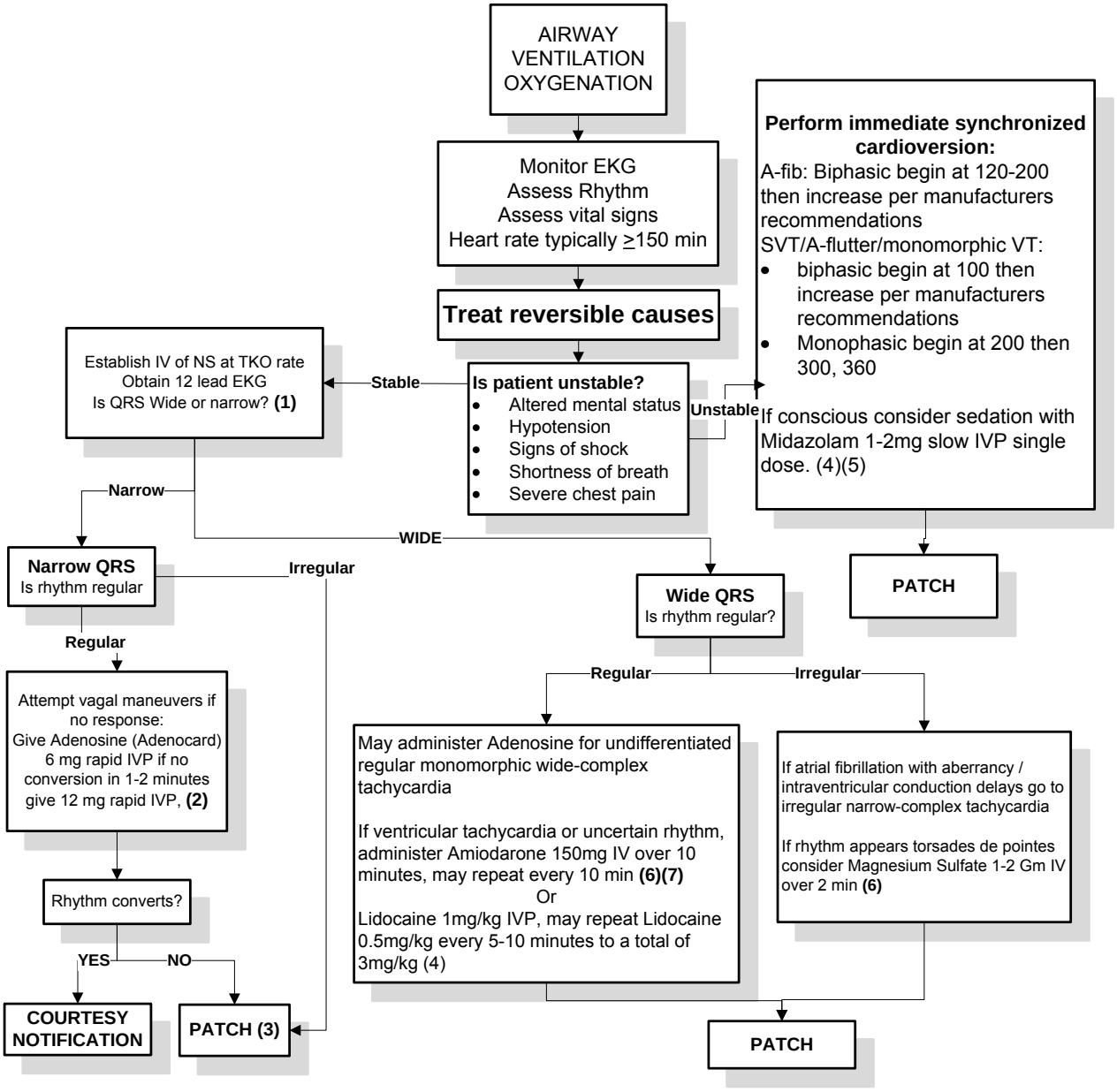
I-99 Skill/Medication limitation



1) Patch early to advise of induction of hypothermia to allow ED to have equipment ready.
2)Patients develop metabolic alkalosis with cooling. Do not hyperventilate.
3) When exposing pts for cooling purposes undergarments may remain in place. Be mindful of your environment and preserve patients modesty.
4) Do not delay transport for purposes of cooling.
5) **AT ANY TIME- Loss of Spontaneous Circulation- discontinue cooling and go to appropriate protocol**
6) Not in I-99 Scope of practice

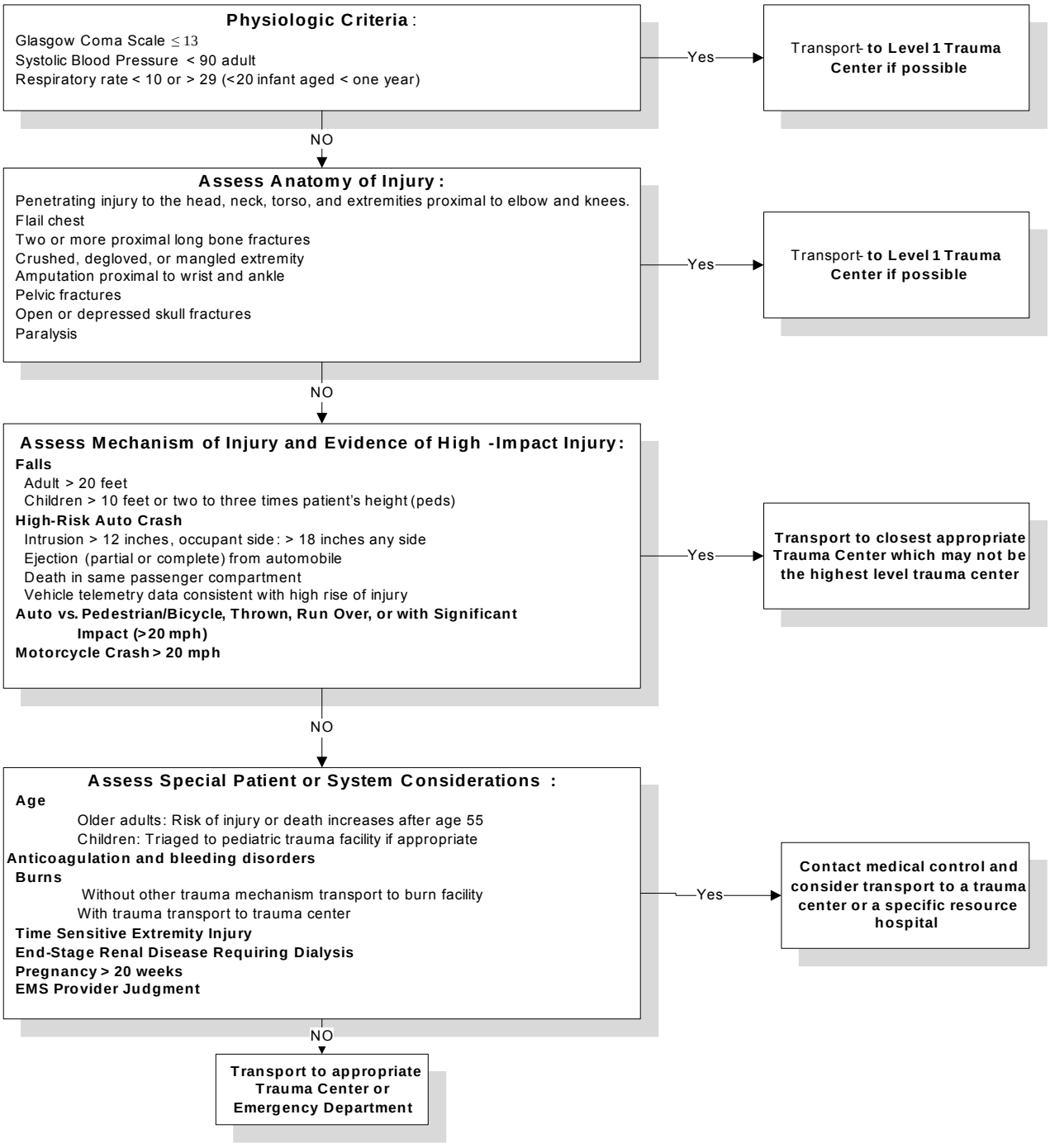
ADULT TACHYCARDIA WITH PULSES

I-99 Skill/Medication limitation

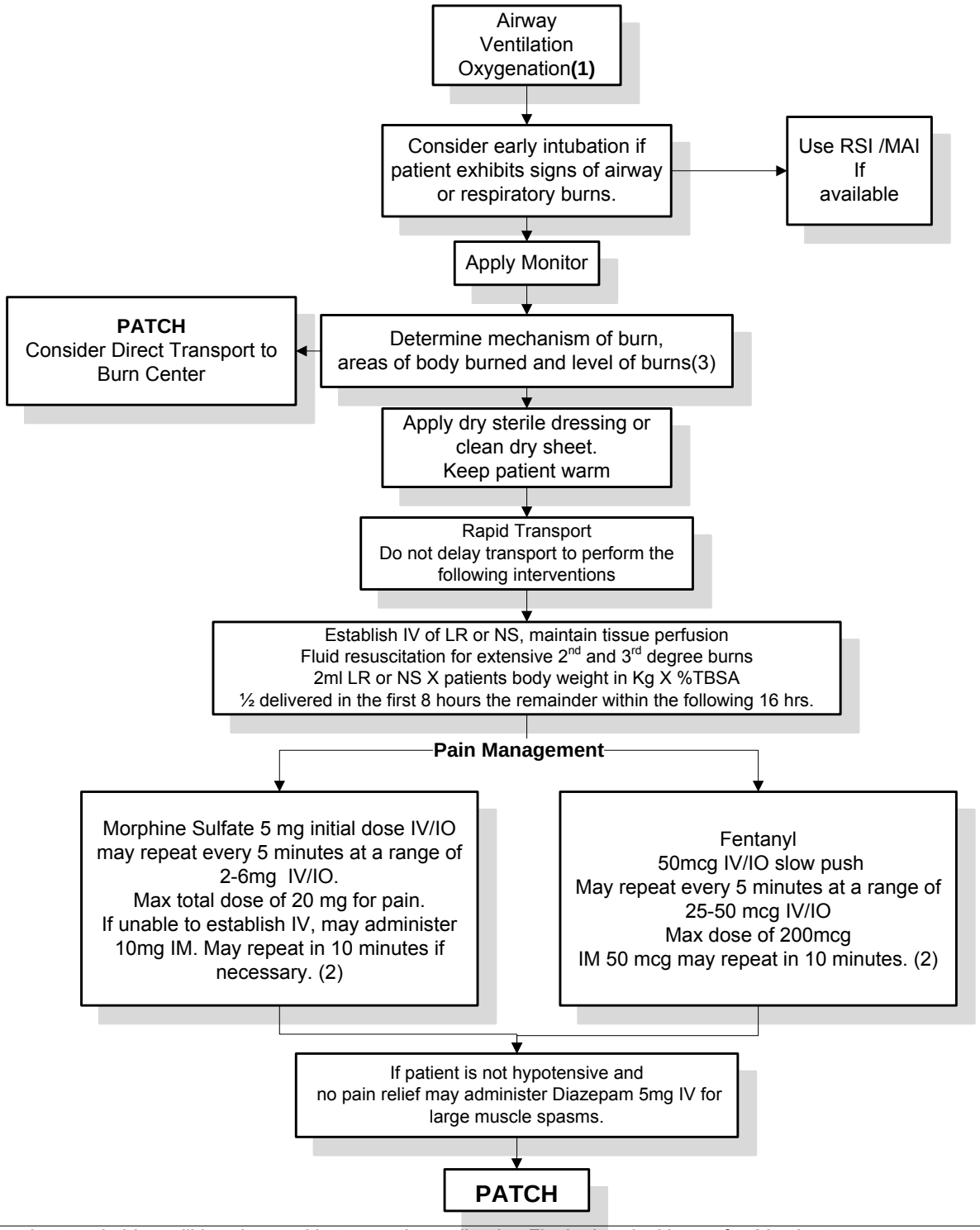


1) If at any time patient becomes unstable, proceed to "Unstable" side
2) Carotid sinus massage should not be performed without Medical Control Contact ; other methods of vagal stimulation should be attempted. Carotid sinus massage is contraindicated if patient >50 years of age or has history of hypertension. If ordered by Medical Control, verify absence of carotid bruits.
3) Contact Medical Control to administer Diltiazem (Cardizem) 0.25 mg//kg, if no response may repeat in 15 minutes at 0.35mg/kg. **(6)** Amiodarone 150 mg administered over 10 minutes, if no response may repeat every 10 minutes, maintence infusion after conversion is 1 mg/min. **(6)** Consider cardioversion
4) For successful conversions of ventricular arrhythmias with HR > 60 and no 2nd or 3rd degree heart blocks: Assess vital signs,administer Amiodarone 150 mg IV over 10 minutes than begin drip at 1 mg/min. for first 6 hours or Lidocaine (Xylocaine) 1mg/kg and start infusion at 2-4 mg/min, reduce maintenance infusion of Lidocaine by half in patients with renal or hepatic disease or > 70 years of age. If patient received bolus doses prior to conversion administer maintenance infusion only. **(6)**
5) If delays in synchronization occur or rhythm is polymorphic VT go immediately to unsynchronized defibrillation at 120-200 biphasic with manufactures recommendations or monophasic 360J. For polymorphic VT the provider should be prepared to move immediately to the Pulseless Arrest algorithm if pulseless arrest develops.
6) Not in I-99 Scope of Practice
7) Contact medical control for direction for administering Amiodarone patients with systolic blood pressure less than 90 mm Hg

TRAUMA TRIAGE DESIGNATION

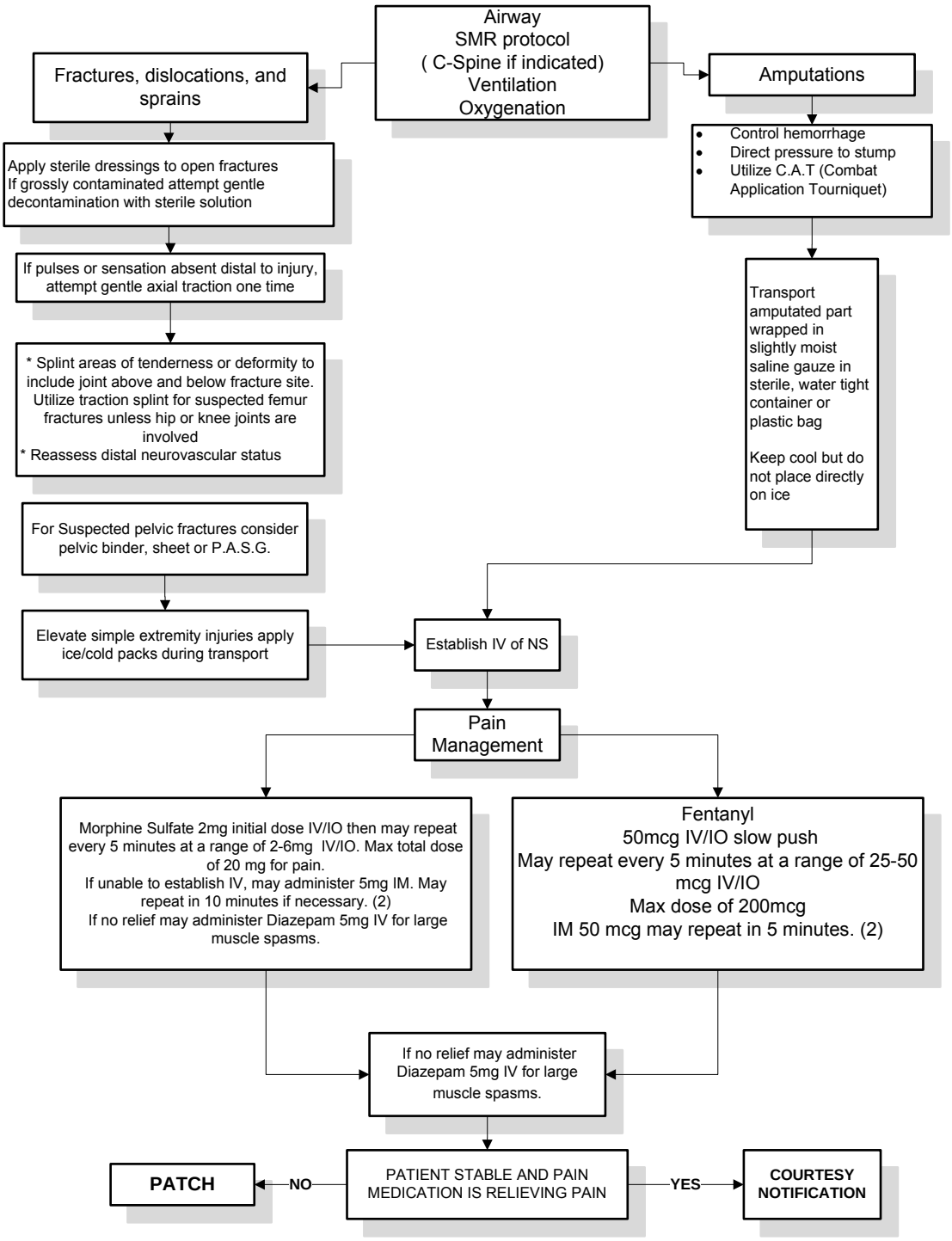


TRAUMA - BURNS



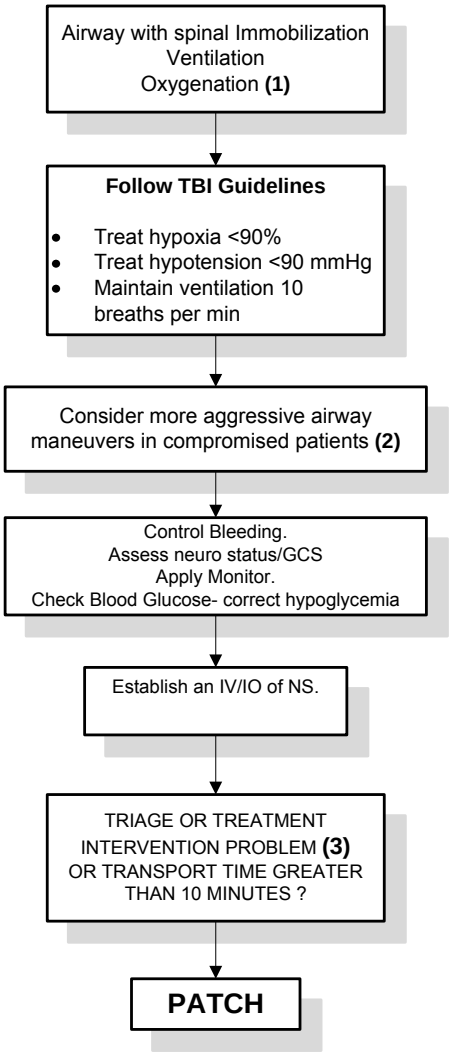
1) If patient or clothing still burning cool hot areas immediately. Flush chemical burns for 20 minutes.
2) Reasses vitals and pain before and after each administration of Morphine and Fentanyl.
3) Adult patients with high voltage electrical injuries fluid resuscitation is 4ml LR or NS X patients weight in KG X %TBSA

MUSCULOSKELETAL INJURY



1) Patch for medical direction input regarding air transport for patients with isolated re-plantable extremities
2) Reassess vitals and pain before and after each administration of Morphine and Fentanyl

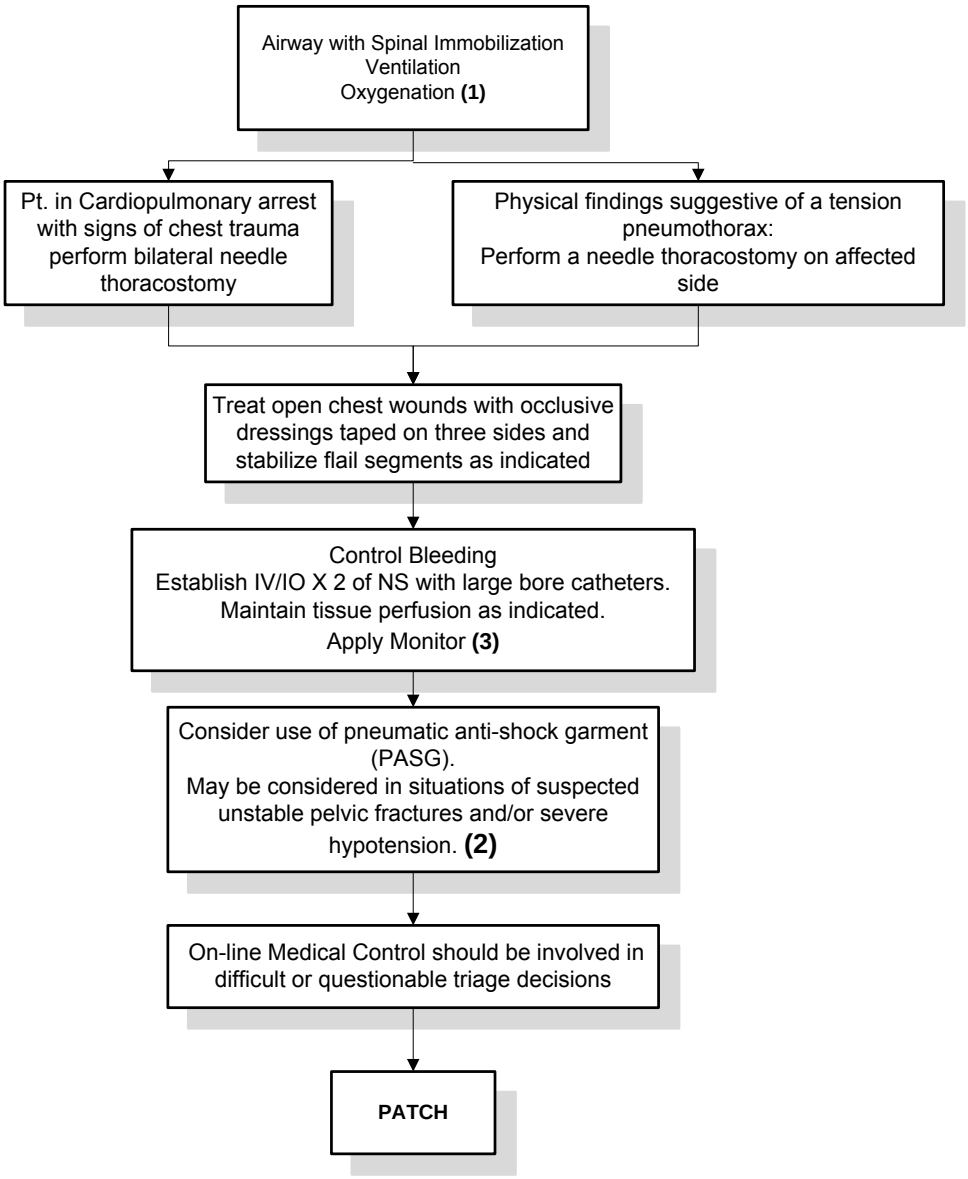
TRAUMA – HEAD INJURY WITH ALOC (1)



1) GCS <14, consider Air Transport to Neurological Center. Discuss with patch MD
2) Minimize intubation attempts to reduce increased ICP
3) On-line Medical Control should be involved in difficult or questionable triage decisions.

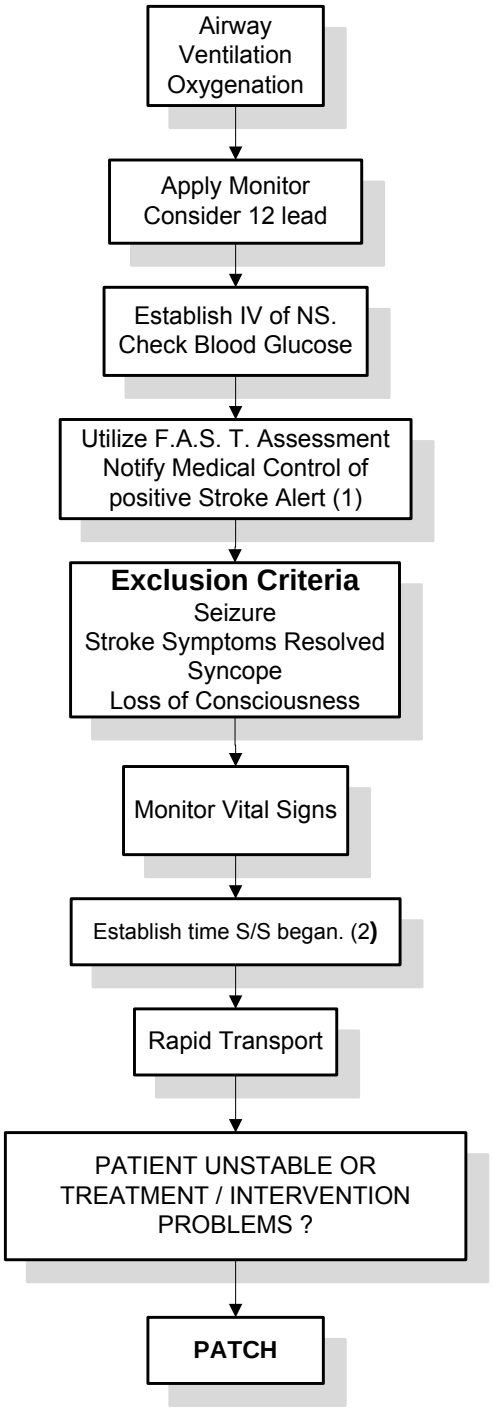
TRAUMA – MULTI – SYSTEM

Applies to patients presenting with S/S of Critical (Immediate) injury or patients in which the mechanism of injury is suspect for occult critical Injury.



1)Follow EPIC Guideline for patients with suspected head injuries.
2) PASG/MAST is contraindicated in penetrating chest trauma and is relatively contraindicated in isolated blunt chest trauma.
3) Treat to control pain per protocol.

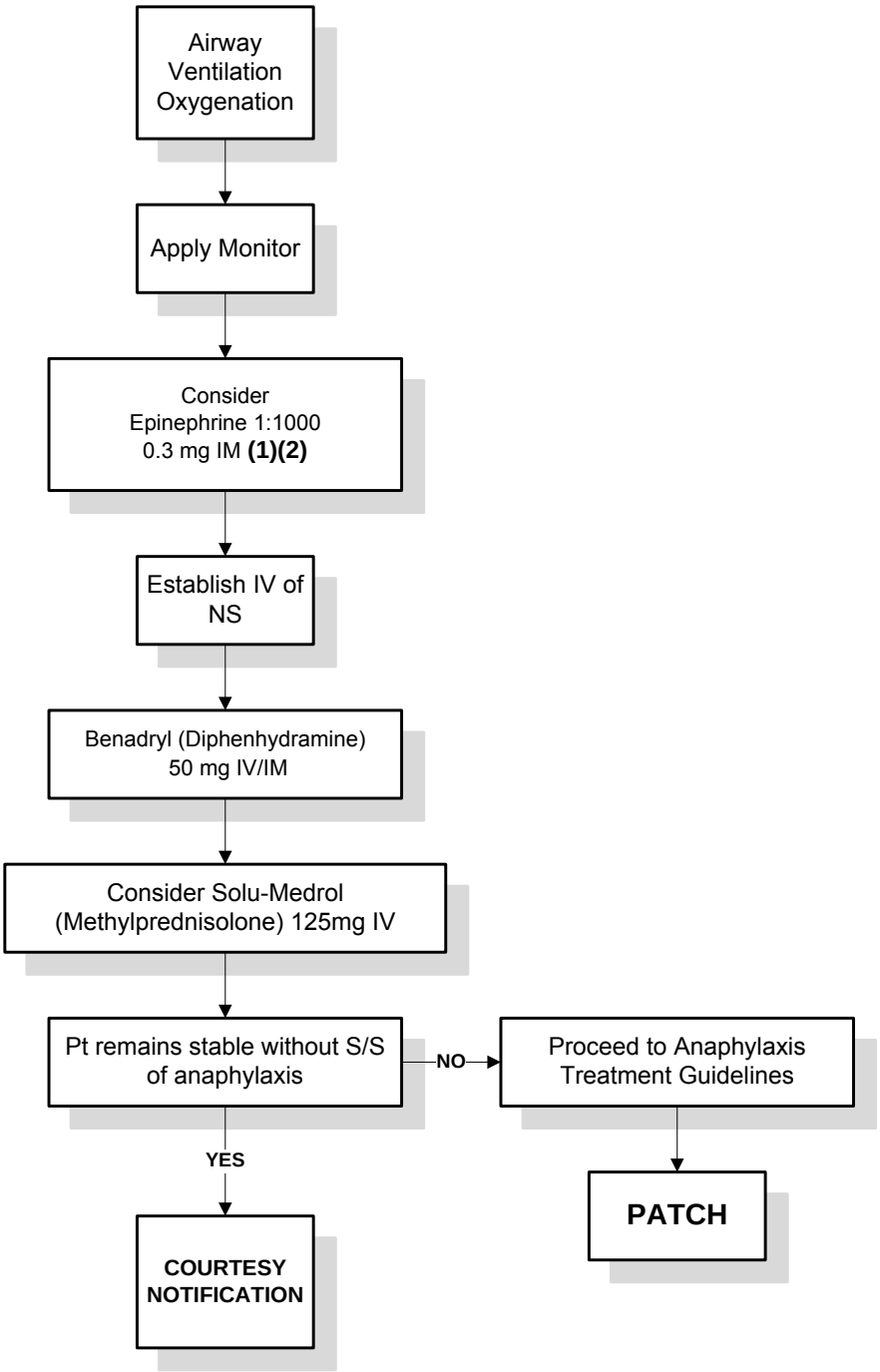
CEREBRAL VASCULAR ACCIDENT – STROKE



1) Evaluation of acute, non comatose, non traumatic neurological complaint. Defecits identified to Face, Arms, Speech and Time are all indicators of a positive F.A.S.T. score
2) Establishing time signs and symptoms began is CRITICAL. If patient awoke from sleep with S/S it is also important to determine how long patient was asleep. Patients with ischemic strokes < 3 hours old may be candidates for TPA therapy with some candidates eligible for up to 4.5 hours.

ALLERGIC REACTION

Applies to patient presenting with systemic allergic reaction e.g. diffuse urticaria, angioedema (edema of deep dermis layers), abdominal cramping, nausea or vomiting without anaphylaxis

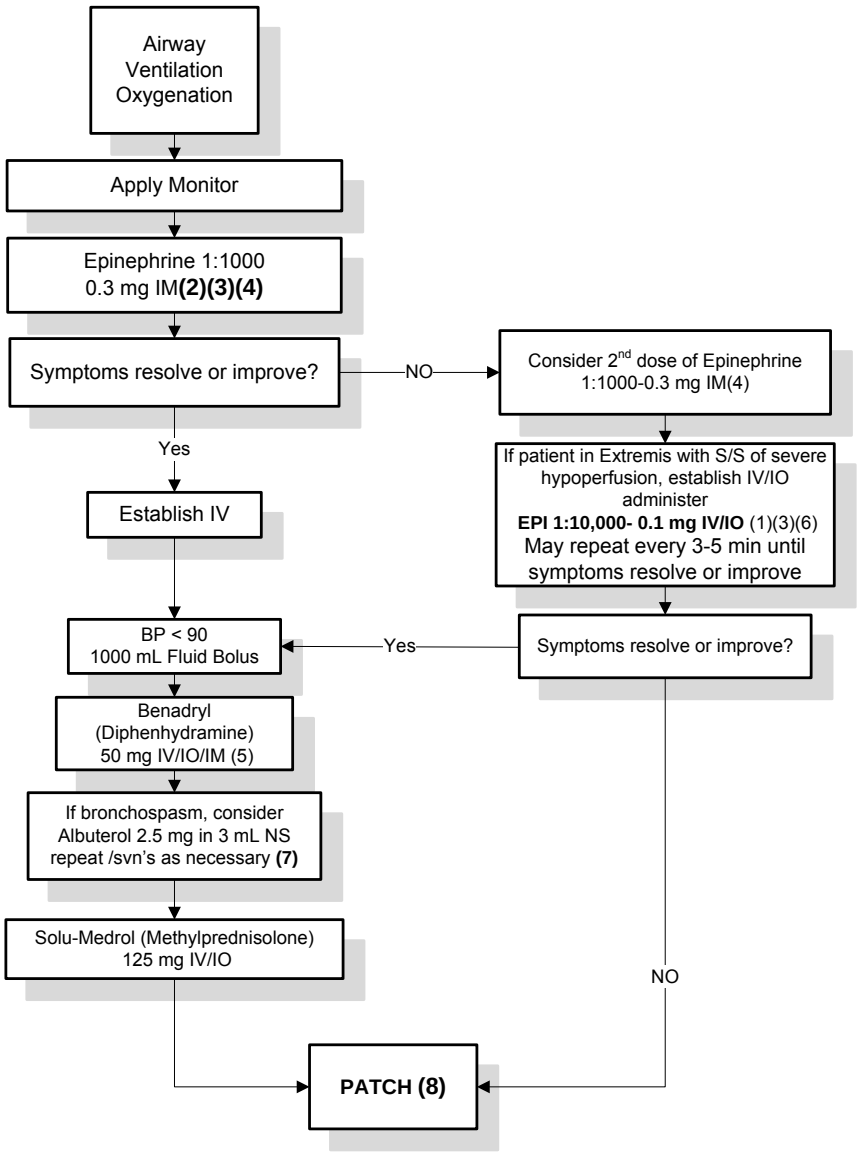


1) The use of Epinephrine in patients 50 years or greater with known coronary artery disease requires Medical Control input.
2) Consider acuity of onset of symptoms and history of prior anaphylactic reaction.

ANAPHYLAXIS

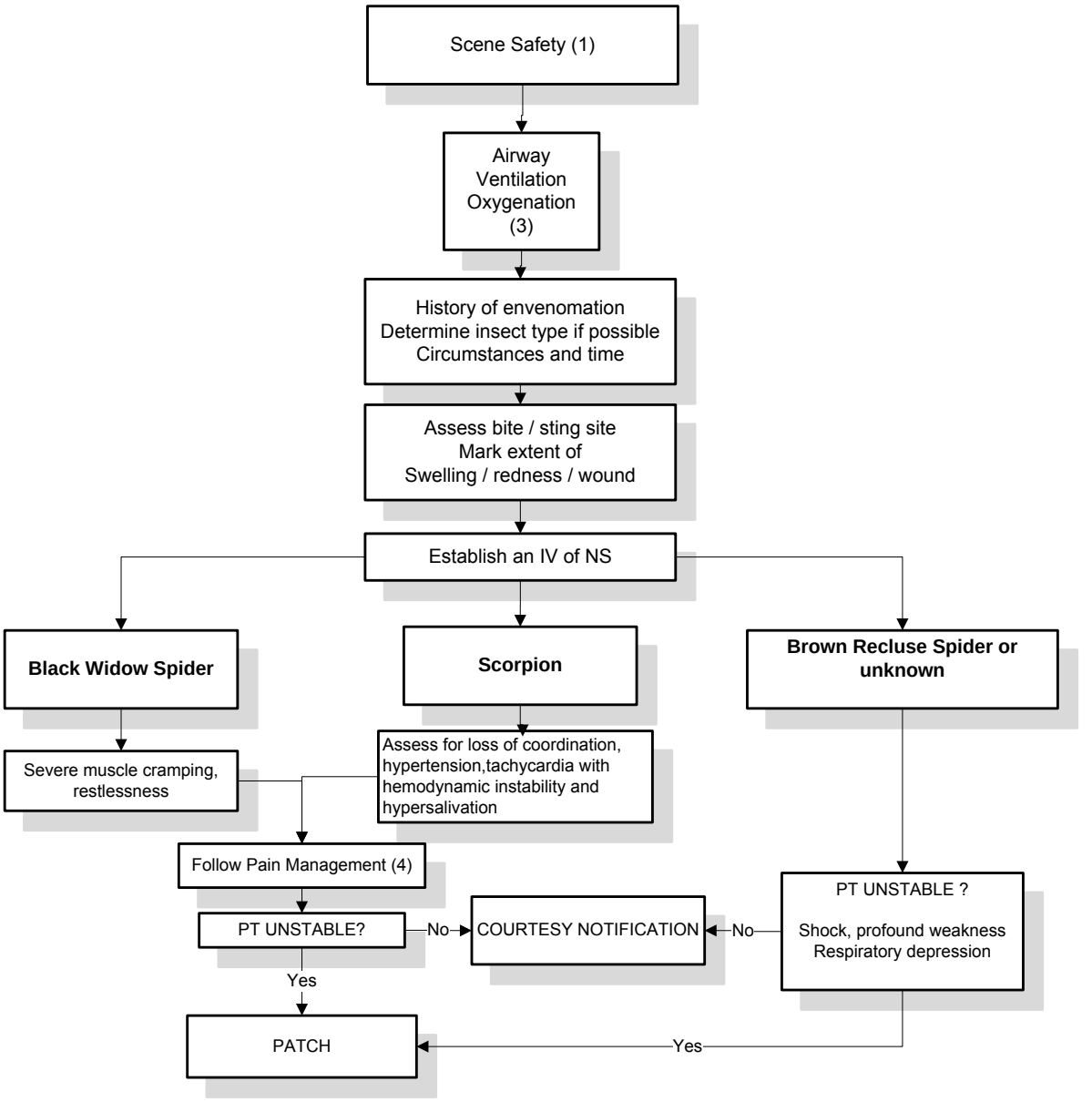
Applies to patient presenting with allergic reaction and with signs and symptoms of airway, respiratory, or circulatory compromise (laryngeal edema, bronchospasm, or hypotension.)

I-99 Skill/Medication limitation



1) If signs and symptoms of severe hypoperfusion and an IV can be rapidly established, consider going directly to IV Epinephrine 0.1 mg 1:10,000 repeat every 3 to 5 min until symptoms improve.
2) Establishment of an IV should not delay the administration of IM Epinephrine to a patient in extremis.
3) The use of Epinephrine in patients age > 50 years or with known coronary artery disease requires Medical Control input.
4) If prolonged transport consider repeat use of Epinephrine every 15 minutes. Medical Control input should be obtained, if possible.
5) At any time an IV cannot be established, give Benadryl (Diphenhydramine) 50 mg IM as soon as possible after Epinephrine IM.
6) Consider IO if no IV access and patient is in extremis.
7) Consider the use of SVN therapy via in line BVM system in patients who are tiring or are appearing to have decreased tidal volumes.
8) If patient continues to be hypotensive contact Medical Control to administer Epinephrine 1:1,000 2-10 mcg/min IV/IO Infusion, titrate to effect or (Dopamine drip 5-20 mcg/kg/min.**(9))**
9) Not in I-99 Scope of practice

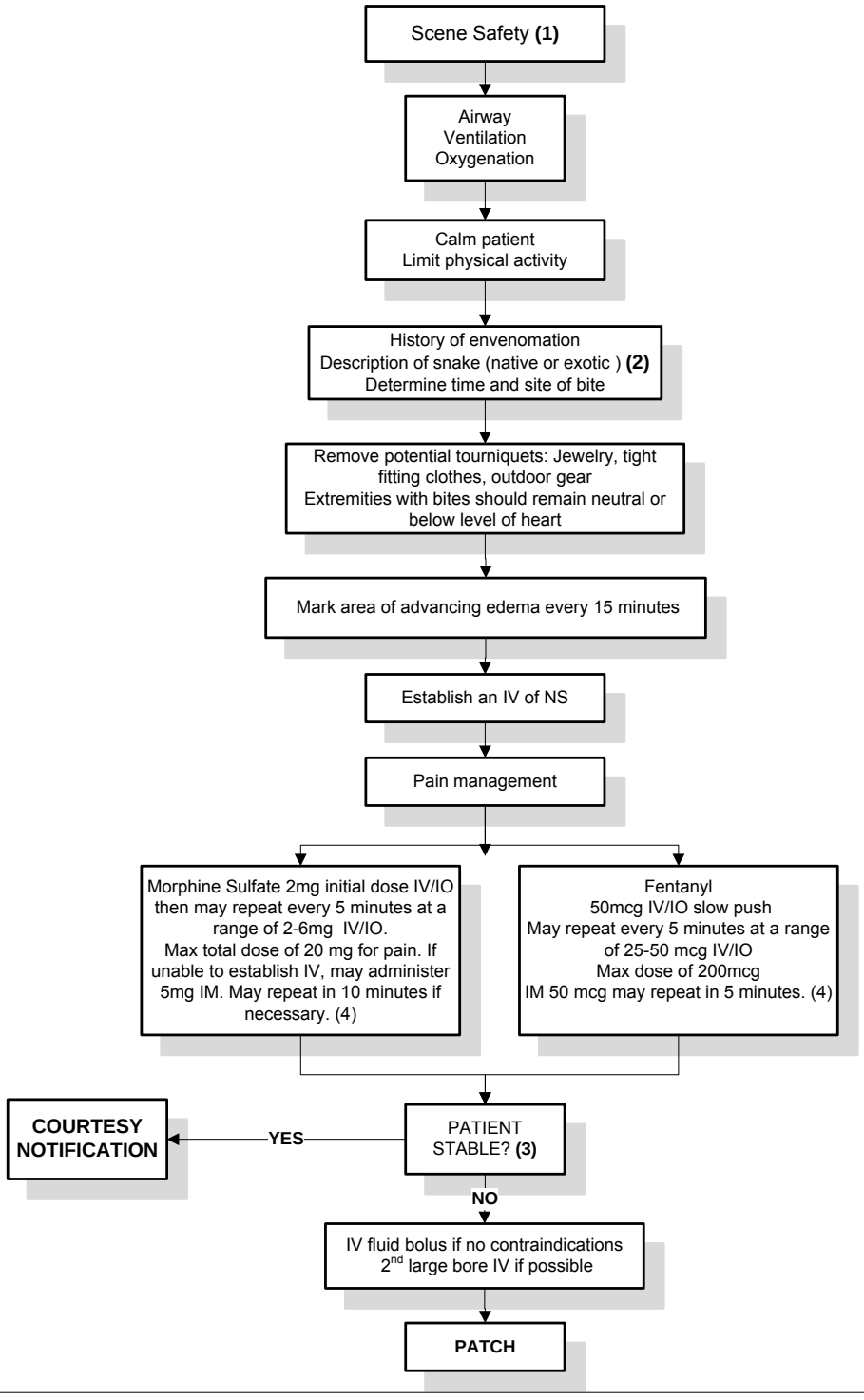
ENVENOMATION – ARACHNIDS



(1) Attempts to kill or capture insect or bring to ED are not recommended.
(2) Contact Medical Control to administer Valium (Diazepam) for severe pain / muscle spasm.
(3) Careful observation of respiratory status.
(4) Pain management for scorpion and black widow only. Reassess vitals and pain before and after each administration of Morphine and Fentanyl.

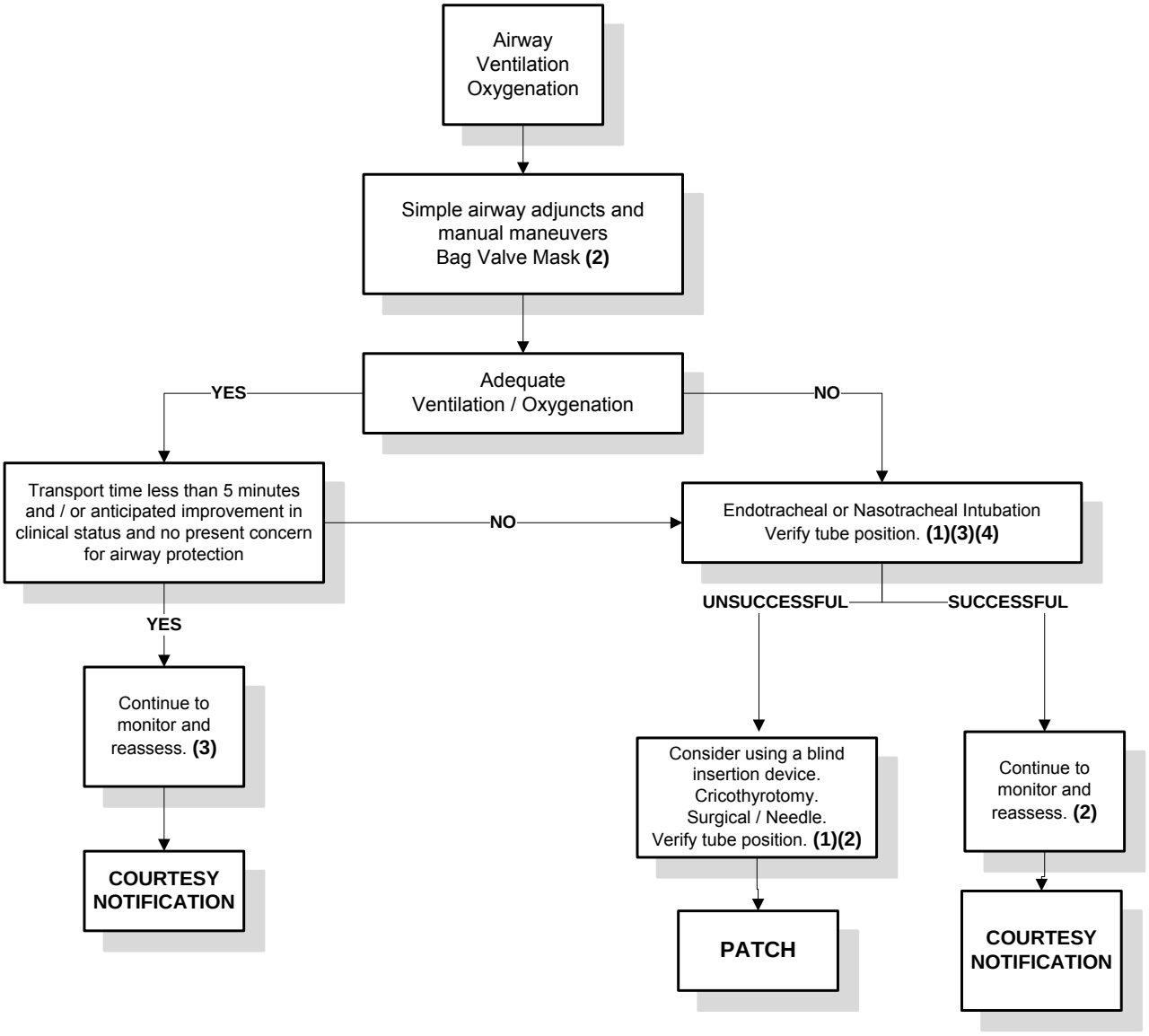
ENVENOMATION – SNAKE BITES

I-99 Skill/Medication limitation



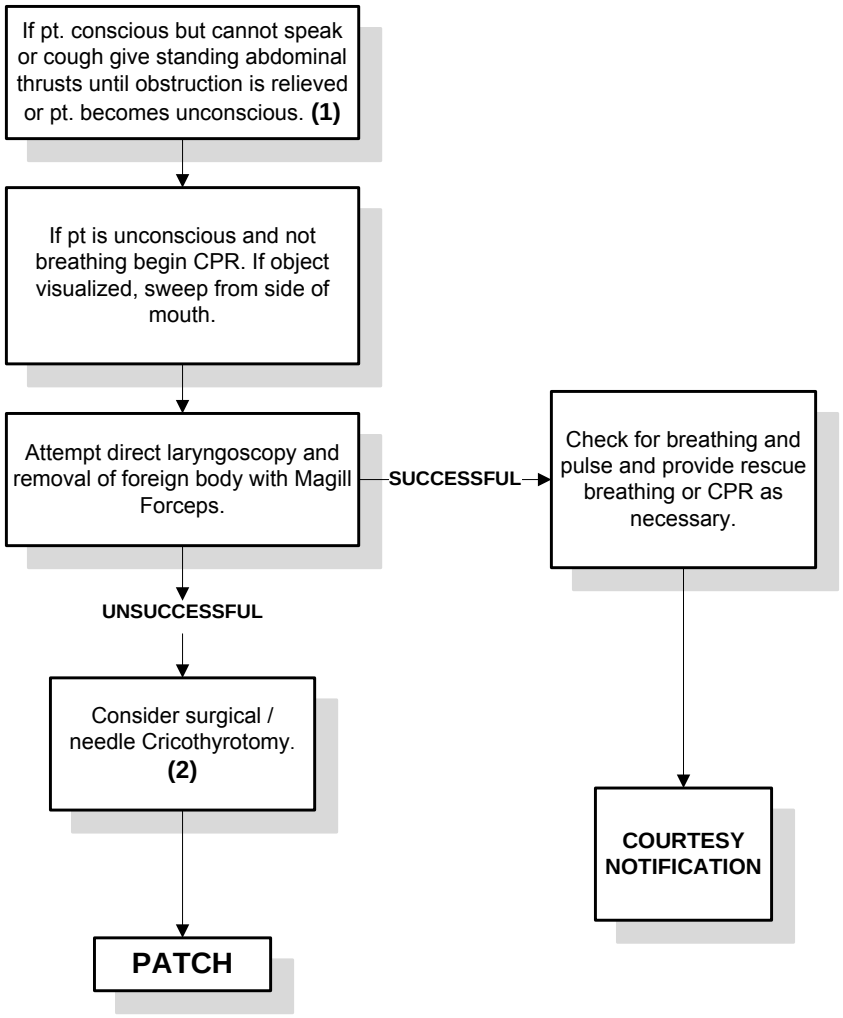
1) Attempts to kill or capture the snake or bring dead animal to ED are NOT recommended.
2) Many exotic snakes are neurotoxic so respiratory status must be monitored carefully
3) If patient is hypotensive and hemodynamically unstable contact Medical Control to administer Epinephrine 1:1000 2-10 mcg/min IV/IO infusion, titrate to effect or Dopamine drip 5-20 mcg/kg/min.(5)
4) Reassess vitals and pain before and after each administration of Morphine and Fentanyl.
5**) Not is scope of I-99**

AIRWAY COMPROMISE



1) Medical Control contact is not mandatory, however, the medic is encouraged to discuss with Medical Control if he/she is anticipating a Cricothyrotomy and the clinical situation is such that there is time for Medical Control contact.
2) Consider NG/OG tube for gastric decompression in situations of prolonged ventilation.
3) Consider blind airway insertion device if difficult airway and Endotracheal and Nasotracheal intubation unsuccessful after two attempts.
4) Medical control recommends the use of the bougie for all intubation attempts. After successful intubation utilize a c-collar to prevent dislodgement of the tube.

AIRWAY OBSTRUCTED

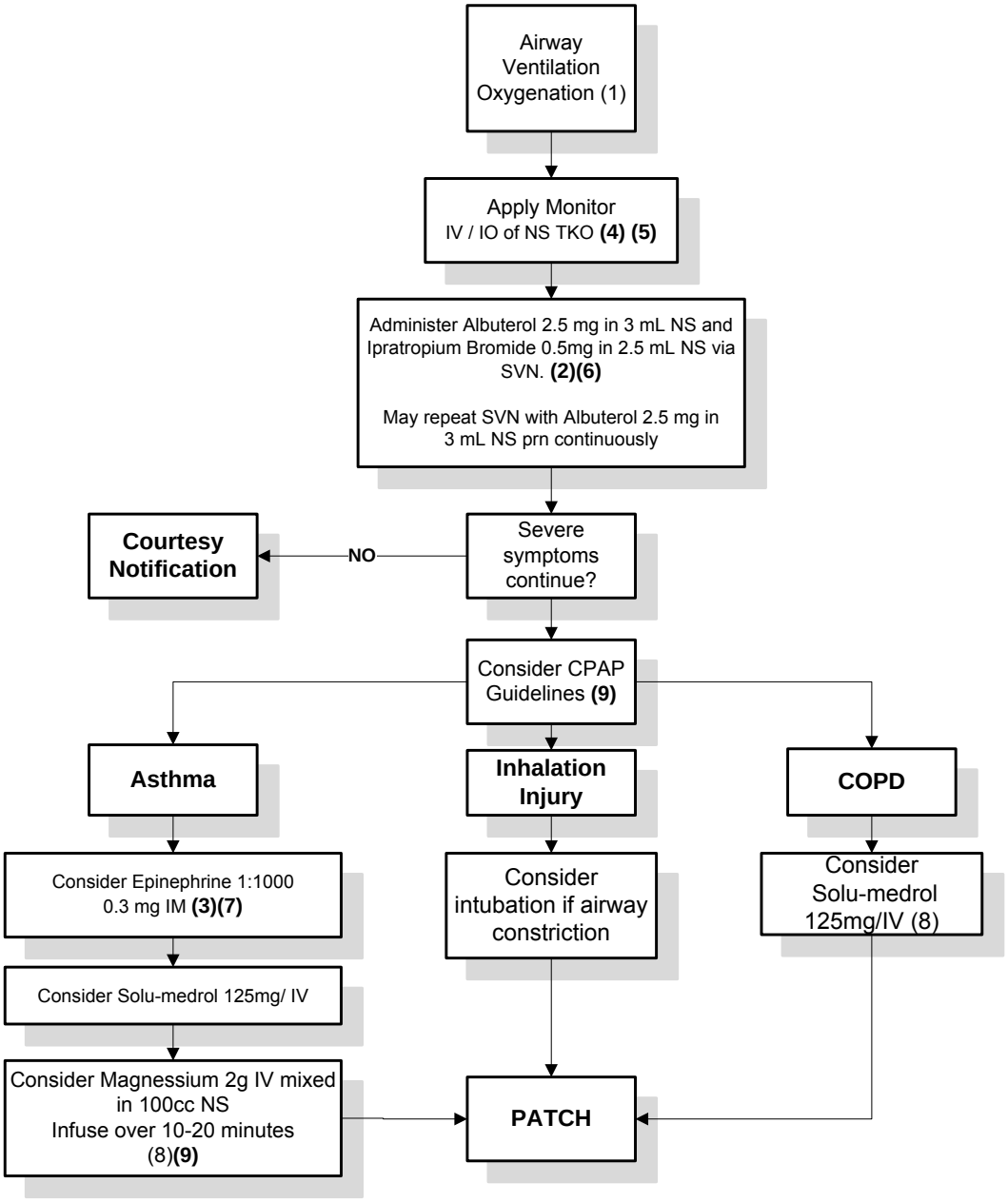


1) Chest thrusts if patient is obese or pregnant.
2) Verify proper tube placement by bulb tube check / air aspiration or ETCO2 detector / monitor, chest wall rise, good breath sounds, absence of gastric sounds, and clinical improvement in patient.

RESPIRATORY INSUFFICIENCY – BRONCHOSPASM

Applies to patients with S/S of acute respiratory distress, secondary to asthma, COPD, and inhalation injury

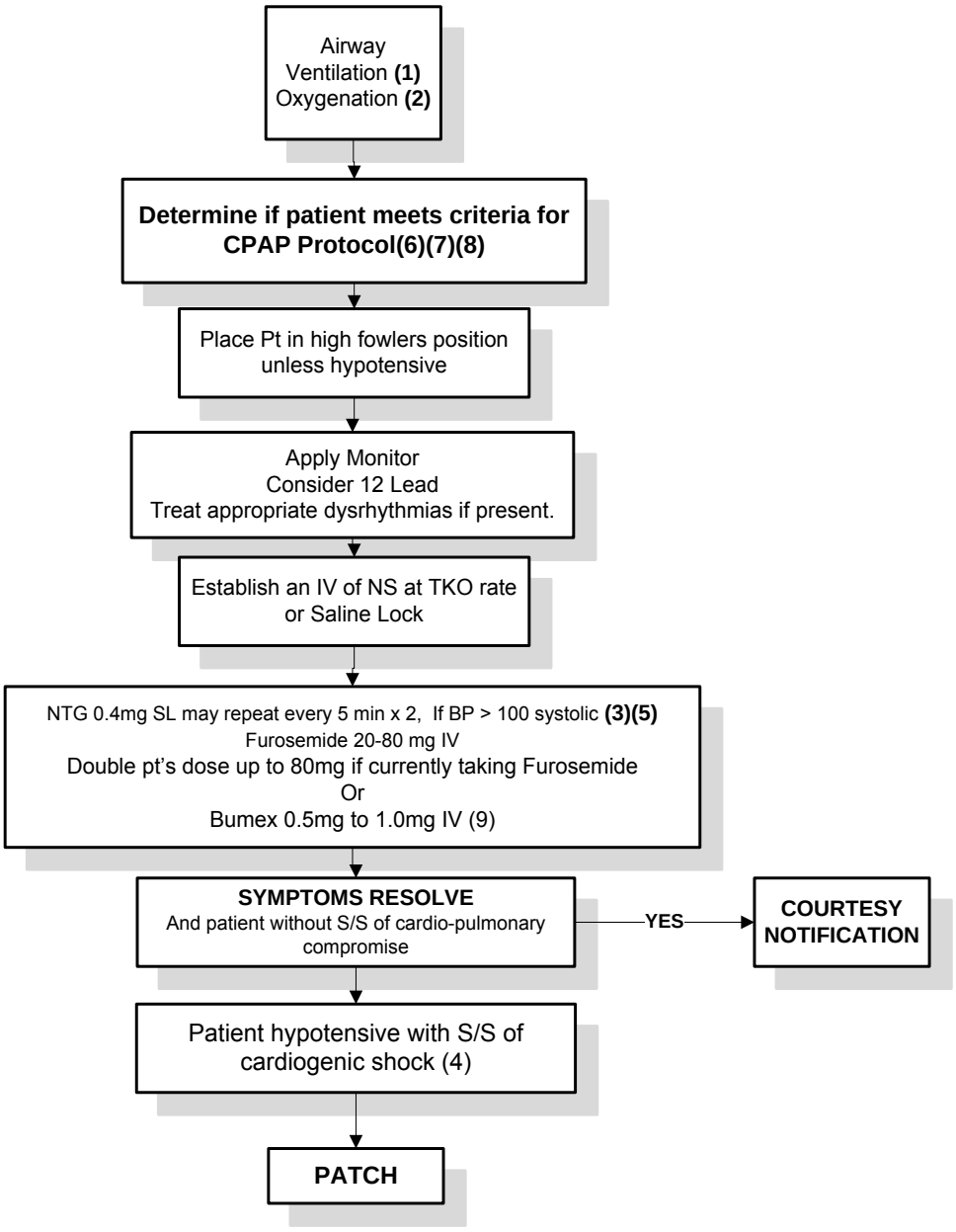
I-99 Skill/Medication limitation



1) Administer O2 at high flow rates to all patients in severe respiratory distress. This is especially true if pulse oximetry is not available.
2) Consider the use of SVN therapy via in line BVM system in patients who are tiring or are appearing to have decreased tidal volumes.
3) The use of epinephrine in patients 50 years or greater or with known coronary artery disease requires **Medical Control** input.
4) Do not delay definitive therapy to establish IV.
5) Obtain an IO if no IV access and patient is in extremis.
6) Atrovent (Ipratropium Bromode) is contraindicated in patients with soy or nut allergy.
7) Epinephrine IM is indicated for use in bronchospasm i.e. bronchiolitis and asthma
8) Magnessium is for bronchospasm / asthma only NOT COPD
9) Not in the I-99 Scope of practice

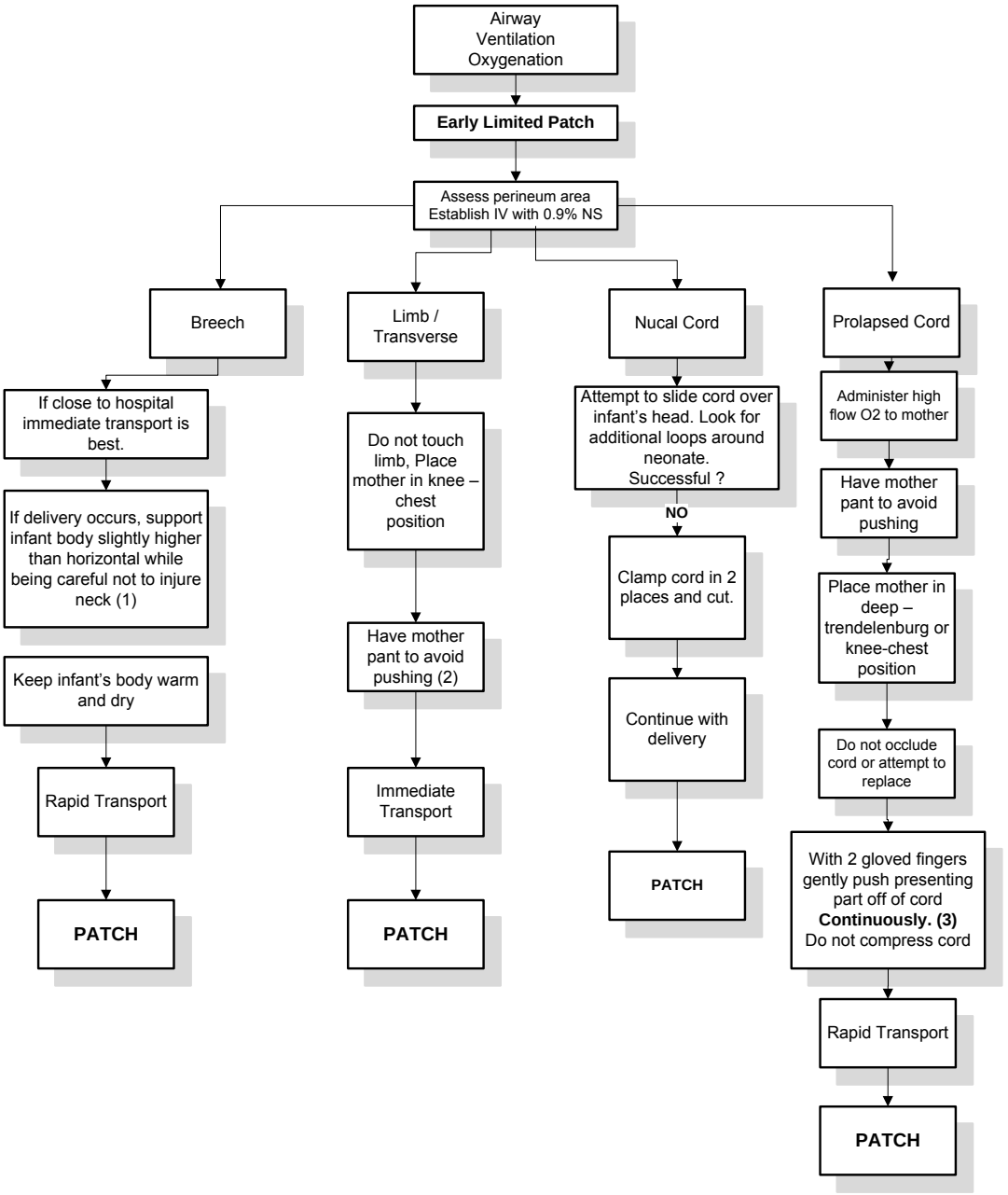
RESPIRATORY INSUFFICIENCY – PULMONARY EDEMA

I-99 Skill/Medication limitation



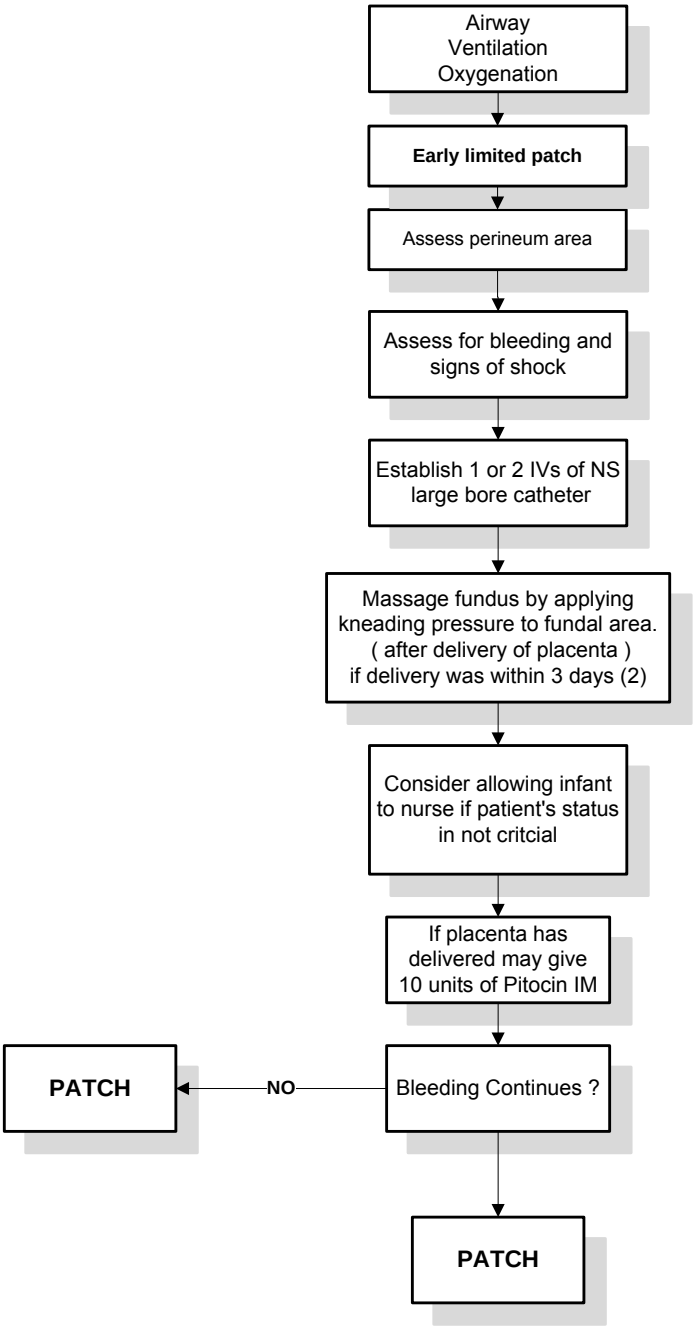
1) Patients who appear to be tiring or have decreased tidal volume may require respiratory assist.
2) High flow O2 should be used in any patient who appears distressed
3) Repeat vital signs and lung auscultation before and after administration of NTG.
4) Contact Medical Control to administer Dopamine drip 5-20mcg/kg/min.
5) Unless directed by online medical control Nitroglycerin is contraindicated in patients that have taken Viagra (sildenafil), Cialis, Levitra, or similar medication within 72 hours
6) Verify indications and contraindications for the use of CPAP (see appendix G)
7) Versed dose for Patients experiencing high anxiety with the use of CPAP (1 mg PRN Slow IVP May repeat every 5 min in small doses.
8) Not in the I-99 Scope of Practice
9) Bumex is to be used when Lasix is not available. Bumex 1 mg equals Lasix 40 mg

OBSTETRICS
COMPLICATIONS OF DELIVERY
ABNORMAL PRESENTATIONS



1) If placenta is still attached baby is being oxygenated/supported by mom.
2) On limb presentation the mother generally does not have urge to push.
3)Do not release pressure off the cord.

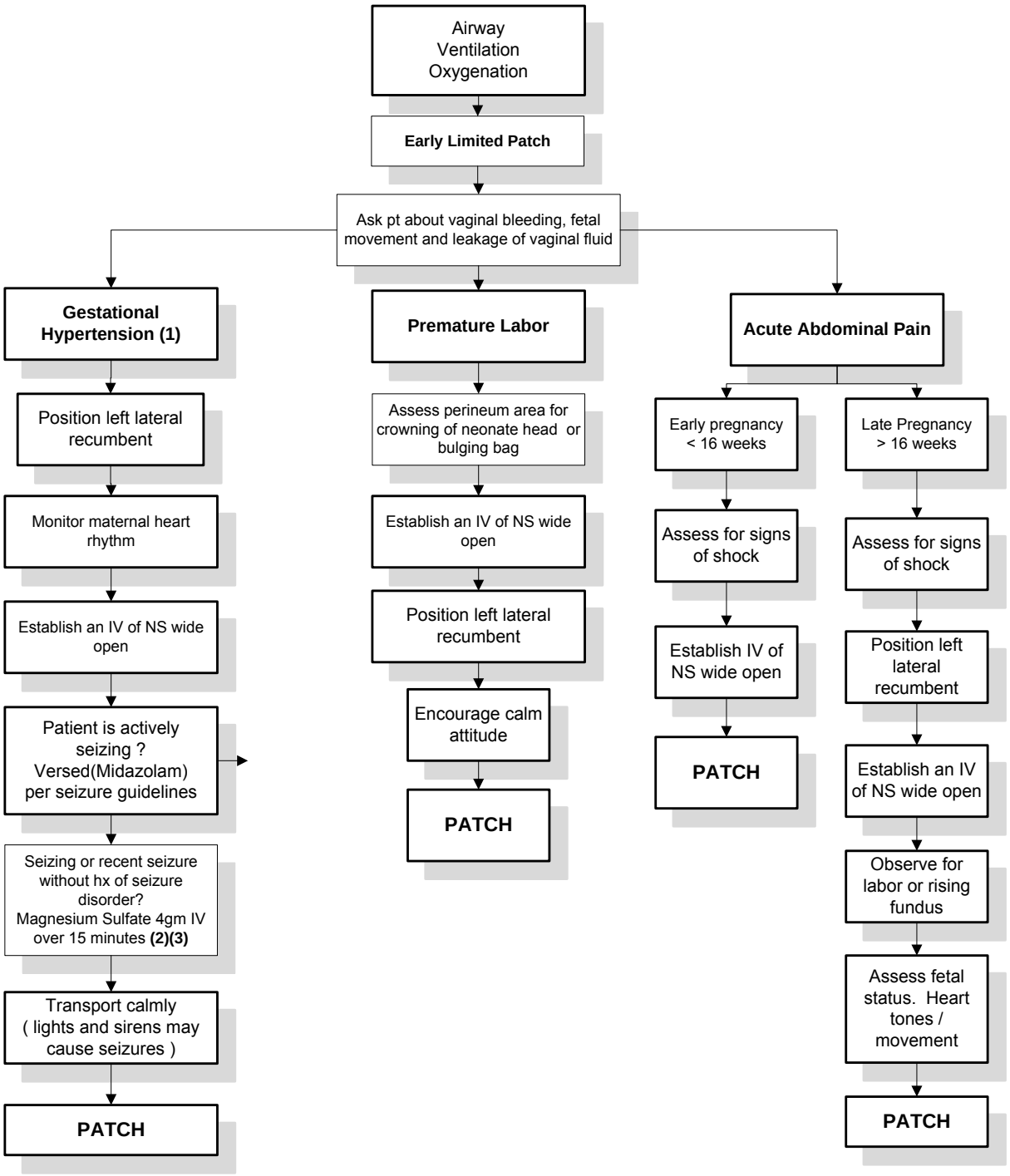
OBSTETRICS
COMPLICATIONS OF DELIVERY
POST PARTUM HEMORRHAGE (1)



1) Post partum hemorrhage is defined as blood loss in excess of 500mL and during the first 24 hours after delivery.
2) Immediately after delivery fundus generally is above the umbilicus and will drop to one finger below the umbilicus several hours after delivery.

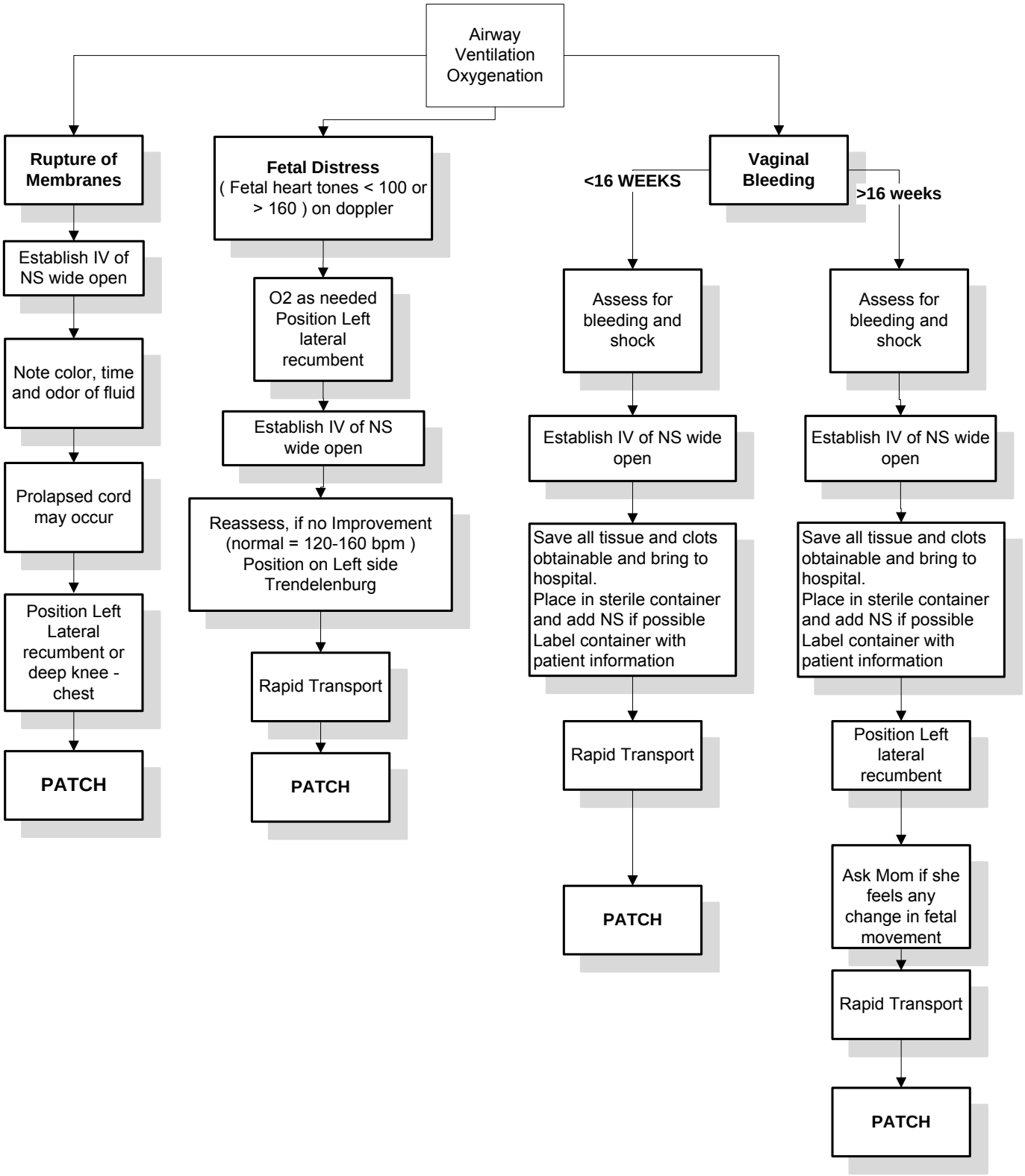
OBSTETRICS COMPLICATIONS OF PREGNANCY

I-99 Skill/Medication limitation

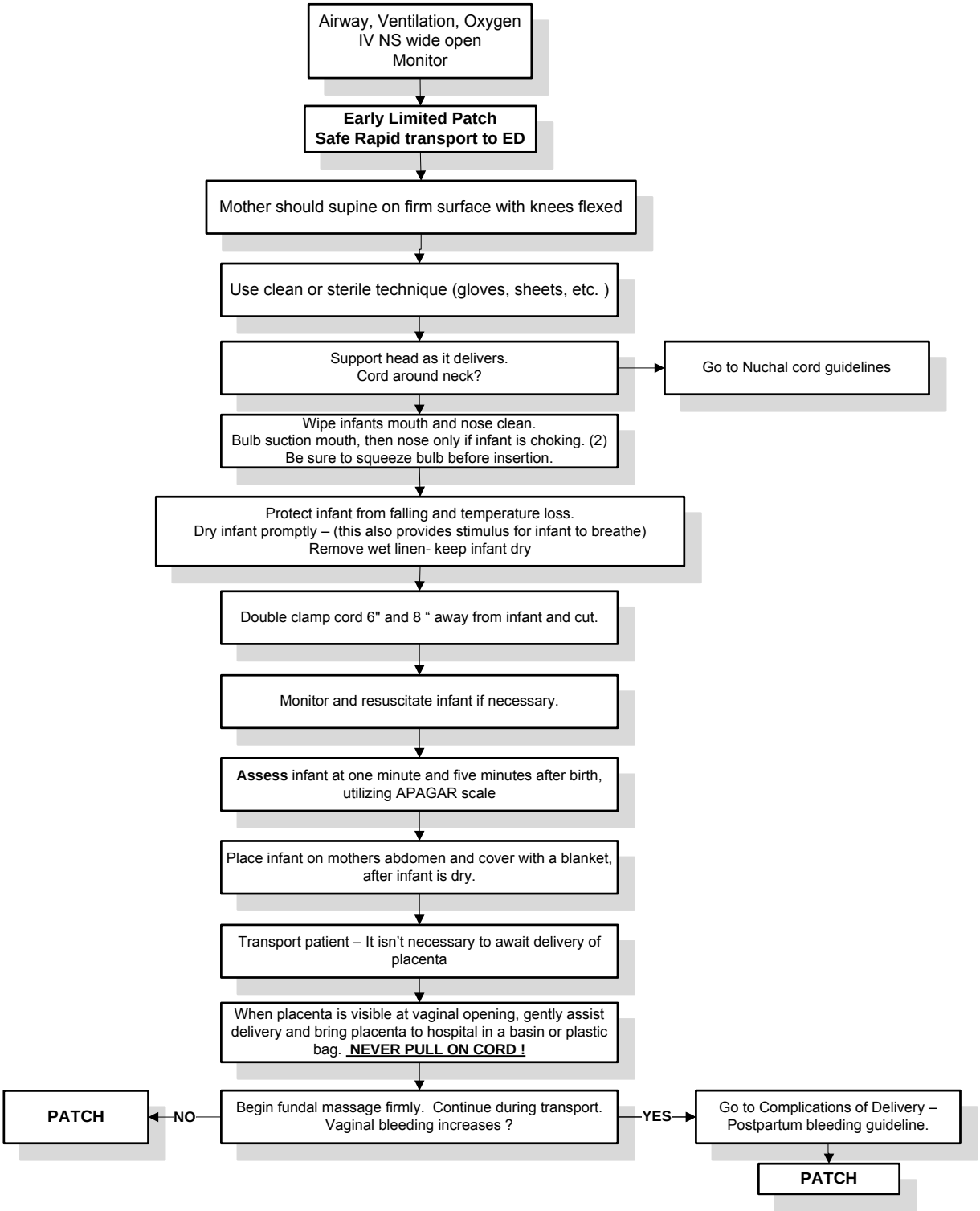


1) Signs of PIH/ pre-eclampsia / eclampsia may include: Diastolic BP > 80 mmHg with cerebral or visual disturbances, epigastric or RUQ pain with nausea and vomiting, ALOC, hyper-reflexia, peripheral edema, pulmonary edema, seizures.
2) Not is scope of I-99
3) Mix 4grams Magnesium in 100ml NS infuse as bolus over 15 minutes. Patch for orders for maintenance infusion.

OBSTETRICS
COMPLICATIONS OF PREGNANCY CONT.



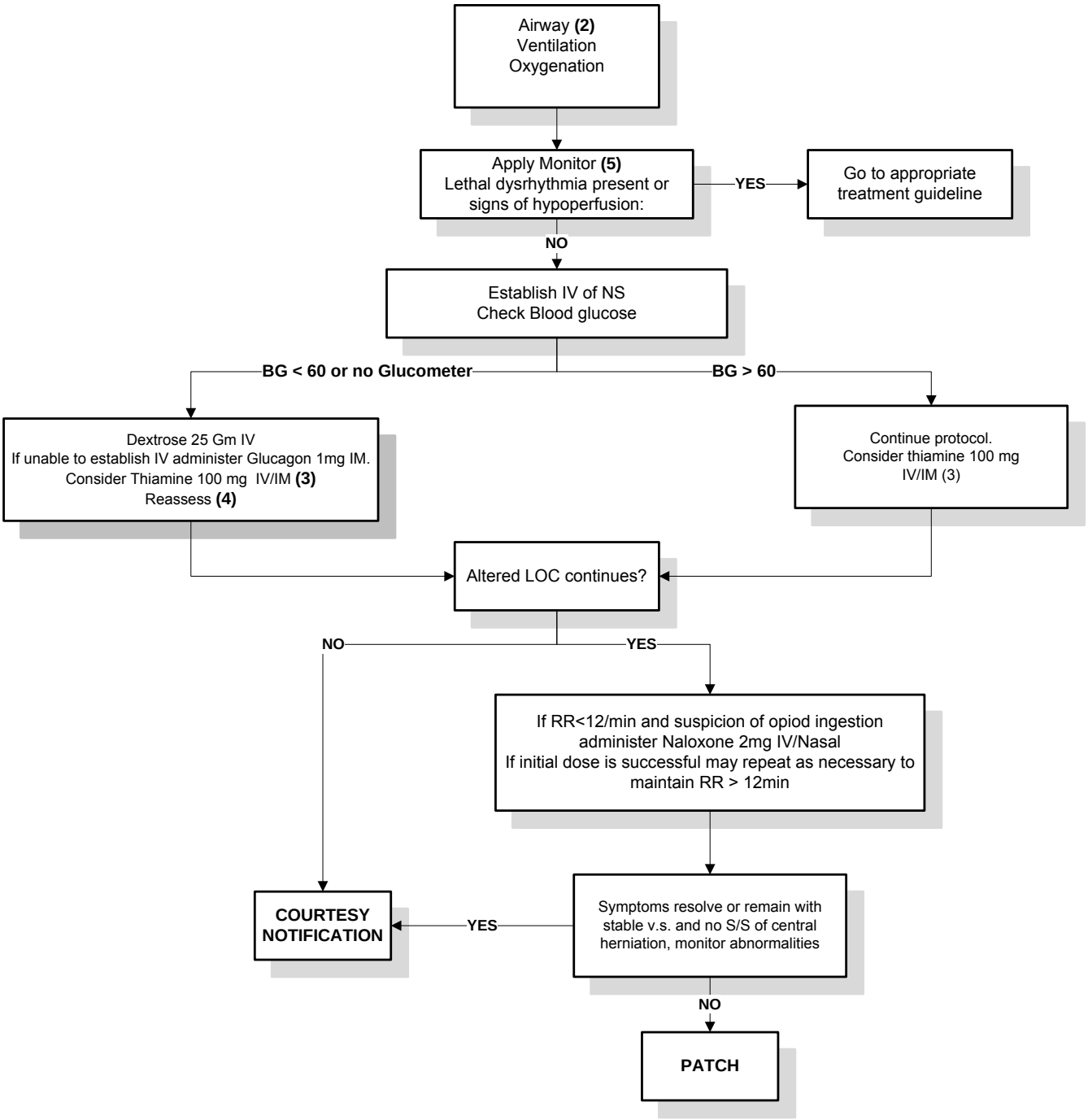
OBSTETRICS DELIVERY (1)



1) Prepare for immediate delivery if (a) contractions are less than 2 minutes apart and/or (b) perineal bulge obvious and scalp becomes visible (crowning)
2) Suctioning has been found to cause a vagal response.

ALTERED LEVEL OF CONSCIOUSNESS

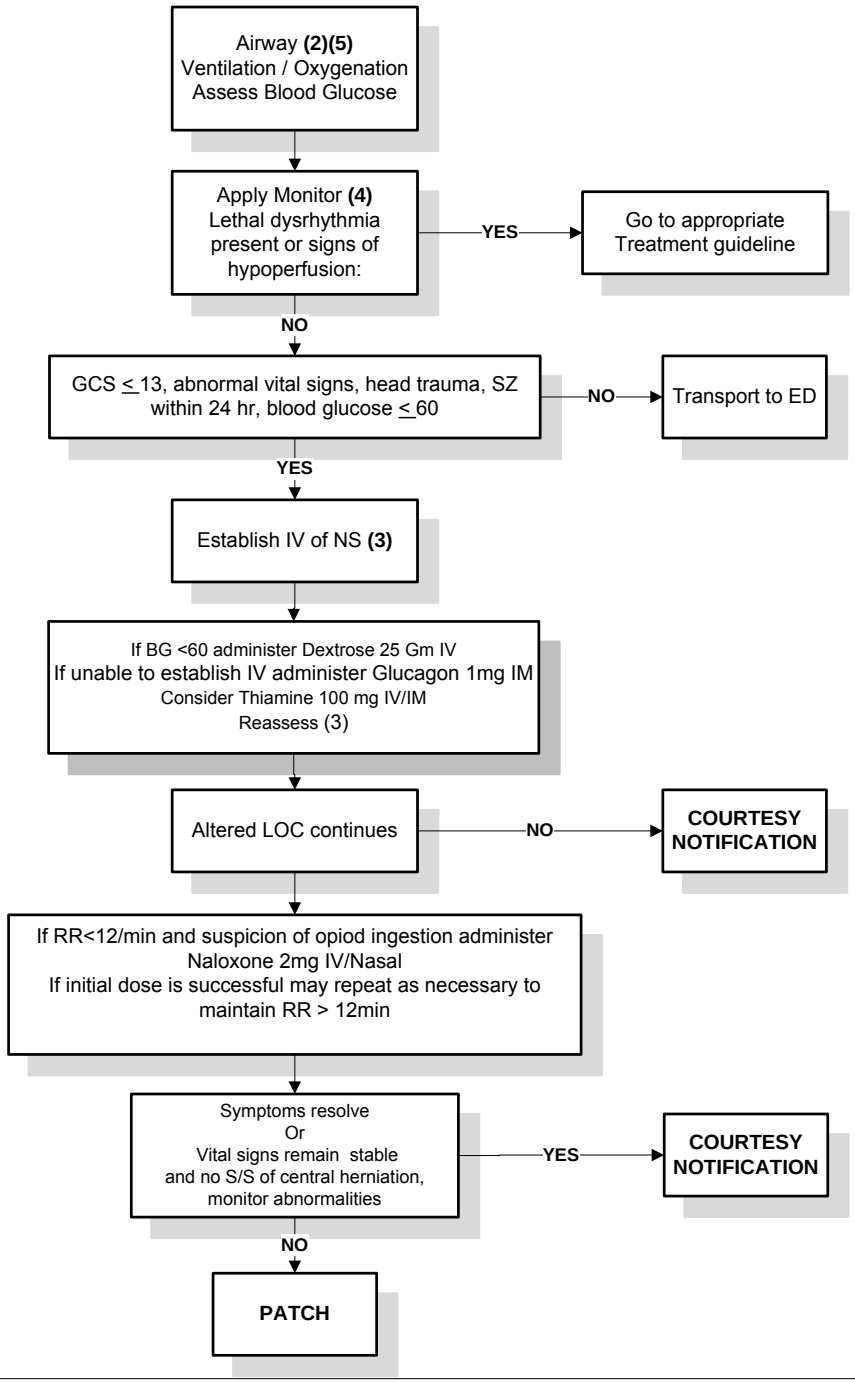
GCS of 14 or <, psychotic or combative behavior, the post seizure patient, the near/post syncope patient, or any patient with history of ALOC as a part of current event.(1)



1) Utilize information obtained from family, bystanders, friends, or other health care workers.
2) If hypoglycemia or opiate OD suspected, BLS airway management maybe sufficient until response to Dextrose and/ or Naloxone is determined.
3) If no history of alcoholism is suspected and malnutrition or cachexia is not present, Thiamine may be withheld.
4) If no change in LOC, repeat glucose. Realize the onset of action of Glucagon is 5-15 minutes.
5) Consider 12 lead

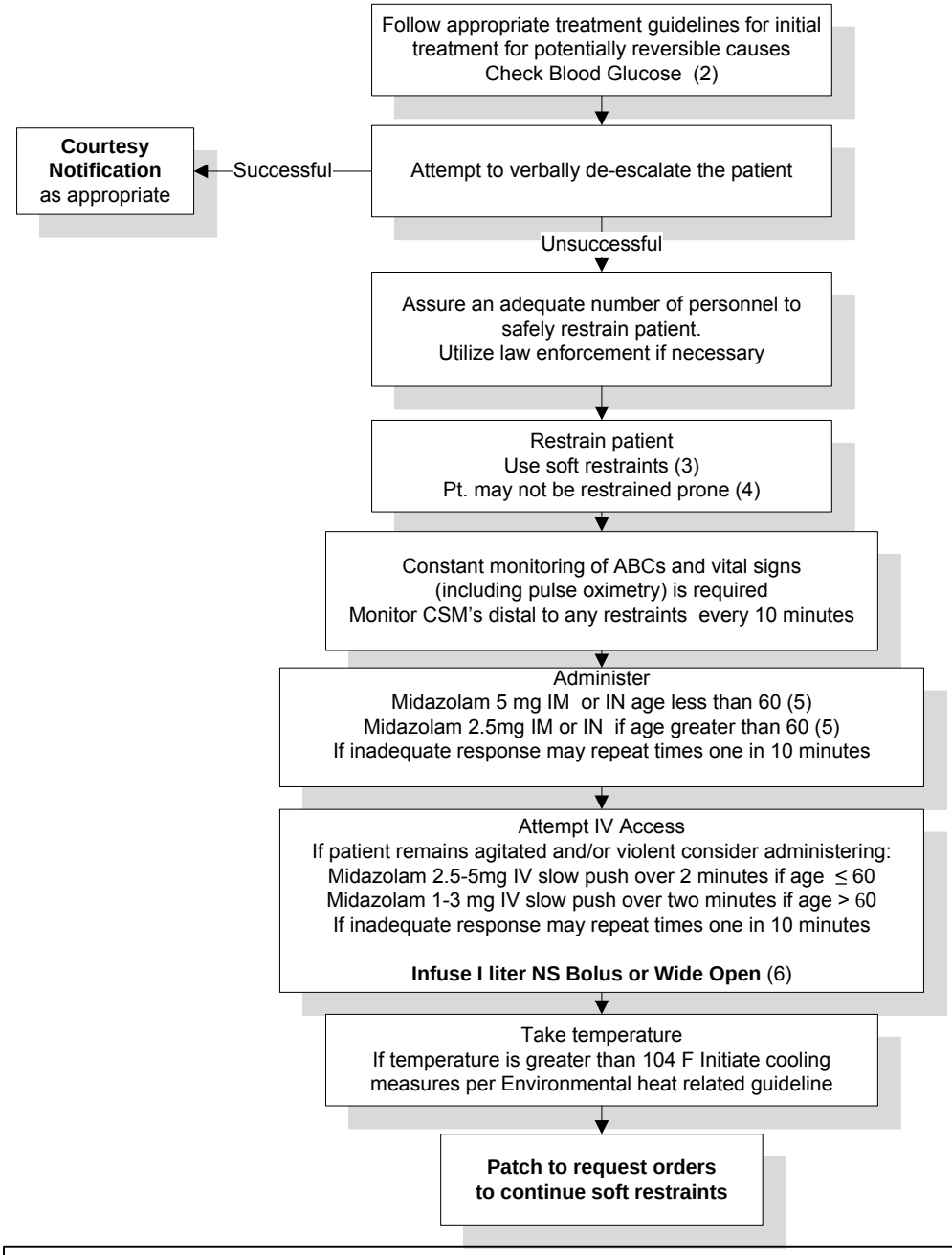
ALTERED LEVEL OF CONSCIOUSNESS

With suspected alcohol intoxication (1)



1) Utilize information obtained from family, bystanders, friends, or other health care workers.
2) If hypoglycemia or opiate OD suspected, BLS airway management maybe sufficient until response to Dextrose and/ or Narcan (Naloxone) is determined.
3) If no change in LOC, repeat glucose. Realize the onset of action of Glucagon is 5-15 minutes.
4) Consider 12 lead
5) Do not intubate sleeping, stable intoxicated patient if oxygenating and ventilating.

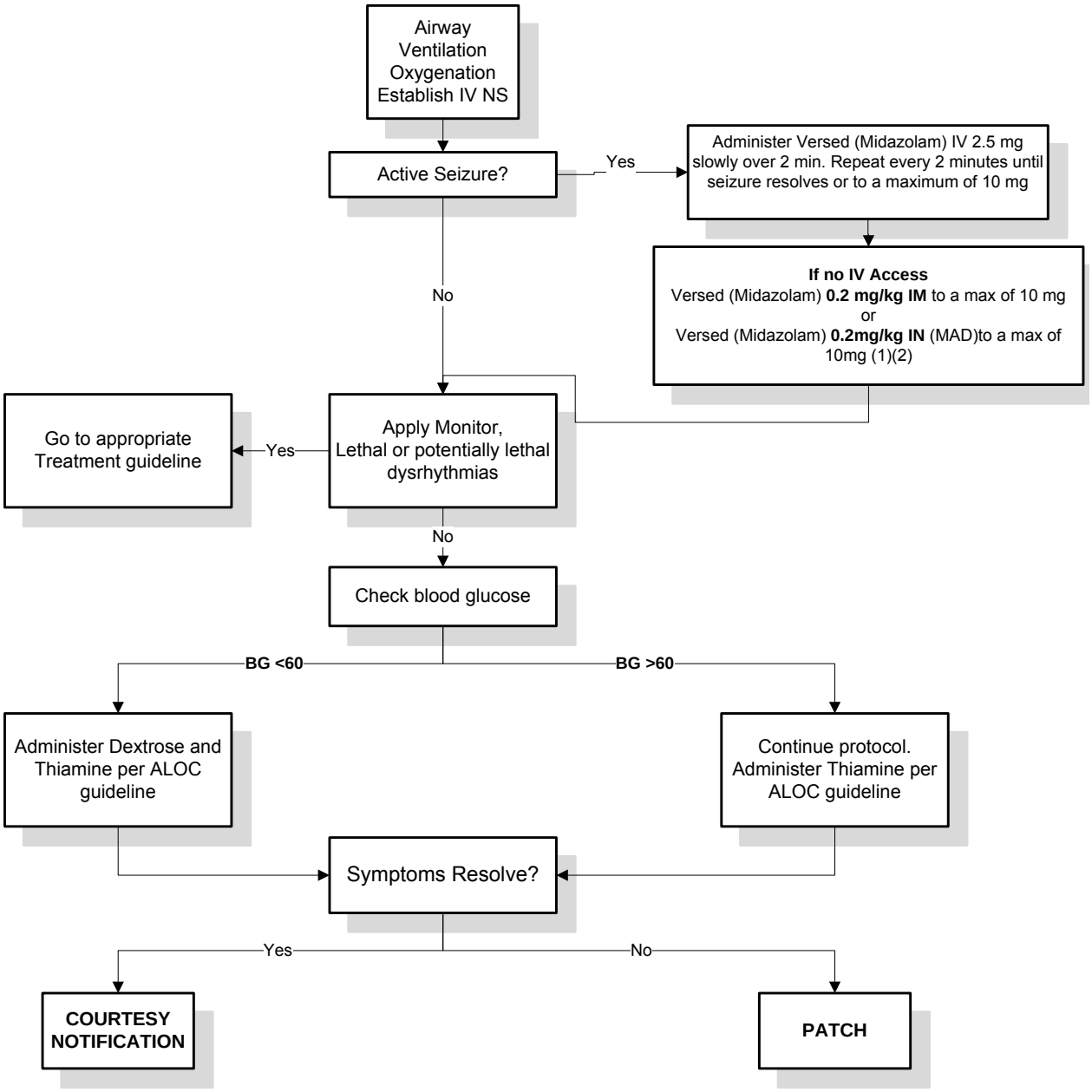
ADULT VIOLENT/AGITATED PATIENT (1)



(1) Agitated patient (significant psychomotor agitation) due to possible drug ingestion and/or violent patients who after initial treatment remain a danger to self or others.
(2) Patients may need to be restrained for patient, provider, or bystander safety in order to complete other appropriate treatment guidelines.
(3) If patient is in police custody and handcuffs have been applied it is preferable that a police officer also accompany the patient. EMS providers must, at a minimum, have the handcuff key in their possession during transport.
(4) Patients shall be positioned in a manner that does not compromise airway or breathing. No patient will be restrained prone or "hog-tied." No patient will be placed between backboards or gurneys.
(5) IM and IN dosage of Versed use concentration of 5mg/1ml only
(6) Monitor Lung sounds and adjust as necessary

SEIZURE

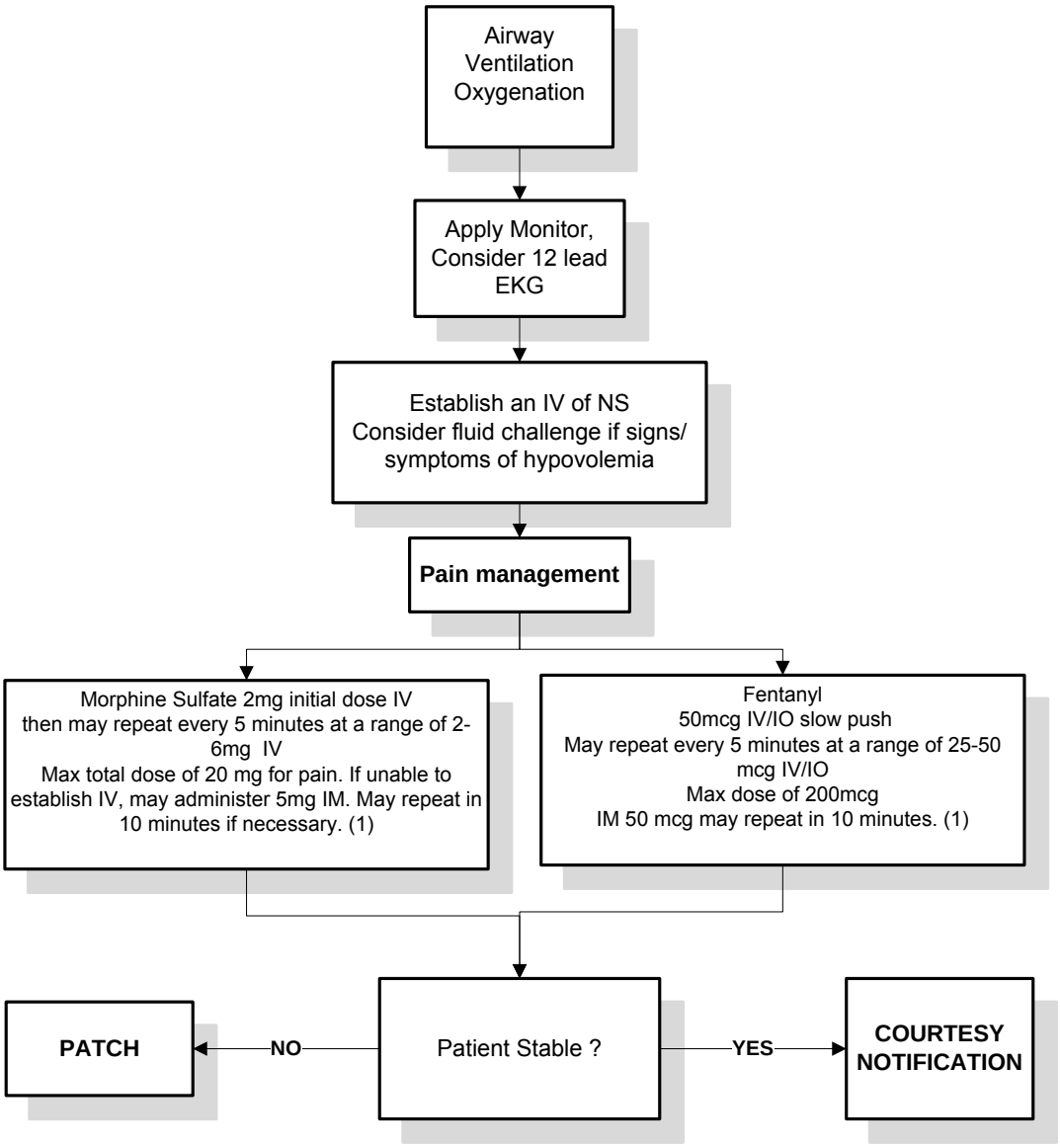
Prolonged, Repetitive, or Status Epilepticus



1) The only approved intranasal method of administering medications is with the Mucosal Atomizing Device (MAD). Administer no more than 1ml per nostril. Use higher concentration of Versed 5mg/ml.
2) If patient Prolonged, Repetitive, or Status Epilepticus Contact Medical control

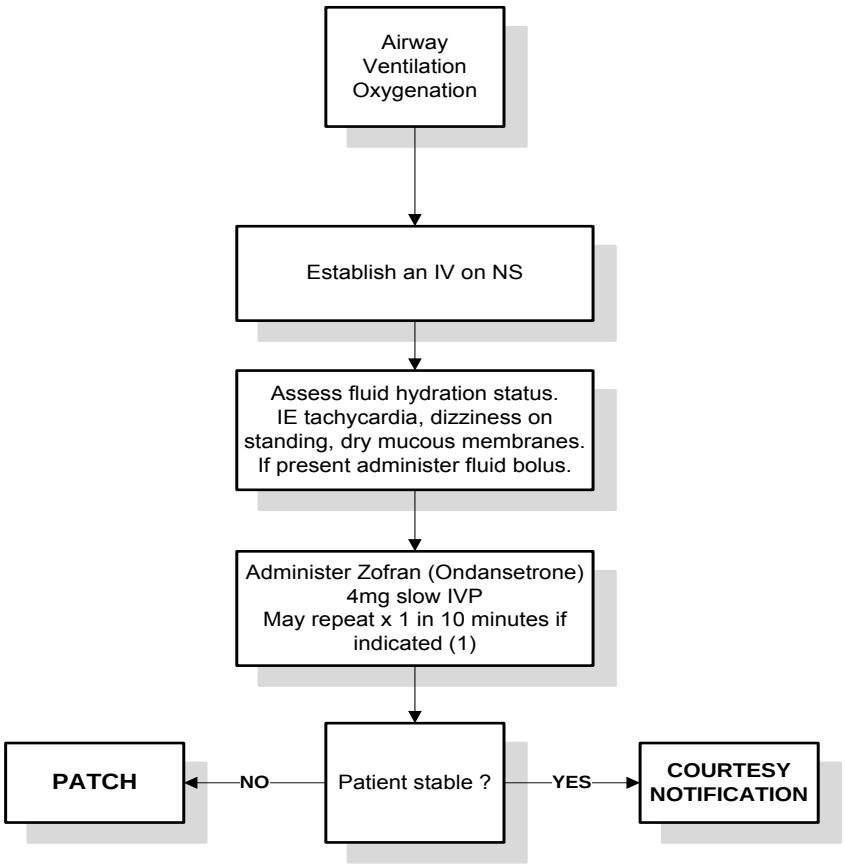
ABDOMINAL PAIN, NON – TRAUMATIC

Testicular torsion, Pelvic pain, AAA



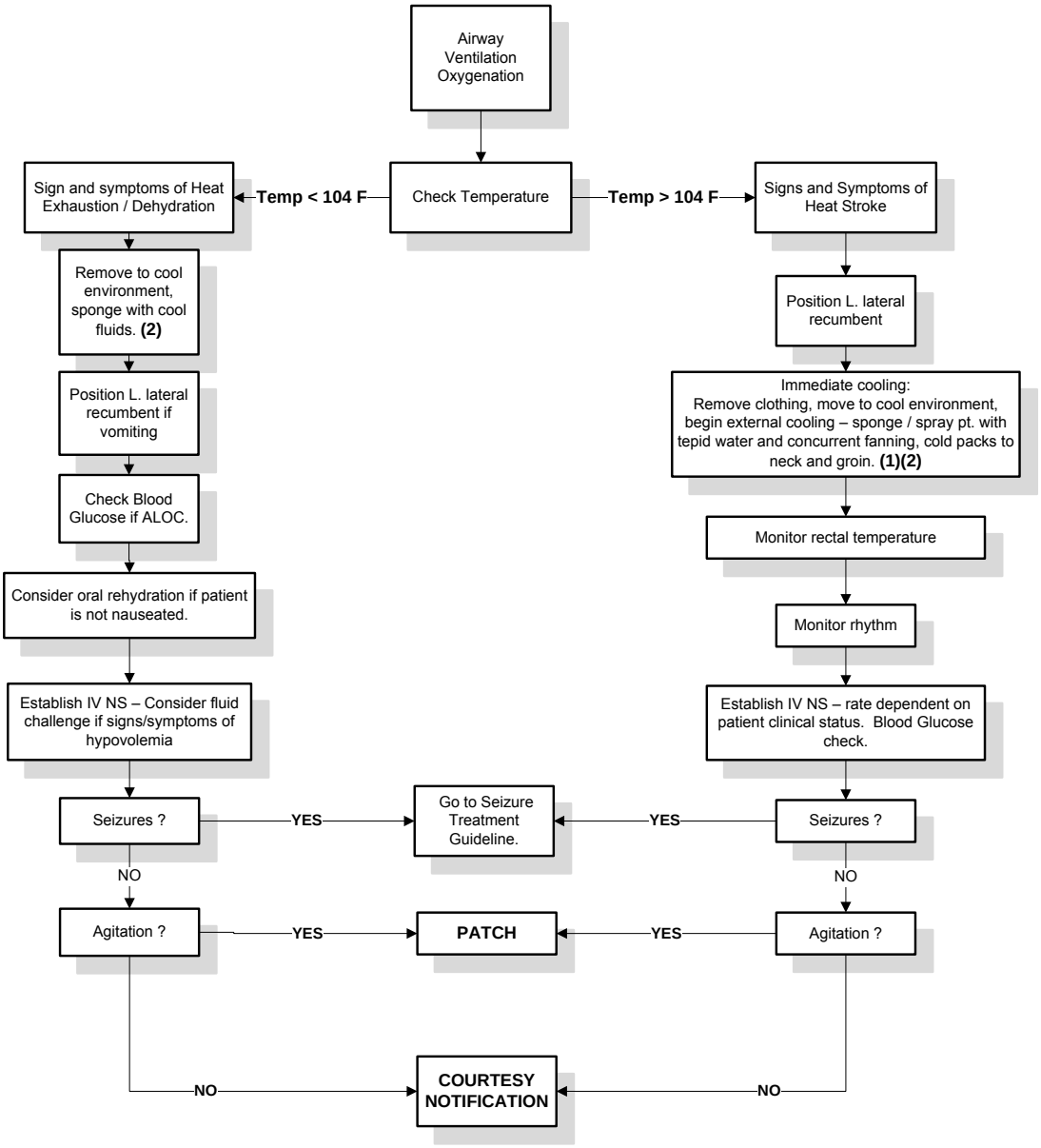
1) Assess vital signs before and after each administration of Morphine and Fentanyl.

NAUSEA AND VOMITING



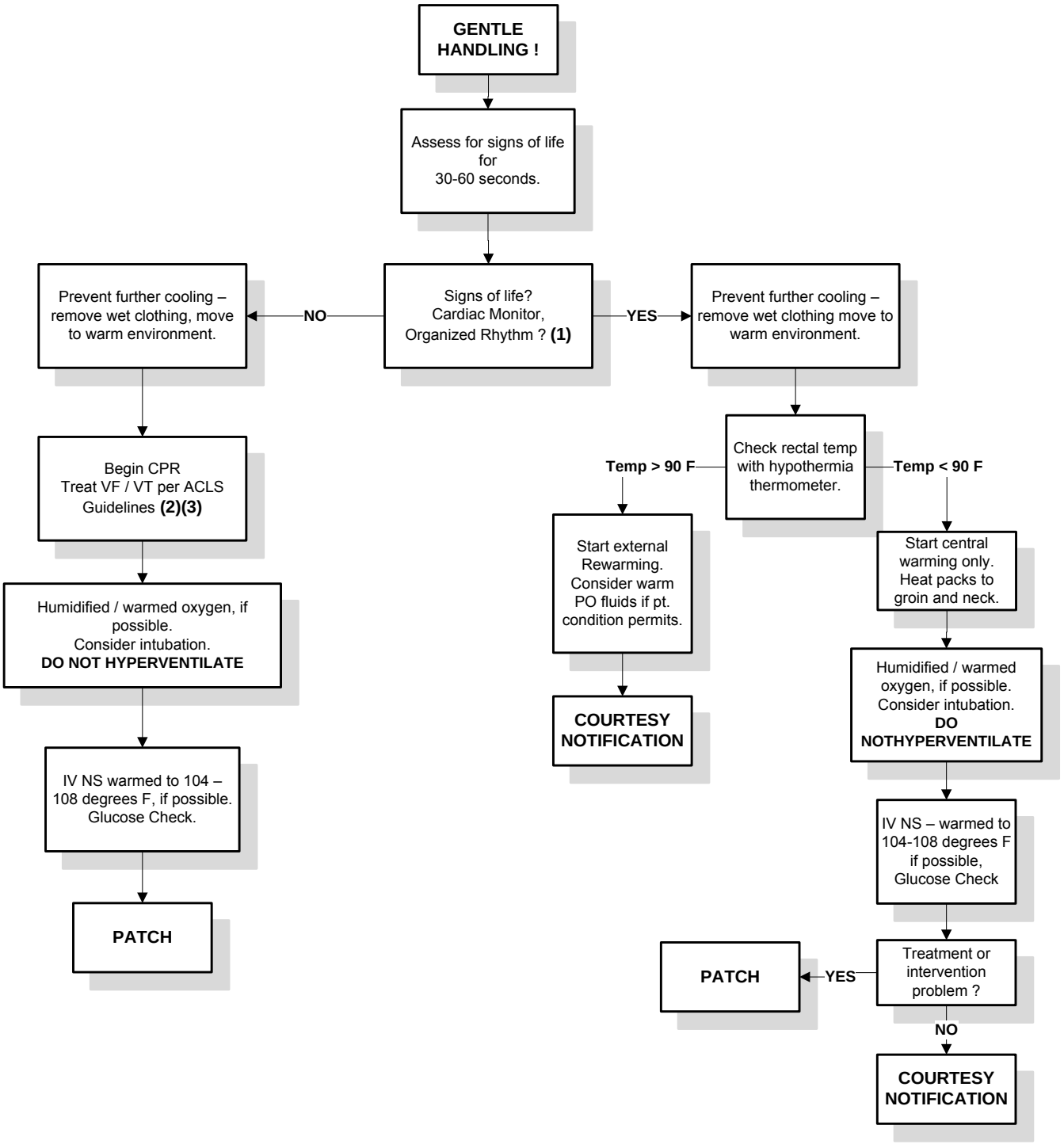
1) If ondansetron IV unavailable may administer alternate 4 mg ODT (oral disintegrating tablets) if available

ENVIRONMENTAL – HEAT RELATED



1) Do not cool below 102 degrees F.
2) Do not over cool and cause shivering and reoccurring heat buildup. If patient is shivering contact Medical Control to administer Midazolam or Diazepam.
3) If patient is agitated contact Medical Control to administer Midazolam or Diazepam.

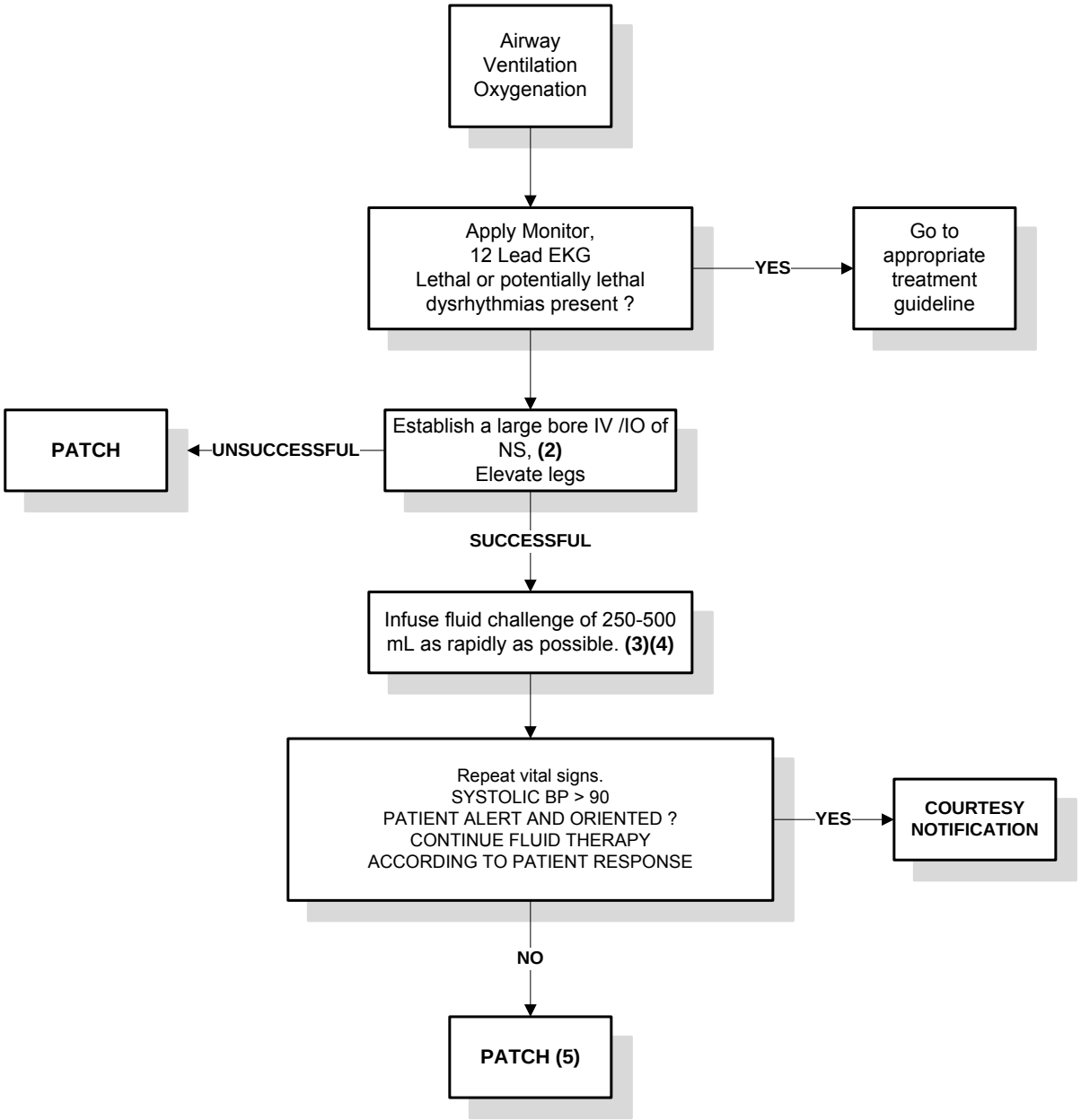
ENVIRONMENTAL - HYPOTHERMIA



1) If there is an organized rhythm do not begin CPR unless directed by Medical Control.
2) Utilize only 1 shock.
3) Contact Medical Control for ACLS medication administration regimen. Consider withholding medications if core temperature is < 86 degrees F and an extended time between doses if temperature is > 86 degrees F.

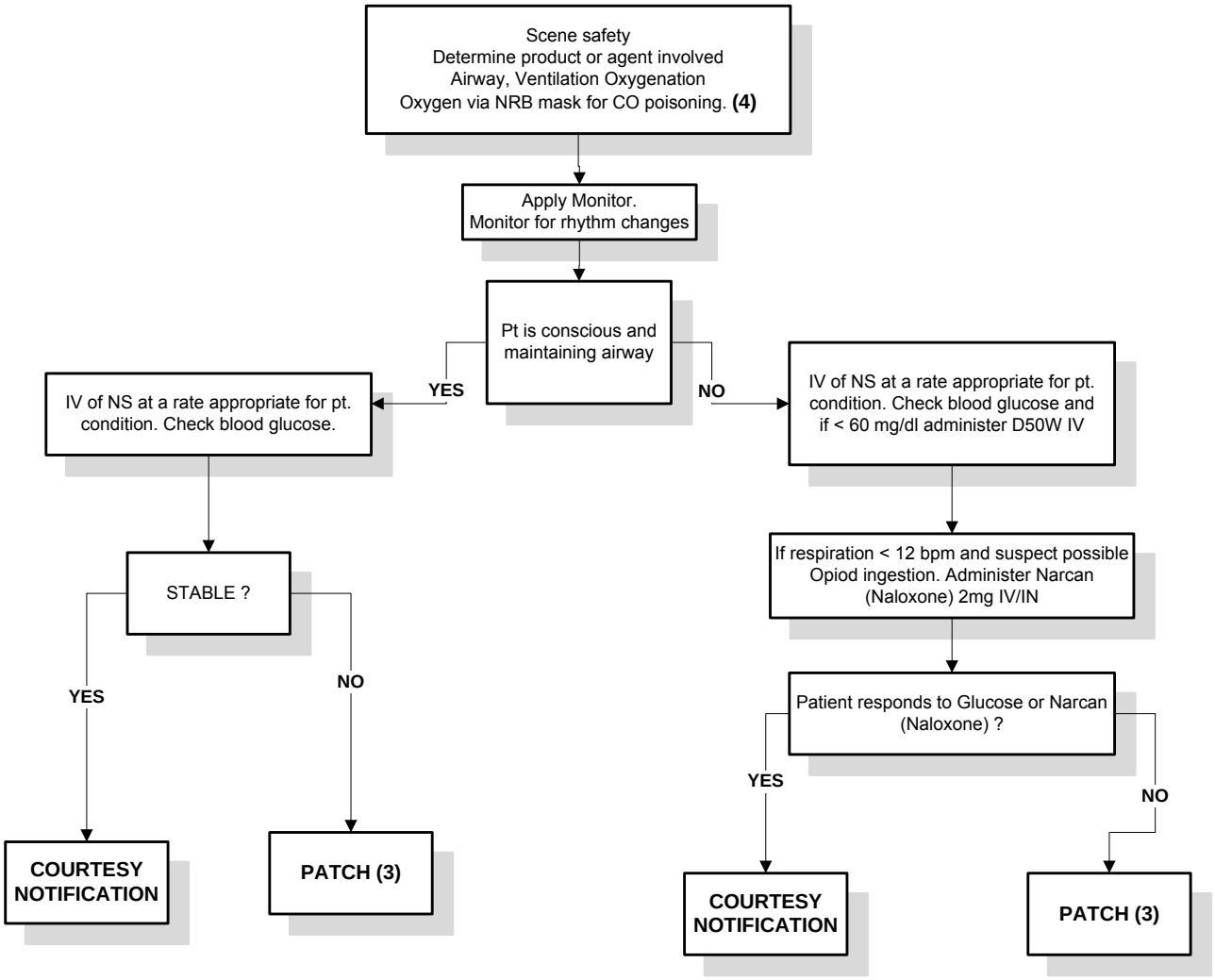
HYPOTENSION/SHOCK(1)

Applies ONLY when other specific ALS protocols do not apply.
Hypotension is defined as BP < 90 systolic and associated signs / symptoms of hypoperfusion.
If history / evidence of Trauma, proceed to Trauma Treatment Guideline.
I-99 Skill/Medication Limitation



1) PMH and patient's medications may be key to index of suspicion for cause of hypotension, e.g. history of ulcers, aneurysm, previous cardiac disease, alcoholism, etc. Consider possible causes of hypotension and treat cause.
2) Consider establishing 2 large bore IV's dependent upon patient's presentation
3) Bolus fluid in less than 10 minutes.
4) Repeat vital signs and lung auscultation before and after fluid administration.
5) If patient continues to be hypotensive contact Medical Control to administer Dopamine drip 5-20 mcg/kg/min**.(6)**
6) Not in I-99 Scope of Practice

POISONING / OVERDOSE (1)(2)
I-99 Skill/Medication limitation

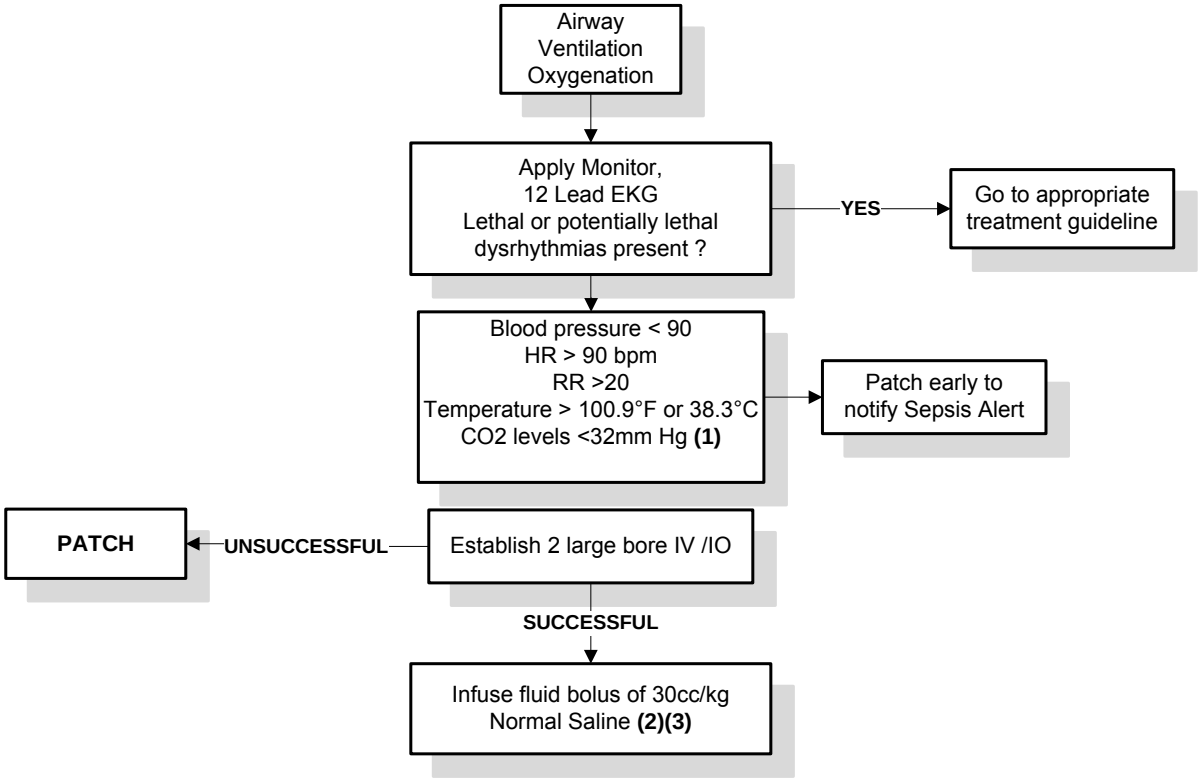


1) Patients who are suspected or known to have ingested substances with a suicidal intent may not refuse transport.
2) Bring bottles / containers if possible. INSPECT SCENE.
3) Consider Medical Control input for Sodium Bicarbonate 1-2 mEq/kg for Tricyclic antidepressant overdose, Calcium chloride 0.5 -1 Gm. for calcium channel blocker overdose **(5),** Atropine 2 mg every 2-4 min. for organophosphate exposure.
4) Do not intubate a stable airway. Give O2 and Ventilate patient.
5) No in I-99 Scope of practice

Suspected Sepsis

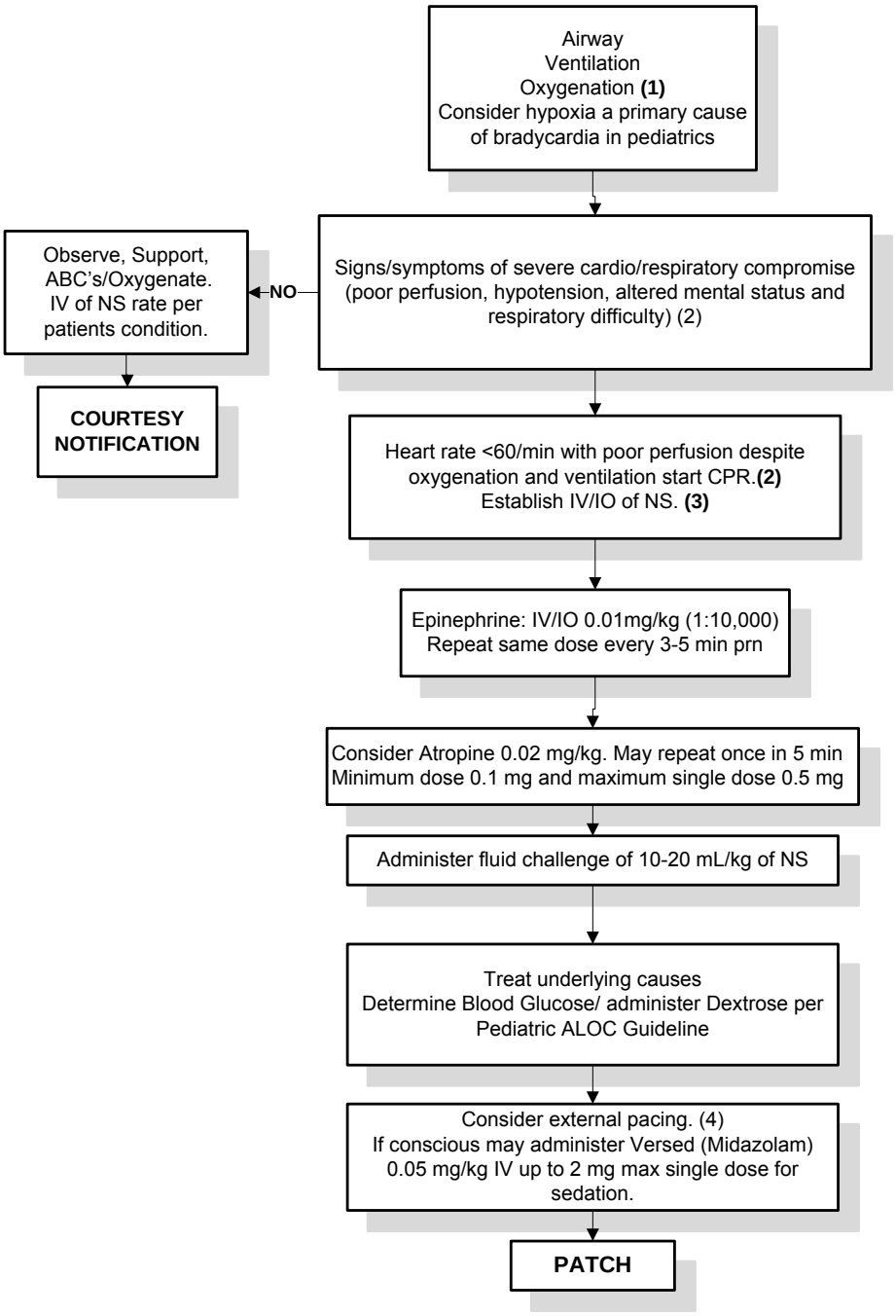
Consider possible sources of infection.

Suspected infections included pneumonia, meningitis, intra-abdominal infection, urinary tract infection, and catheter infection



1) If patients presents with 3 or more and suspect infection initiate sepsis alert.
2) Bolus fluid in less than 10 minutes.
3) Repeat vital signs and lung auscultation before and after fluid administration.

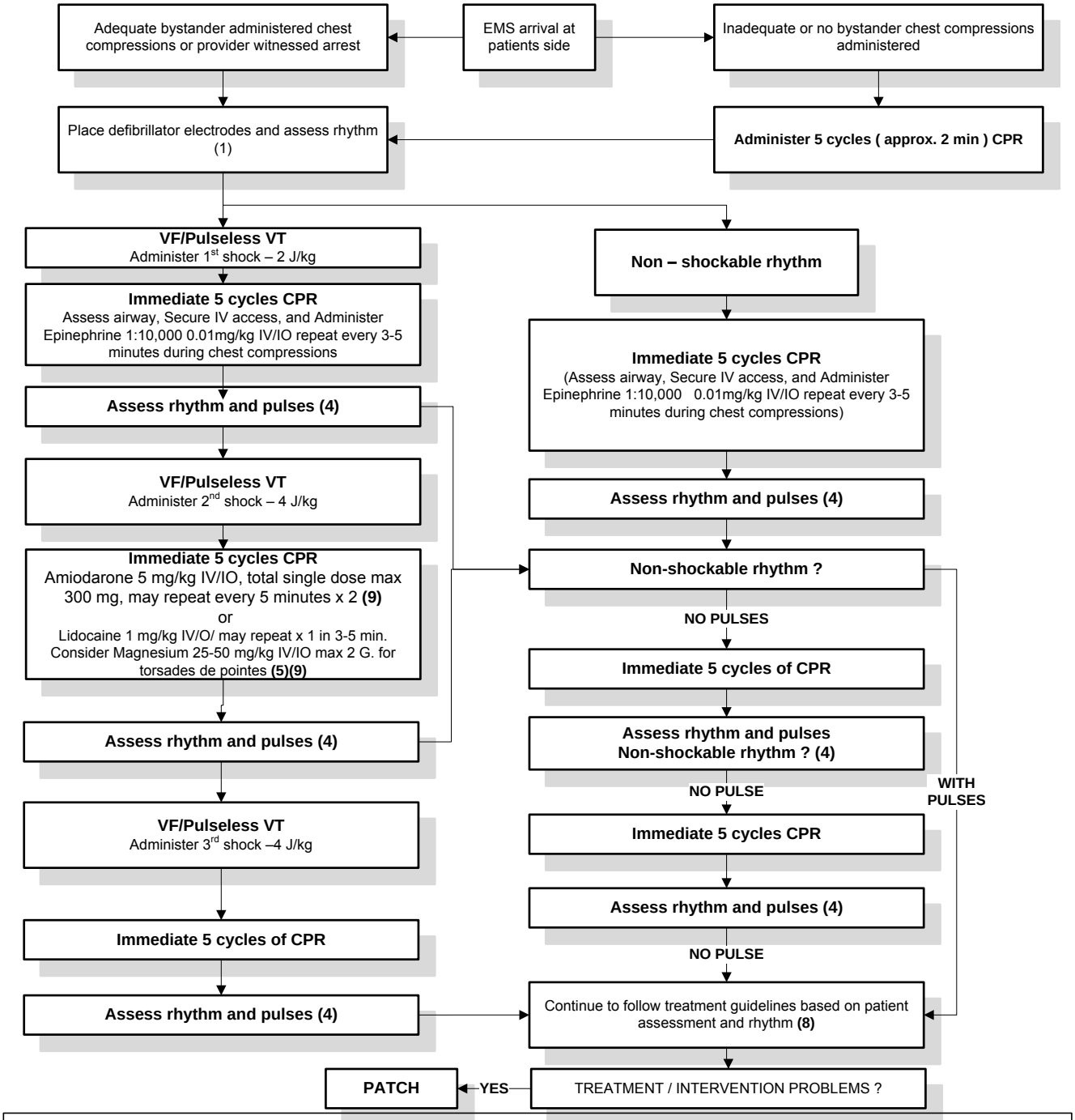
PEDIATRIC BRADYCARDIA, UNSTABLE



1) If airway is managed with BVM for greater than 2 minutes, insert 10-16 Fr. OG/NG tube. Gastric decompression allows adequate pulmonary tidal volumes.
2) Special considerations may apply in the presence of severe hypothermia.
3) Consider IO use if IV access unavailable.
4) Limited pediatric data; 15 kg or less pediatric electrodes recommended. For greater than 15 kg use adult electrodes.
5) Consider Medical Control input to administer Epinephrine IV continuous infusion at a rate of 0.1 to 1 mcg/kg/min.
6) Rapid transport is essential in these situations. The above procedures should be performed as the patient is being moved towards the hospital.

PEDIATRIC PULSELESS ARREST

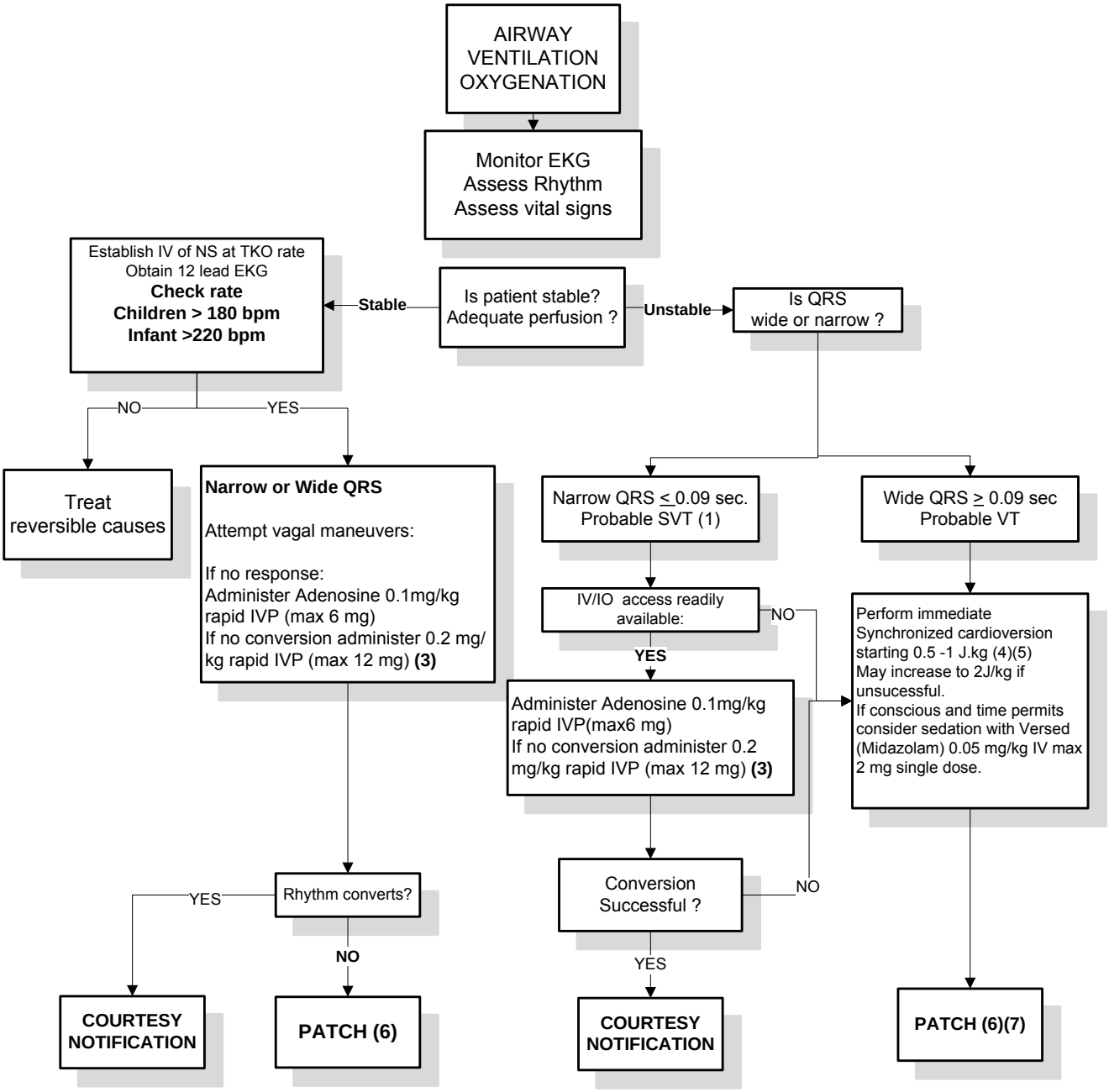
I-99 Skill/Medication Limitation



1) Assess rhythm – quick look, only check pulses if there is an organized rhythm present.
2) Evaluate airway, intubate if necessary, limit interruption of CPR as much as possible.
3) Once patient is successfully intubated perform continuous asynchronous compression (rate 100/min) with ventilations (rate 8-10/min)
4) Pulse checks should be done only if EKG indicates a potentially perfusing rhythm, do not interrupt chest compressions, and be very brief.
5) Medications should be administered during CPR either immediately before or after defibrillated so the drugs have time to circulate before rhythm check.
6) Consider possible causes: Hypovolemia,(volume infusion), hypoxia (ventilation/re-evaluation),acidosis (ventilation/re-evaluation), tension pneumothorax (needle decompression), hypothermia, hypoglycemia, drug overdose, cardiac tamponade (volume infusion), massive AMI, hyperkalemia (consider NaHCO3, D50W,Calcium Chloride) massive pulmonary embolism.
7) If airway managed with BVM > 2 min. insert 10-16 Fr. OG/NG tube after patient has been intubated.
8) If patient remains asystolic or other agonal rhythm after successful intubation, initial medications, no reversible causes are identified, and transport has not been initiated, consider termination of resuscitative efforts by order of a physician. Consider interval since arrest.
9) Not in I-99 Scope of Practice

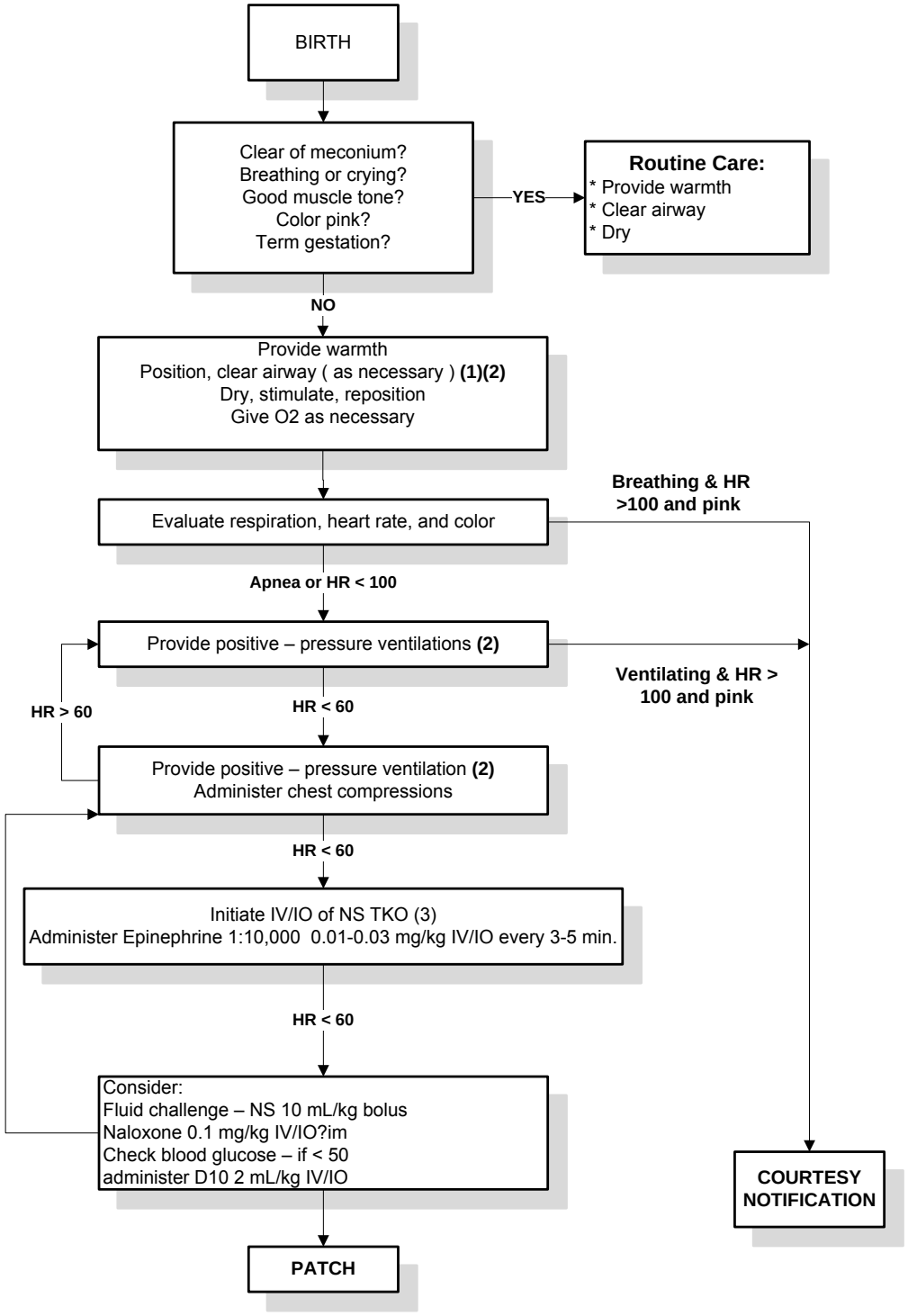
PEDIATRIC TACHYCARDIA WITH PULSES

I-99 Skill/Medication Limitation



1) Probable SVT in pediatrics: History incompatible with presentation, P waves absent or abnormal, HR not variable with activity, abrupt rate changes. Infant rate usually > 220 bpm and children usually > 180 bpm.
2) Patients often fit in between borderline and critically unstable situations. In these circumstances, a trial of adenosine may be considered but the medic must be prepared for immediate cardioversion.
3) the medic should consult Medical Control and consider reducing the Adenosine dosage in patients who are on Dipyridamole (Persantine) and Carbamazepine (Tegretol)
4. Consider 12 lead EKG
5) Or biphasic equivalent
6) If probable VT and BP less than 90 mm Hg Systolic contact Medical Control to administer Amiodarone 5mg/kg, max single dose 150 mg over 20 minutes may repeat two more times to a total of 15 mg/kg/day **(7)** or Lidocaine 1mg/kg every 5-10 minutes to a total of 3 mg/kg.
7) Not in scope of I-99

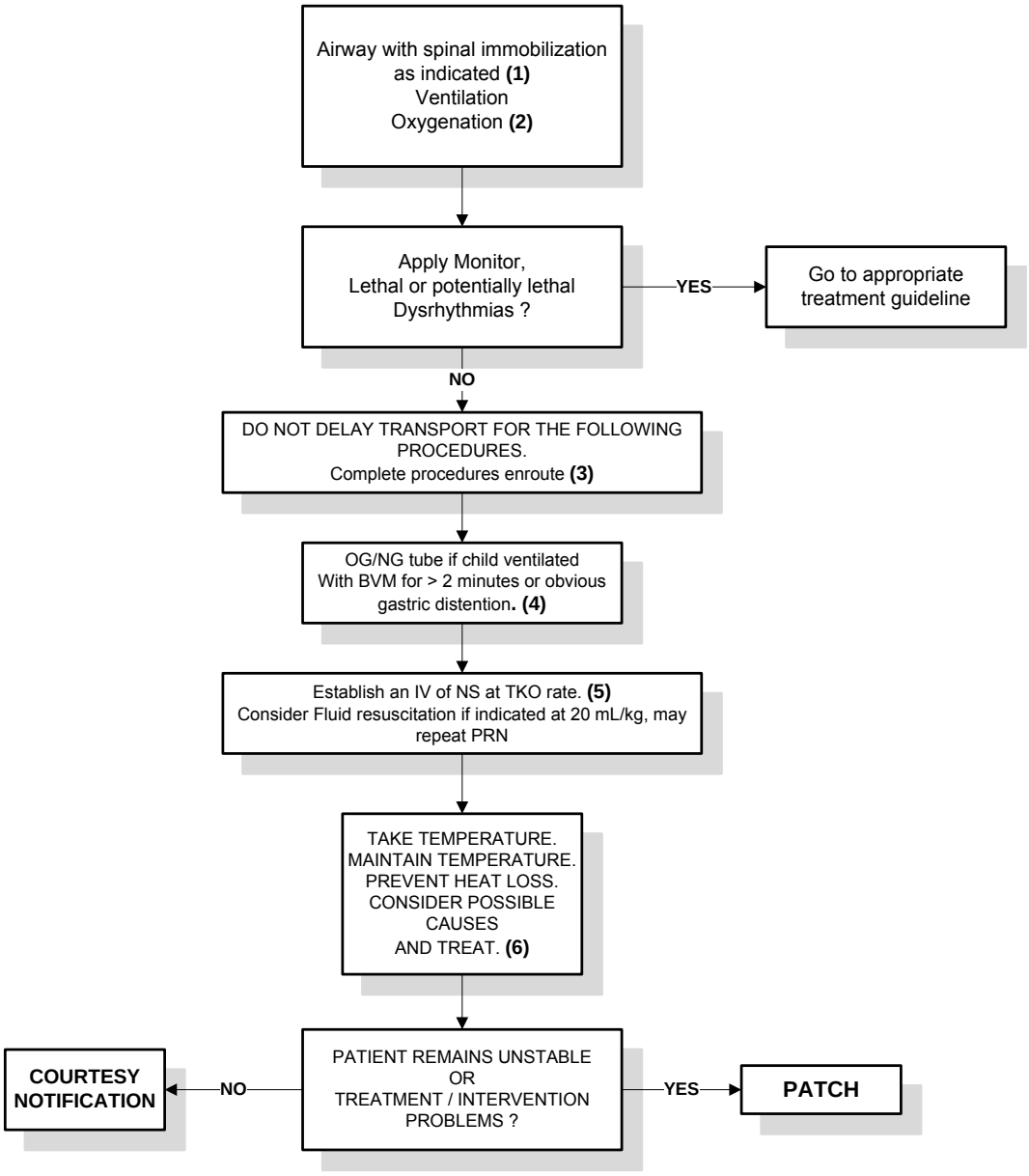
PEDIATRIC – NEONATAL RESUSCITATION



1) If patient is not vigorous and meconium staining is present deep suction mouth and posterior pharynx then nose. Tracheal suctioning may be necessary before stimulating neonate and proceeding with other resuscitative steps. Vigorous- strong respiratory effort, good muscle tone, heart rate > 100 bpm. Depressed- weak or absent respiratory effort, poor muscle tone/limp, heart rate < 100 bpm.
2) Tracheal intubation may be considered at several steps. Tracheal tube should be used for tracheal suctioning.
3) Utilize IO or if peripheral IV sites inaccessible.

PEDIATRIC – SUBMERSION INCIDENT – CATEGORY 1

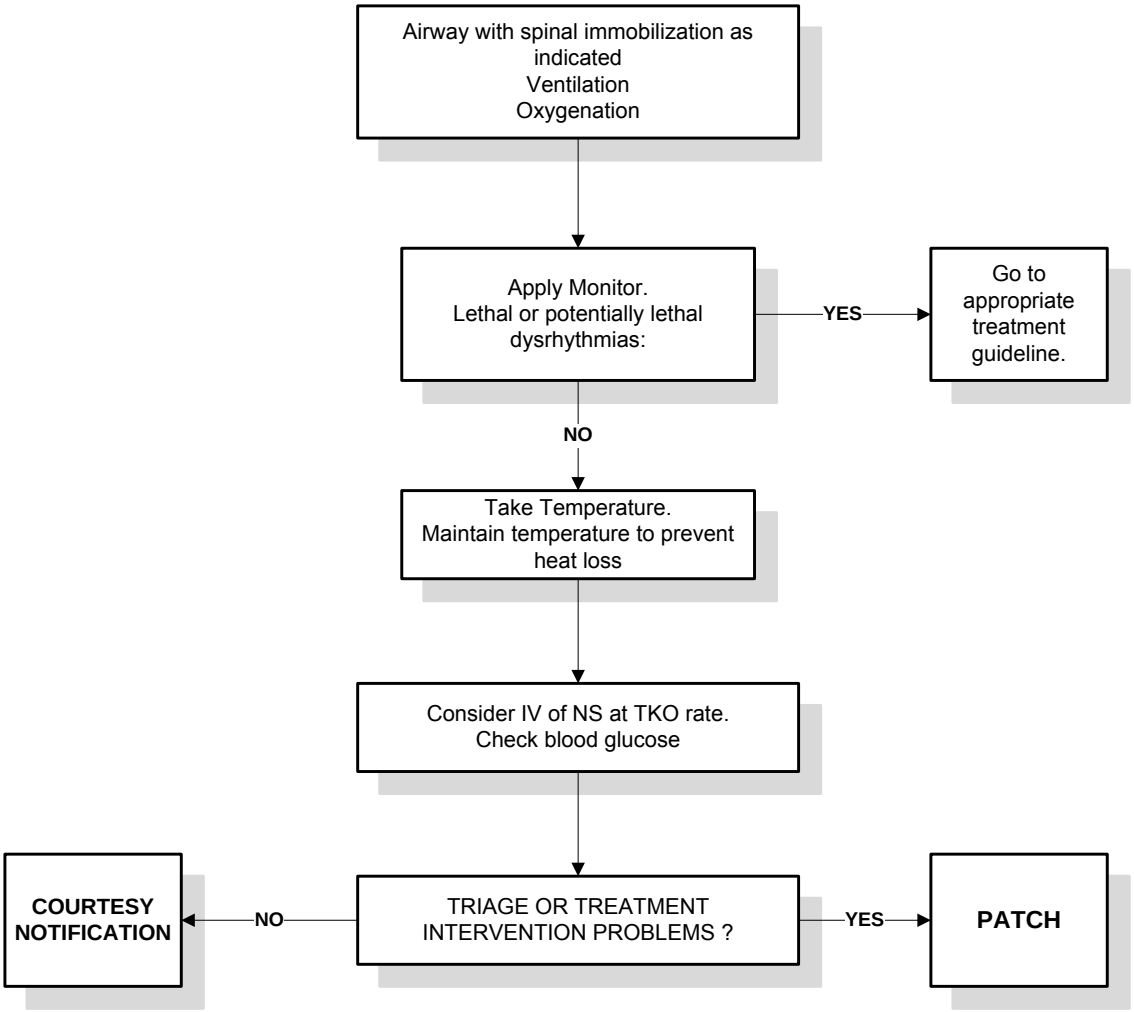
Applies to a patient with no spontaneous respirations or pulses on arrival of unit; also includes patient with pulses and respirations and with significant alteration of LOC.



1) BVM with reservoir with 100% O2 may be adequate to provide ventilation and oxygenation. If ventilation appears clinically inadequate or transport will be greater than 5 minutes, consider intubation.
2) 100% oxygen should be used in all patients.
3) Rapid transport is of the utmost importance. Advanced Life Support procedures should be attempted at the scene, but if unsuccessful within a short period of time, the patient should be transported to nearest appropriate facility without further delay.
4) Gastric decompression allows adequate pulmonary tidal volumes. Insert 1O-16 Fr. NG/OG catheter.
5) Establishment of an IV should not delay patient transport.
6) Hypoxia (ventilation/re-evaluation), acidosis (ventilation/re-evaluation, consider orders for sodium bicarbonate), tension pneumothorax (needle decompression), hypothermia (see Hypothermia Treatment Guideline), trauma-hypovolemia (volume infusion), hypoglycemia (check blood sugar)

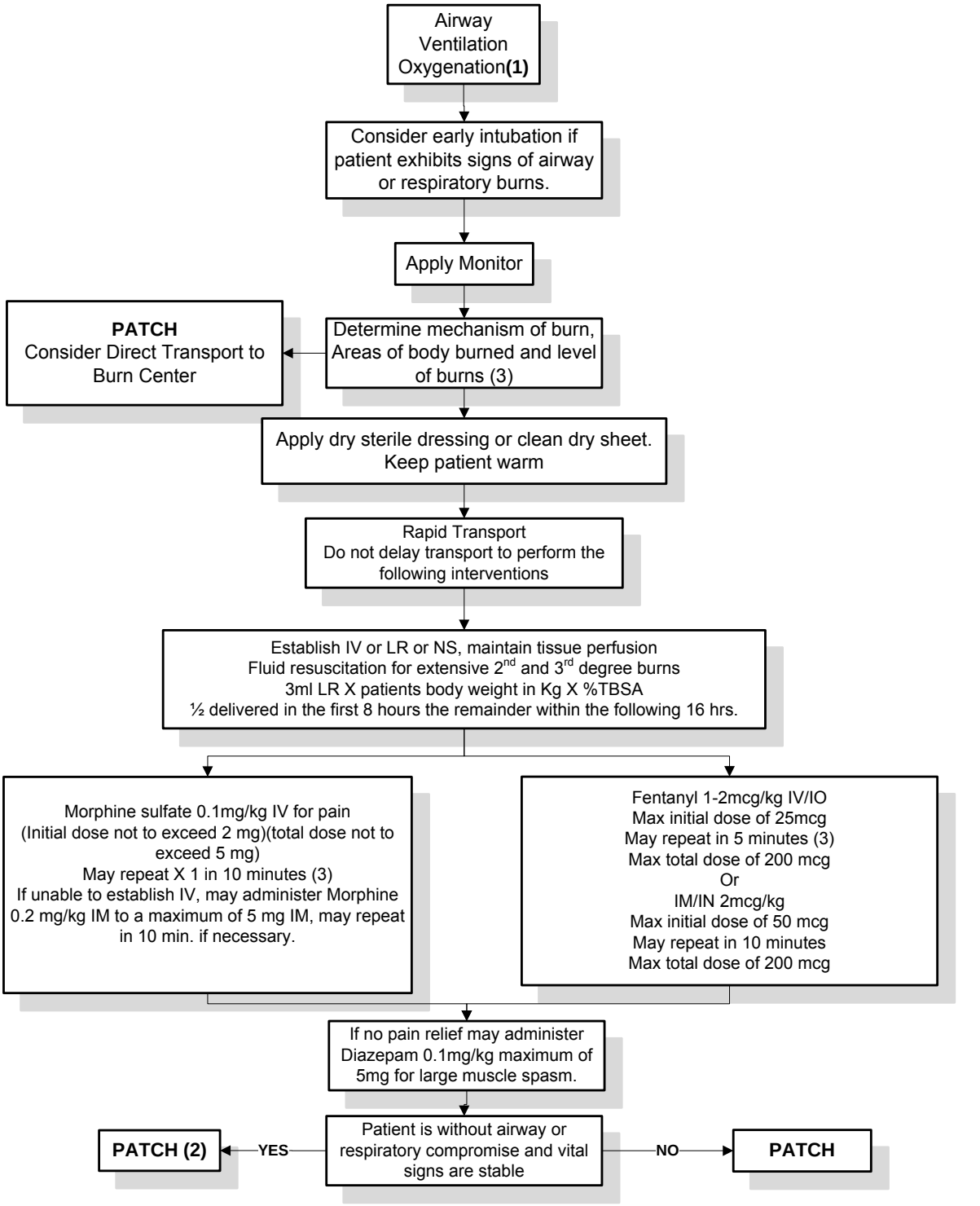
PEDIATRIC – SUBMERSION INCIDENT – CATEGORY 2

Applies to a patient presenting alert and oriented (may have a history of altered level of consciousness prior to arrival of the rescue unit) with spontaneous respirations and heart rate. **(1)**



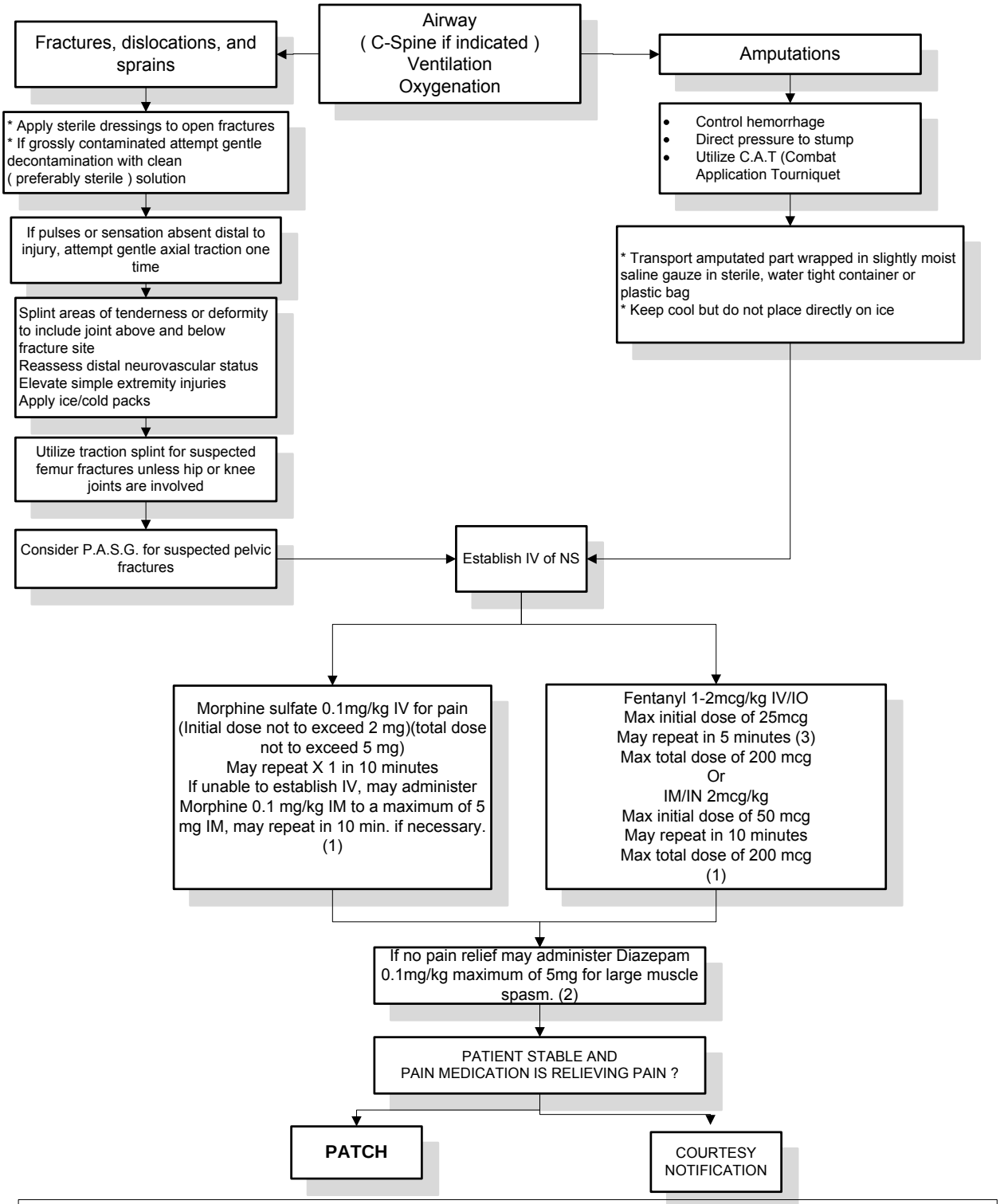
1) These children require further medical evaluation. Child should be transported via ALS (if available) ambulance to the closest emergency care facility.

PEDIATRIC TRAUMA - BURNS



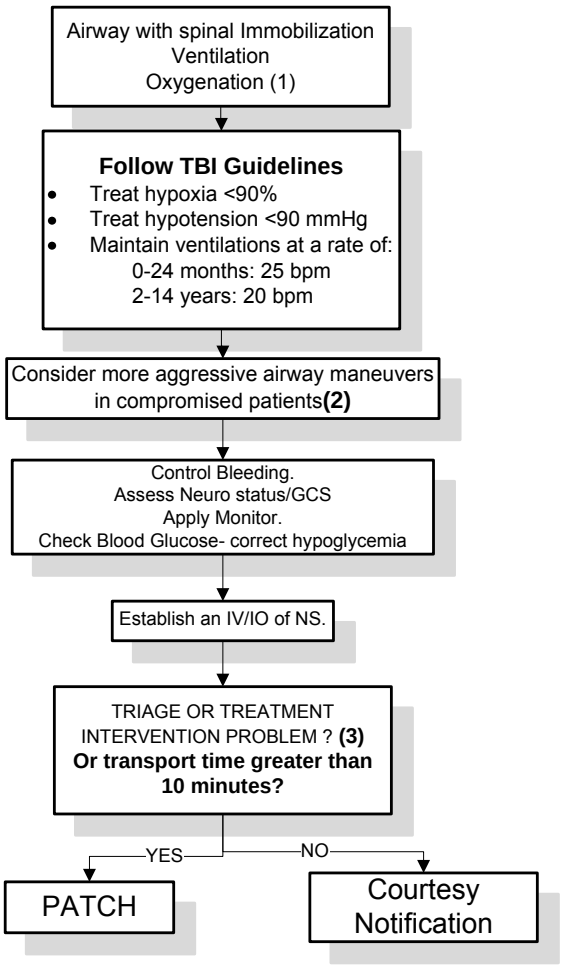
1) If patient or clothing still burning cool hot areas immediately. Flush chemical burns for 20 minutes.
2) Patch for pediatric patients with high voltage injuries for fluid resuscitation
3) Assess vital signs before and after each administration of Morphine and Fentanyl.

PEDIATRIC MUSCULOSKELETAL INJURY



1) Assess vital signs before and after each administration of Morphine and Fentanyl.

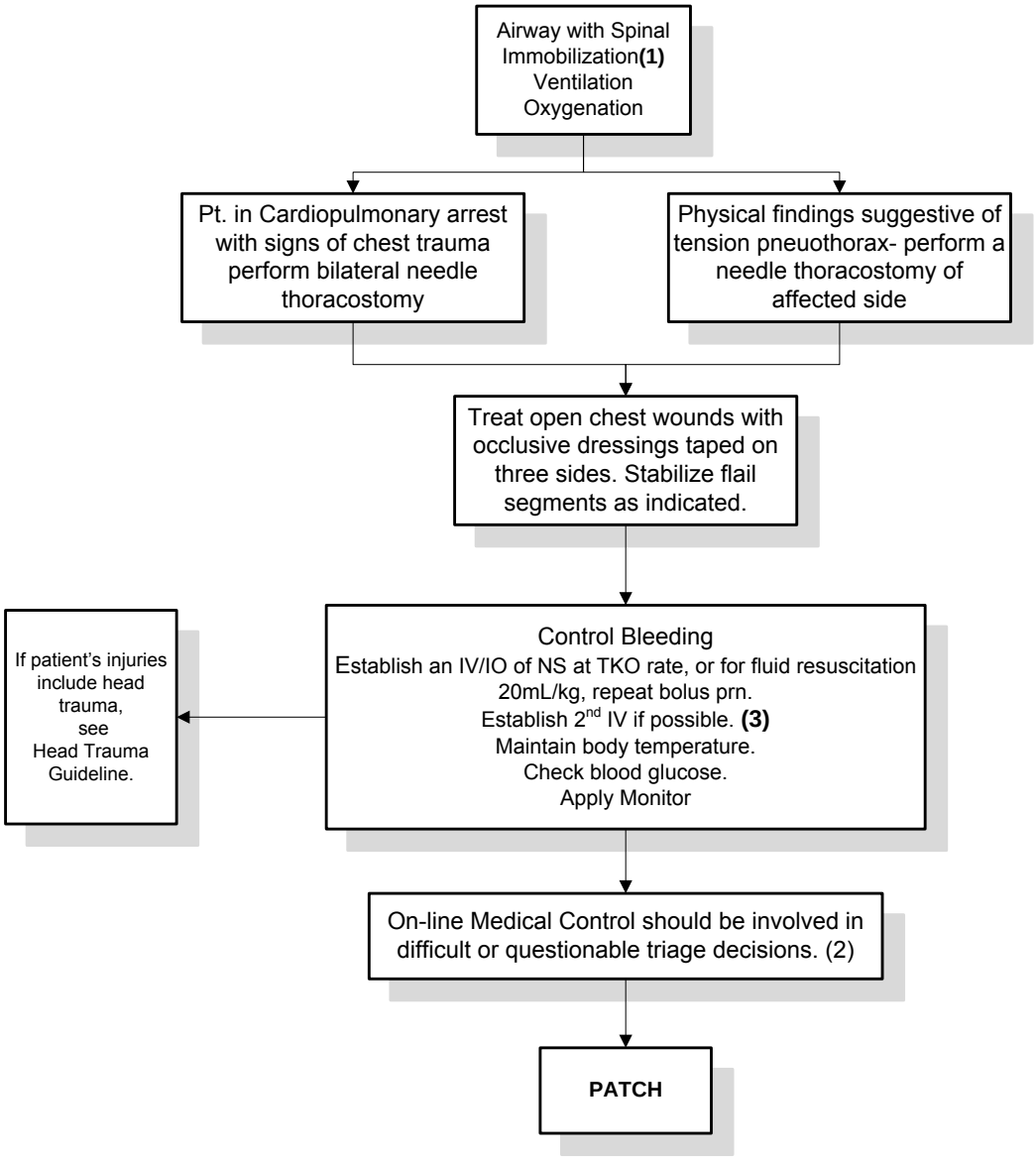
PEDIATRIC TRAUMA – HEAD INJURY WITH ALOC (1)



1) GCS less than 14 , consider Air Transport to Pediatric Neurological Center. Discuss with Patch MD
2) Minimize intubation attempts to reduce increased ICP.
3) On-line Medical Control should be involved in difficult or questionable triage decisions.

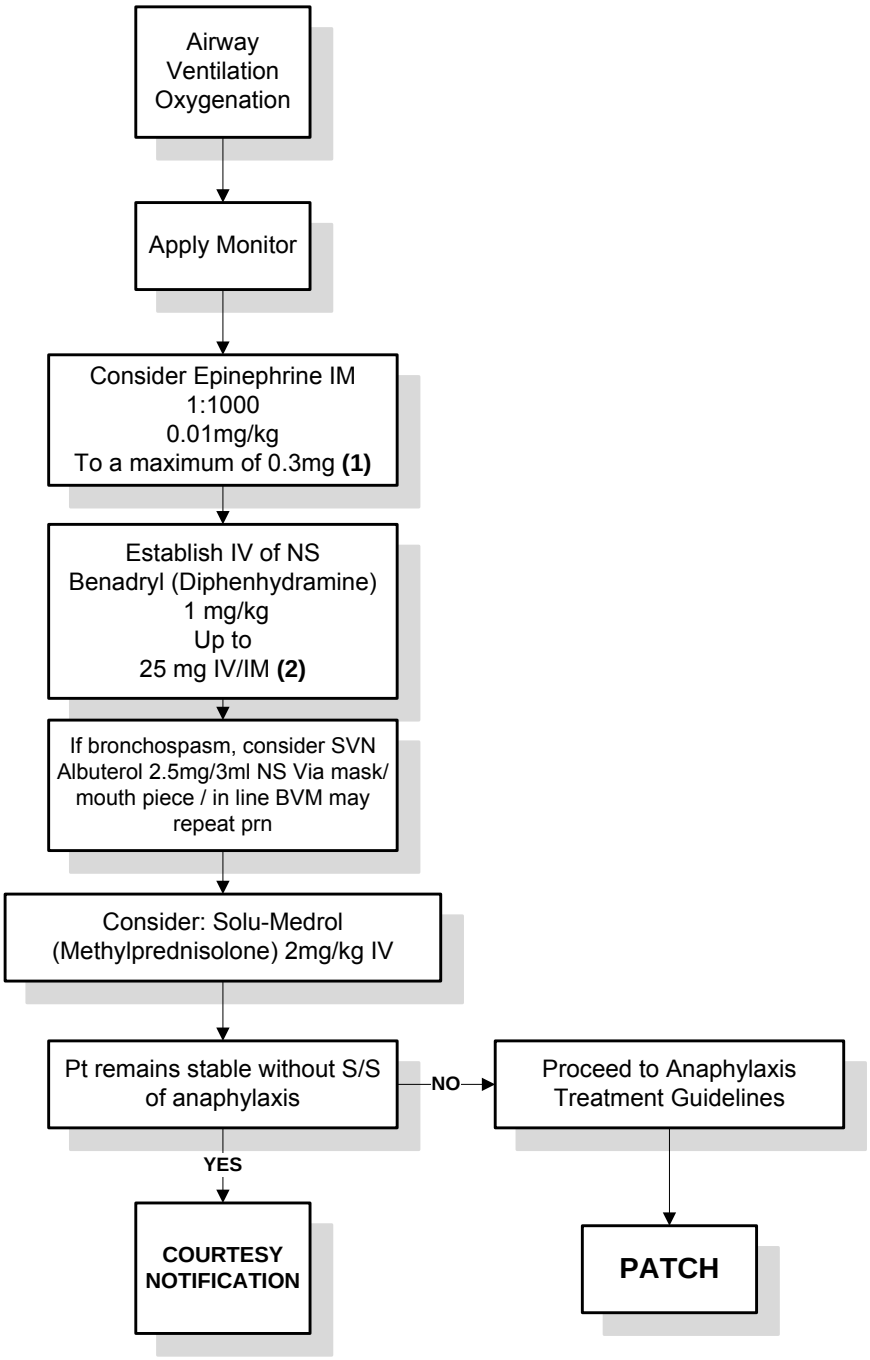
PEDIATRIC TRAUMA – MULTI – SYSTEM

Applies to patients presenting with S/S of Critical (Immediate) injury or patients in which the mechanism of injury is suspect for occult Critical injury.



1) OG/NG tube if child ventilated with BVM for > 2 minutes or obvious gastric distention.
2) The goal for time on scene is not to exceed ten (10) minutes for patient assessment, management and packaging unless extrication is required or unforeseen circumstances develop.
3) Careful consideration should be given to the amount of fluids infused in the field.

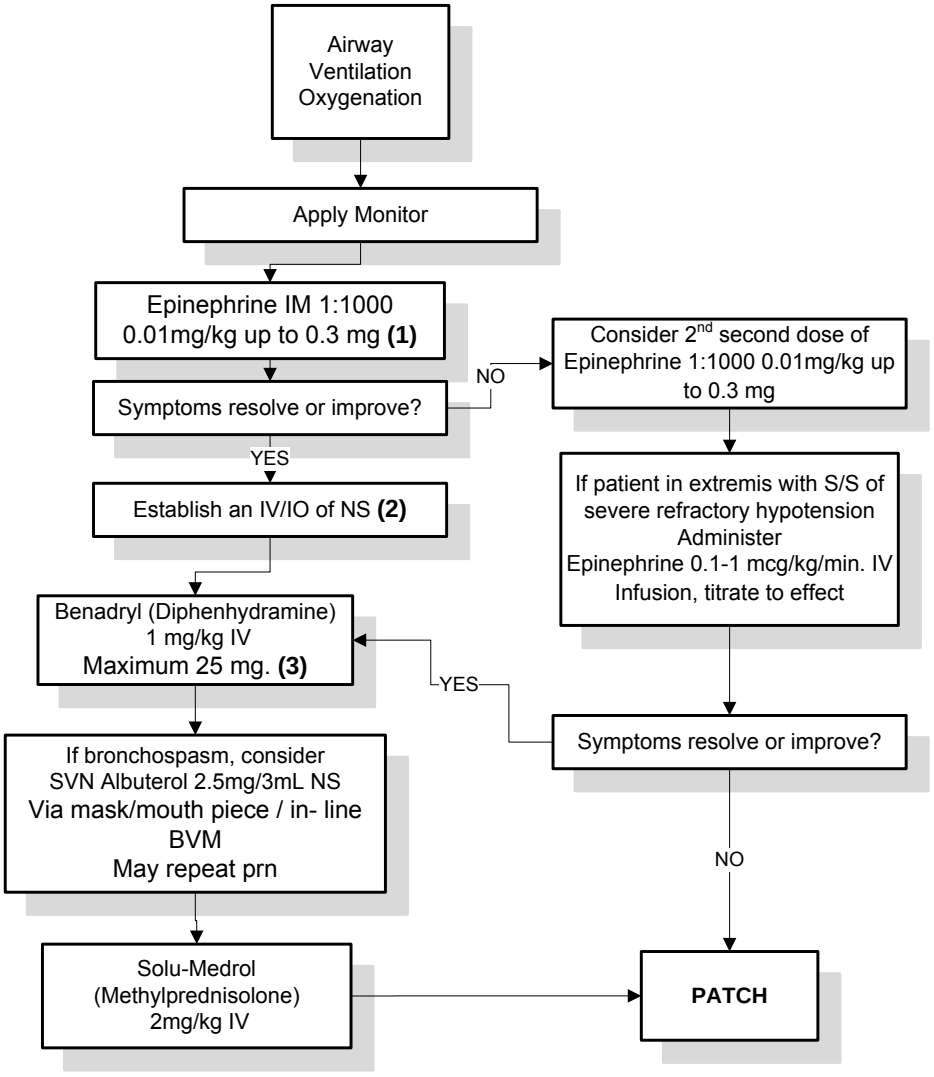
PEDIATRIC ALLERGIC REACTION



1) Consider acuity of onset of symptoms and history of prior anaphylactic reaction.
2) If IV cannot be established administer Benadryl (Diphenhydramine) 1 mg/kg up to 25 mg IM as soon as possible after Epinephrine IM.

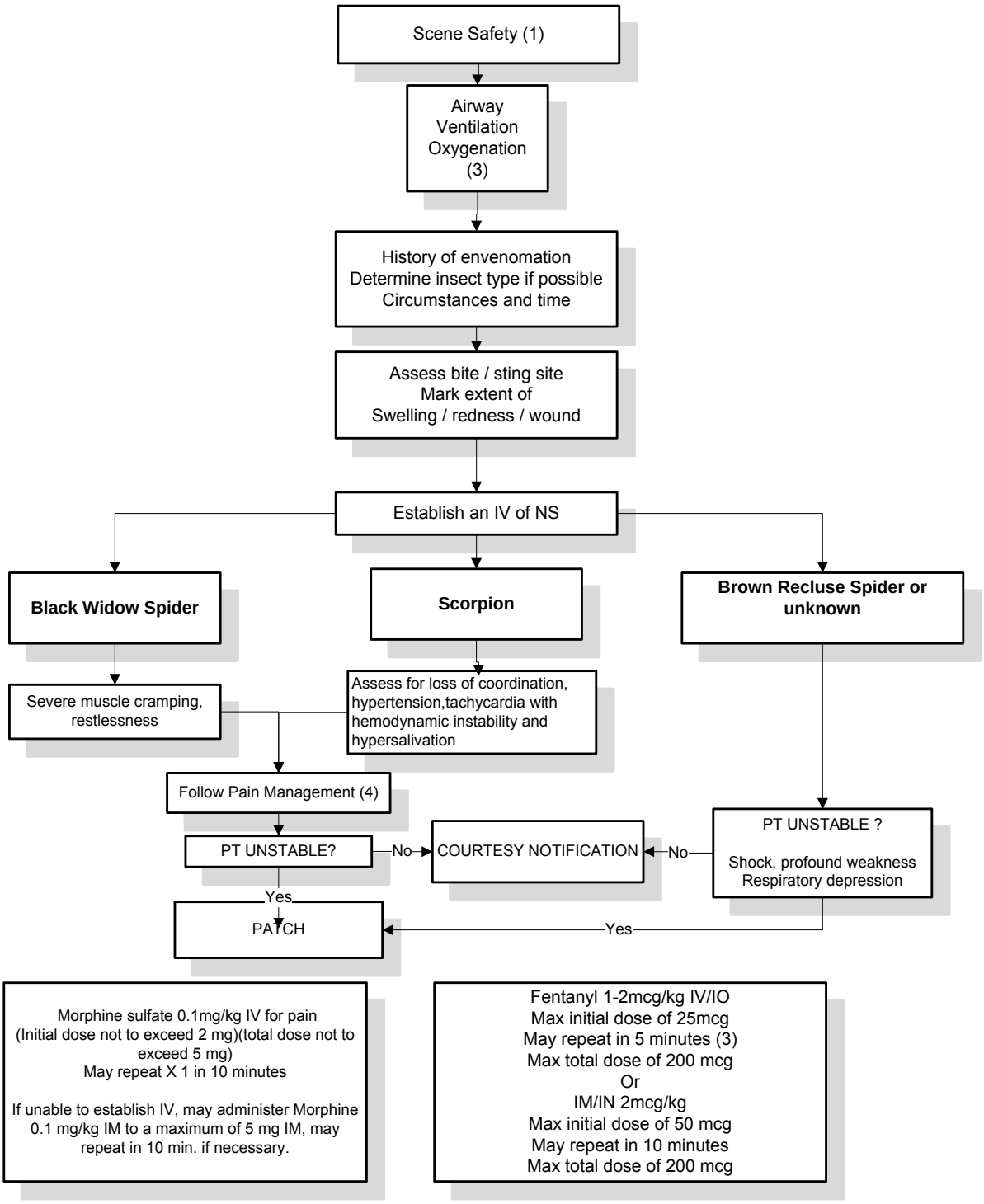
PEDIATRIC – ANAPHYLAXIS

Applies to patient presenting with allergic reaction and with signs and symptoms of airway, respiratory, or circulatory compromise (laryngeal edema, bronchospasm, or hypotension).



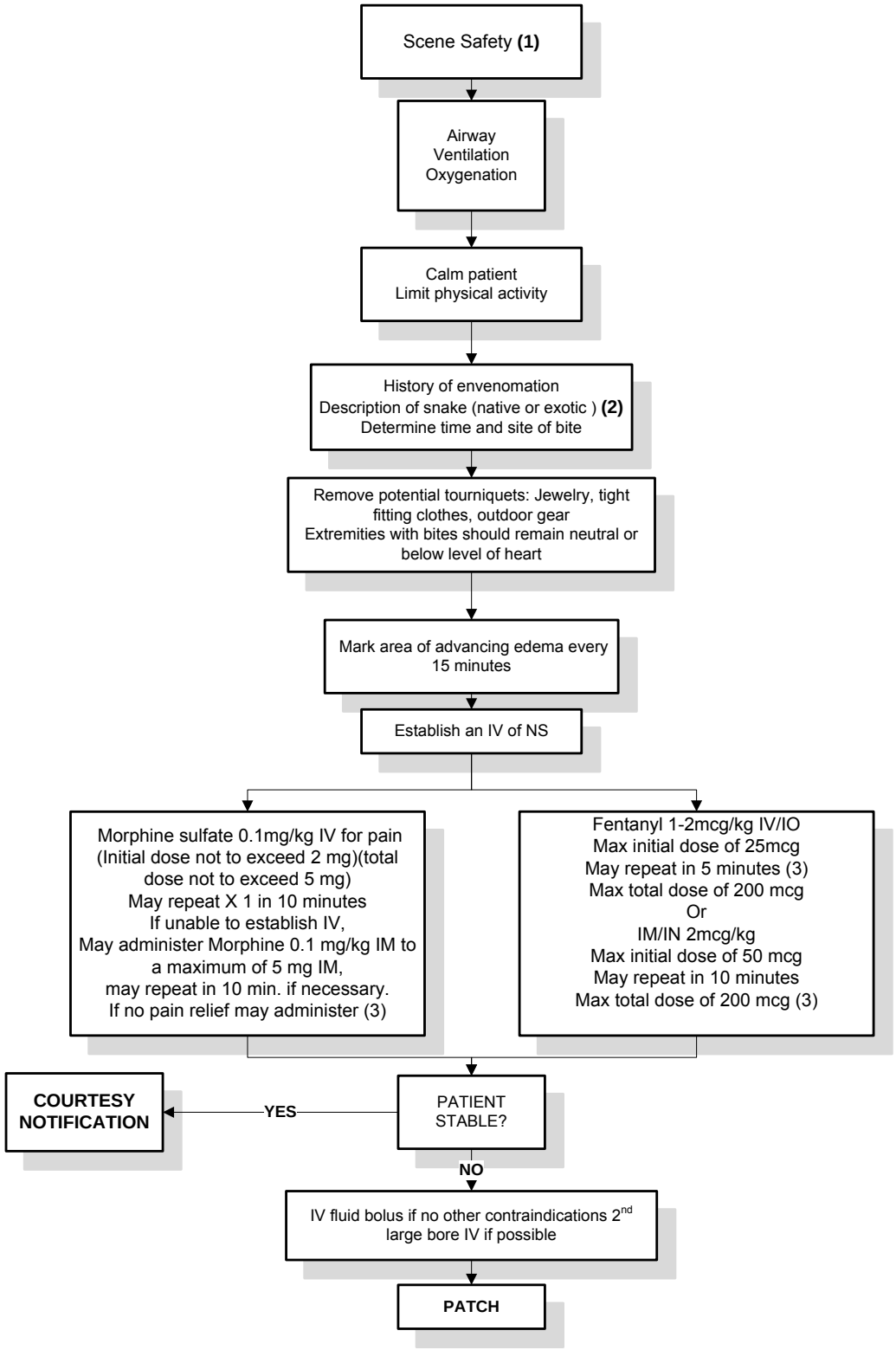
1) If prolonged transport, consider repeat Epinephrine every 10-15 minutes. Medical Control input should be obtained, if possible.
2) Establishment of an IV should not delay the administration of Epinephrine IM to a patient in extremis.
3) At any time an IV cannot be established, give Benadryl (Diphenhydramine) 1 mg/kg up to 25 mg IM as soon as possible after Epinephrine IM.

PEDIATRIC ENVENOMATION – ARACHNIDS



(1) Attempts to kill or capture insect or bring to ED are not recommended.
(2) Contact Medical Control to administer Valium (Diazepam) for severe pain / muscle spasm.
(3) Careful observation of respiratory status.
(4) Pain management for scorpion and black widow only. Reassess vitals and pain before and after each administration of Morphine and Fentanyl.

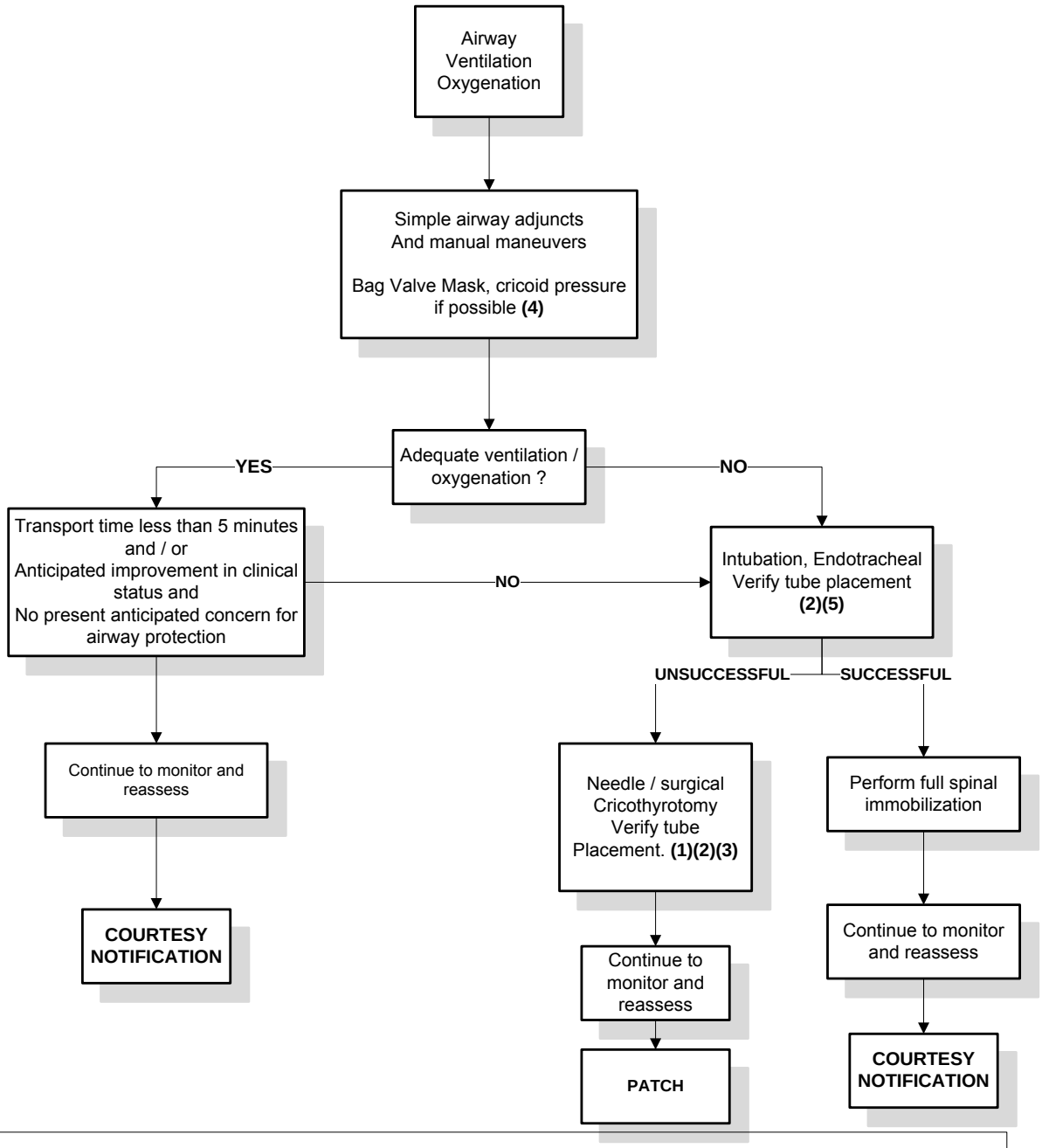
PEDIATRIC ENVENOMATION – SNAKE BITES



1) Attempts to kill or capture the snake or bring dead animal to ED are NOT recommended.
2) Many exotic snakes are neurotoxic so respiratory status must be monitored carefully.
3) Reasses vitals and pain after each dose of Morphine and Fentanyl.

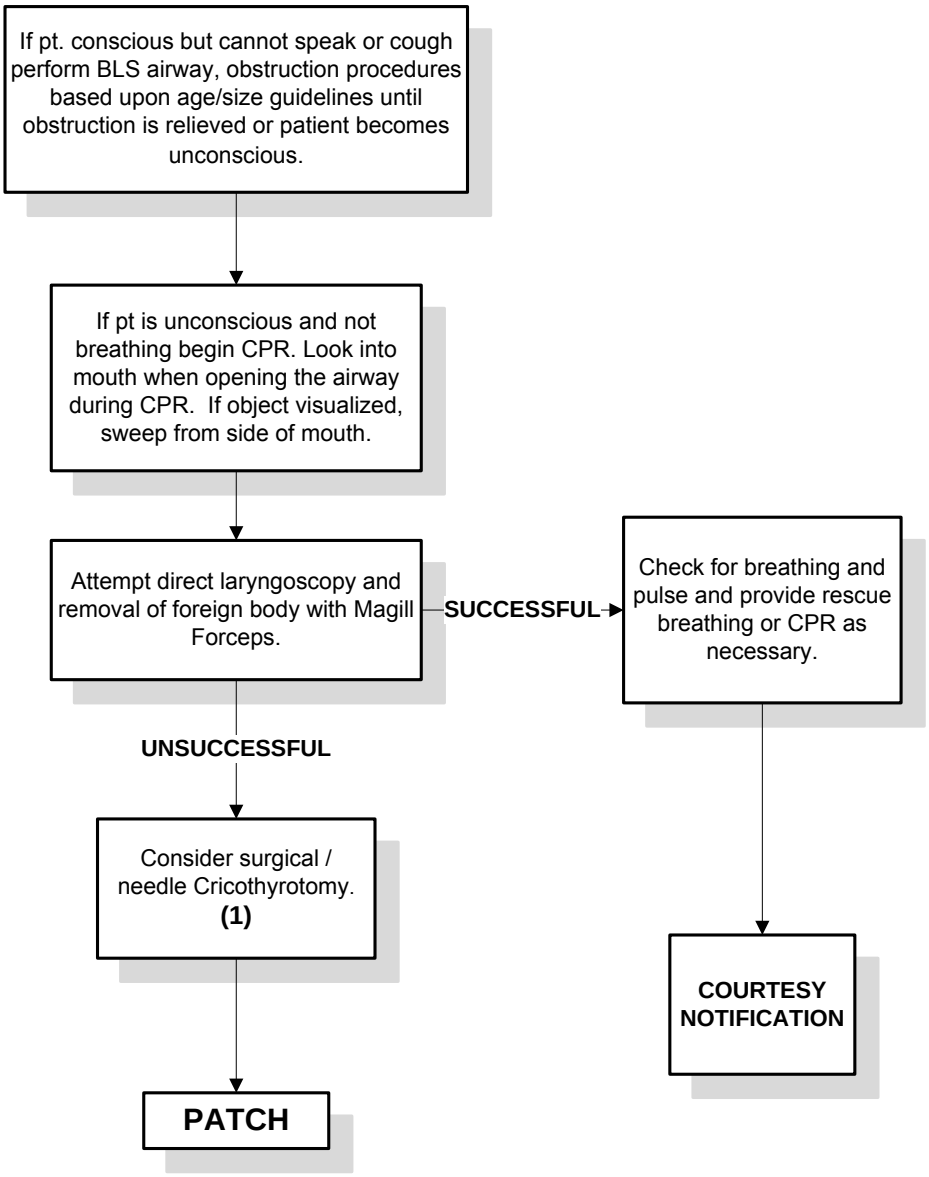
PEDIATRIC AIRWAY (1)

Airway Compromise



1) Medical Control contact is not mandatory, however, the medic is encouraged to discuss the situation with Medical Control if he/she is anticipating a Cricothyrotomy and the clinical situation is such that there is time for Medical Control contact.
2) Verify proper tube placement by visualization of the cords and the tube passing through, bulb tube check/air aspiration, technique > 5 years old or EtCO2 detector/monitor for all ages, chest wall rise, good breath sounds, absence of gastric sounds, and clinical improvement in patient.
3) Surgical Cricothyrotomy contraindicated in children < 8 years old. Needle Cricothyrotomy contraindicated in children <5 years old. Children <5 years of age after failed airway attempts require use of an approved supraglottic device.
4)OG/NG tube placement if child ventilated with BVM for greater than 2 minutes or obvious gastric distention. Patients with head injuries should only have OG tube insertion, NG tube insertion contraindicated.
(5) Place c-collar on patient to help prevent tube dislodgement

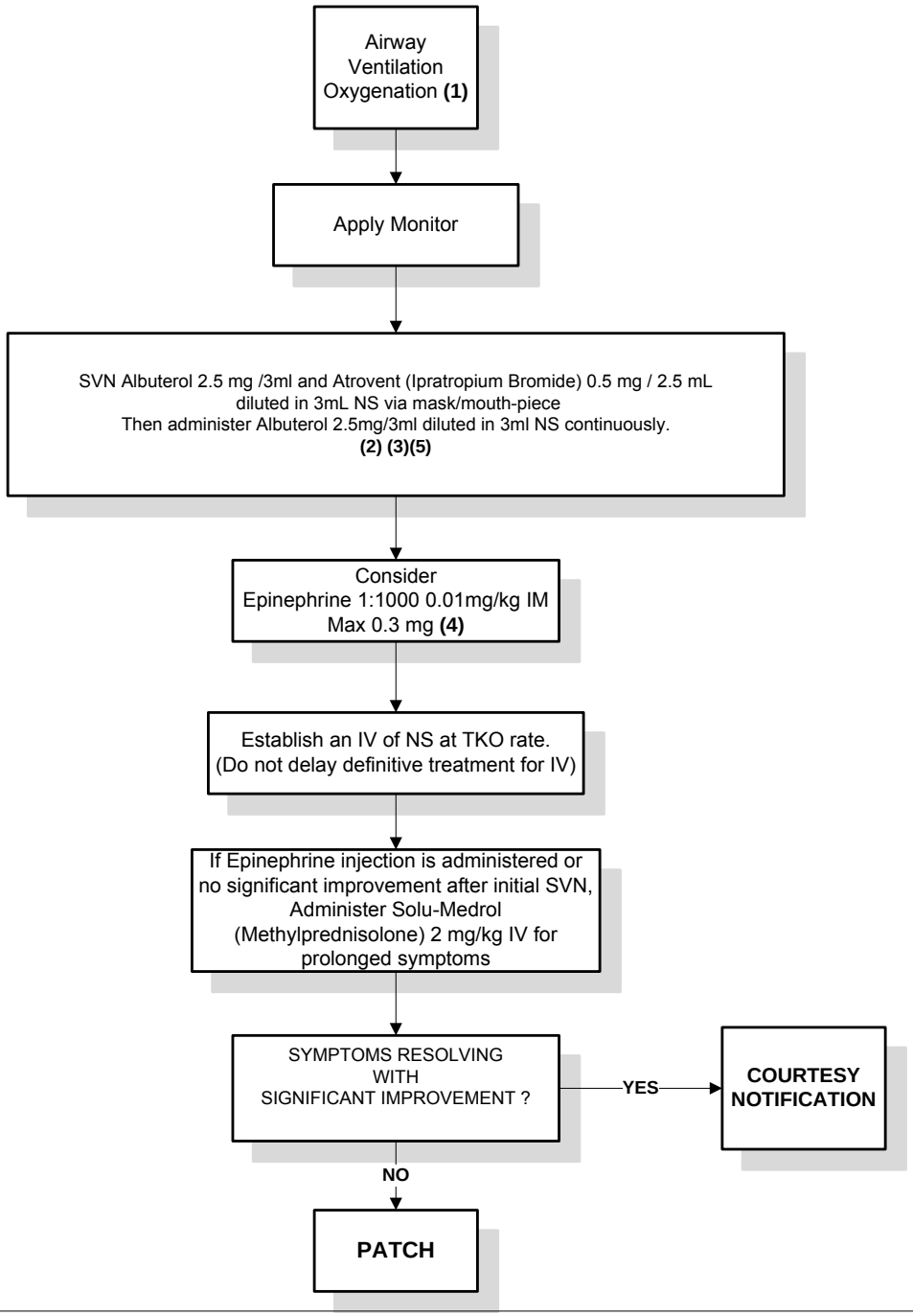
PEDIATRIC AIRWAY OBSTRUCTED



1) Verify proper tube placement by bulb tube check / air aspiration (if patient > 5 years old) or EtCO2 detector/monitor for all ages, chest wall rise, good breath sounds, absence of gastric sounds, and clinical improvement in patient. Surgical Cricothyrotomy is contraindicated in patients < 8 years old. Needle Cricothyrotomy contraindicated in children <5 years old. Children <5 years of age after failed airway attempts require use of an approved supraglottic device.

PEDIATRIC INSUFFICIENCY – BRONCHOSPASM

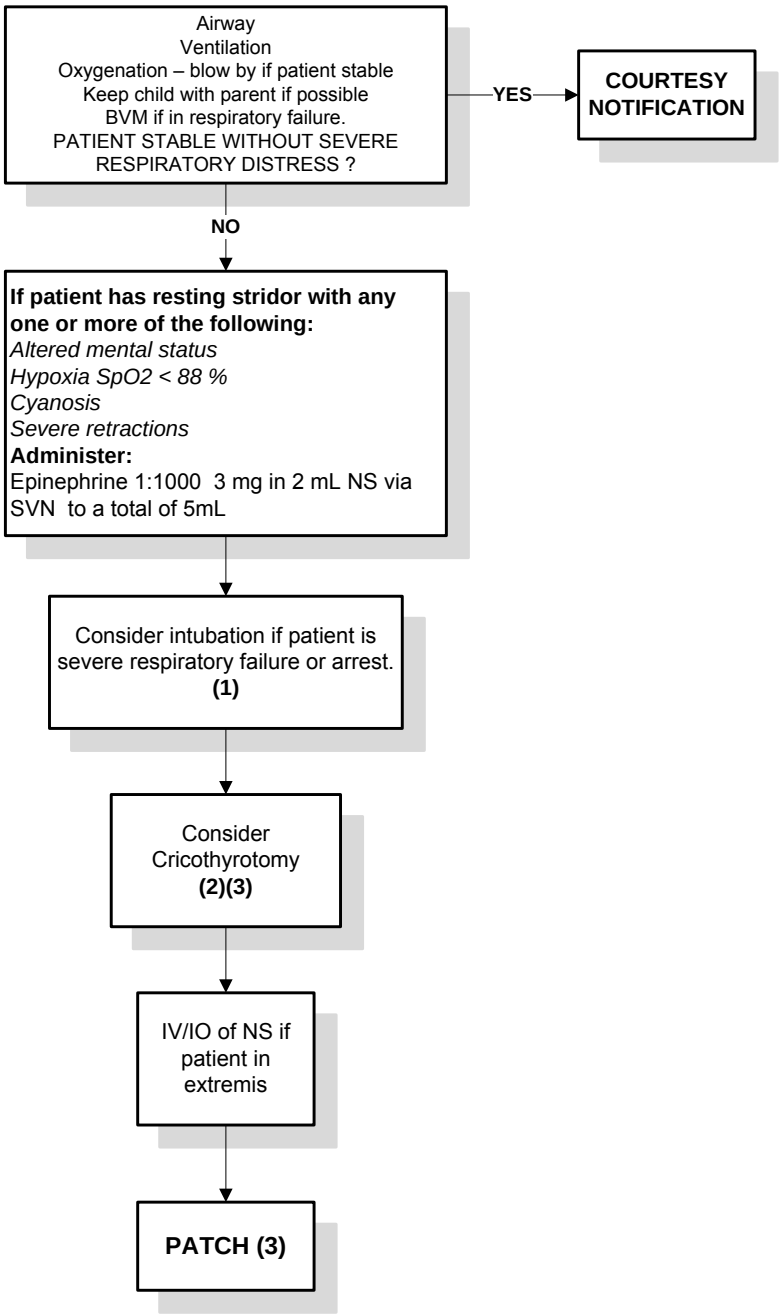
Applies to patients presenting with S/S of acute respiratory distress secondary to pre-existing condition or acute illness



1) Administer O2 at high flow rates to all patients in severe respiratory distress. This is especially true if pulse oximetry is not available.
2) Consider the use of SVN therapy via in line BVM system in patients who are tiring or are appearing to have decreased tidal volumes.
3) If patients weight is less than 10 Kg, reduce Atrovent (Ipratropium Bromide) dose to 0.25 mg in 1.25 mL NS (½ unit dose)
4) Consider Epinephrine use in patients with poor tidal volumes or poor response to SVN.
5) Atrovent (Ipratropium Bromide)is contraindicated with soy or nut allergy.

PEDIATRIC RESPIRATORY – UPPER AIRWAY EMERGENCIES

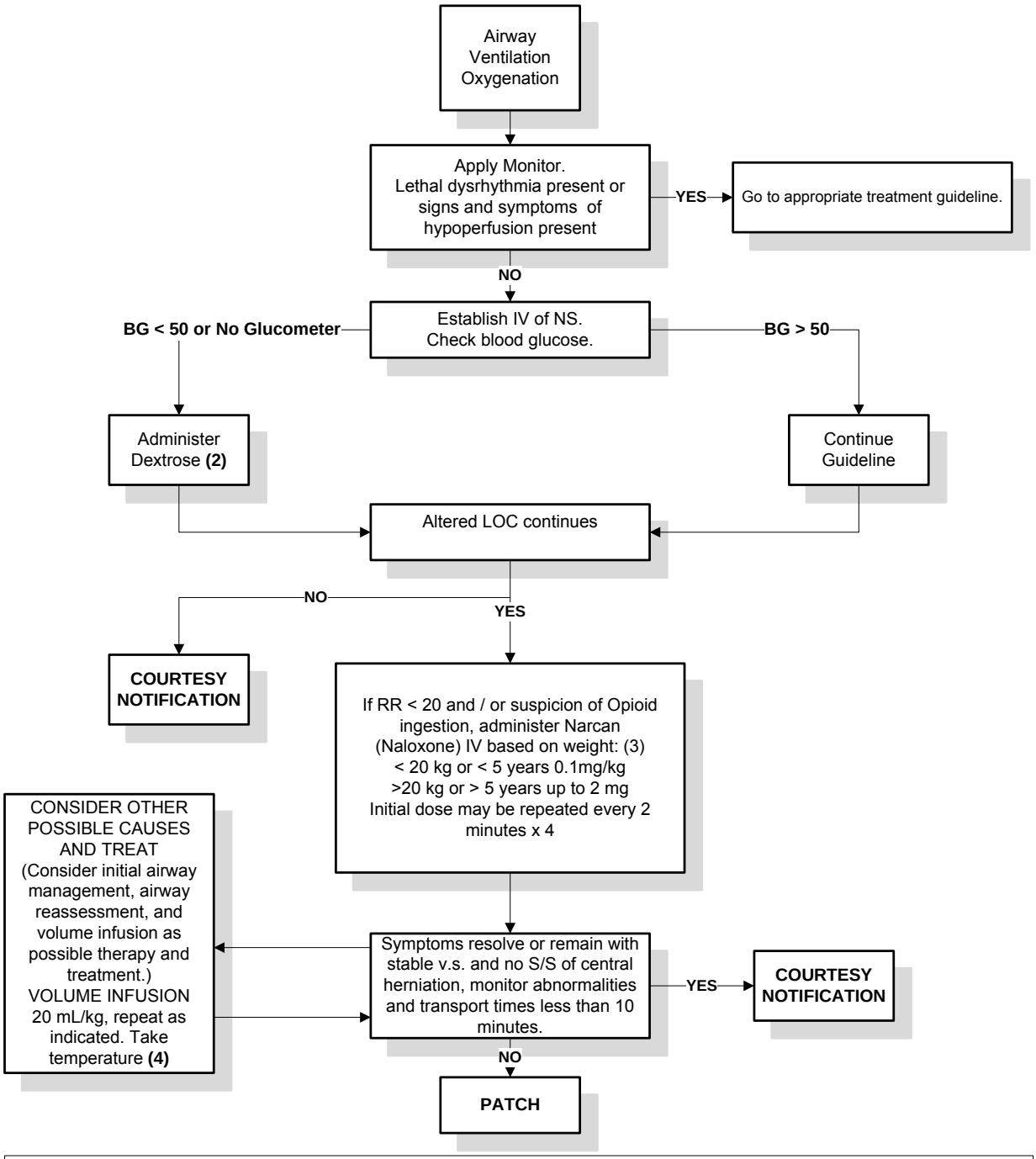
CROUP / EPIGLOTTIS



1) BVM with reservoir with 100% O2 is usually adequate to provide ventilation and oxygenation. If ventilation appears clinically inadequate or transport will be greater than 5 minutes, consider intubation.
2) Surgical Cricothyrotomy contraindicated in children < 8 years old. Needle Cricothyrotomy contraindicated in children <5 years old. Children <5 years of age after failed airway attempts require use of an approved supraglottic device.
3) Medical Control contact is not mandatory, however, the medic is encouraged to discuss the situation with Medical control if he/she is anticipating a Cricothyrotomy and the clinical situation is such that there is time for Medical Control contact.

PEDIATRIC ALTERED LEVEL OF CONSCIOUSNESS

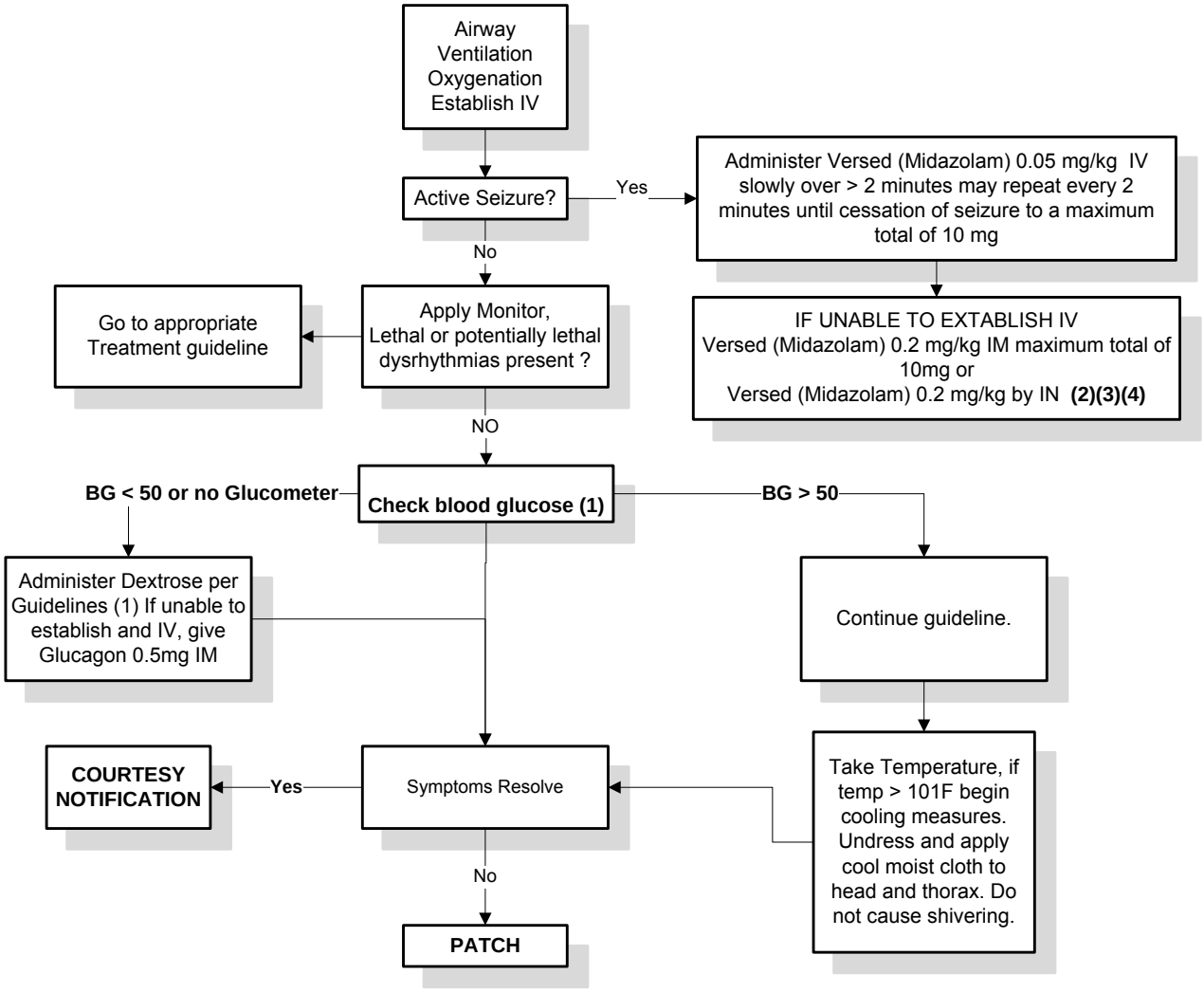
Altered level of consciousness and unconscious patient; includes GCS of 14 or less, psychotic or combative behavior, and the post seizure patient.



1) If opiate OD suspected BLS, management may be sufficient until response to Narcan (Naloxone) is determined.
2) Administer 0.5 – 1 Gm/kg of Dextrose. For neonates administer D_{10} 2 mL/kg. For children less than one year of age administer D_{10} 5-10mL/kg. For children 1-8 years of age, use D25 2-4 mL/kg. If unable to establish IV, give Glucagon 0.5 mg IM.
3) Infants and children < 20 kg or < 5 years receive 0.1mg/kg. Caution must be used in administration after birth to infants of addicted mothers, since it may precipitate abrupt narcotic withdrawal and seizures. Children older than 5 year or > 20 kg may be given up to 2.0 mg. Doses may be repeated at 2 minute intervals until narcotic reversal is achieved.
4) Possible causes/treatment could include: hypoxemia or acidosis (ventilate): hypovolemia (fluid bolus 20 mL/kg, repeat prn): tension pneumothorax (needle decompression): hyperthermia (cool patient): hypothermia (warm patient, monitor temperature): OD (examine scene): hypo/hyperglycemia (check blood glucose): postictal state (HPI/PMH)

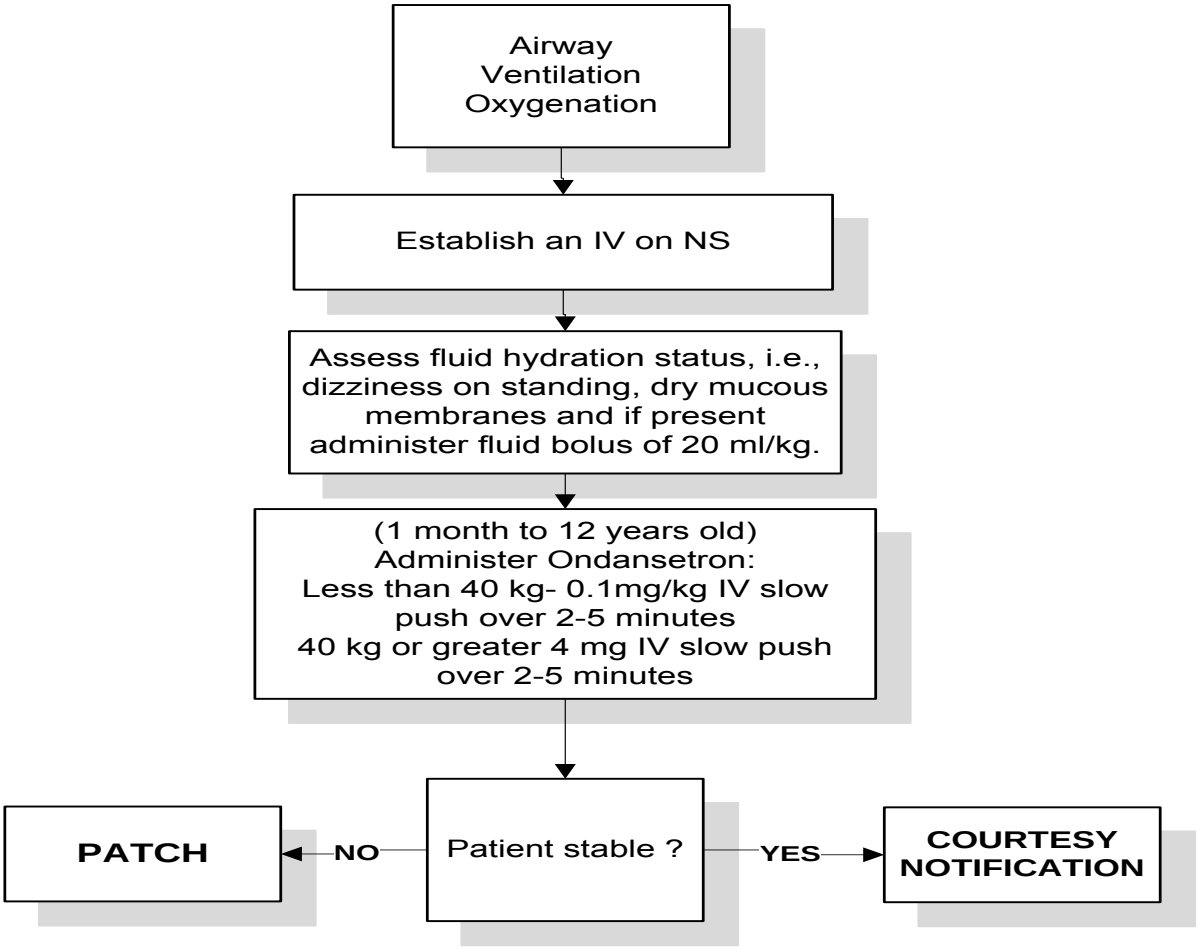
PEDIATRIC – SEIZURES OF UNKNOWN ETIOLOGY

Prolonged, Repetitive, or Status Epilepticus

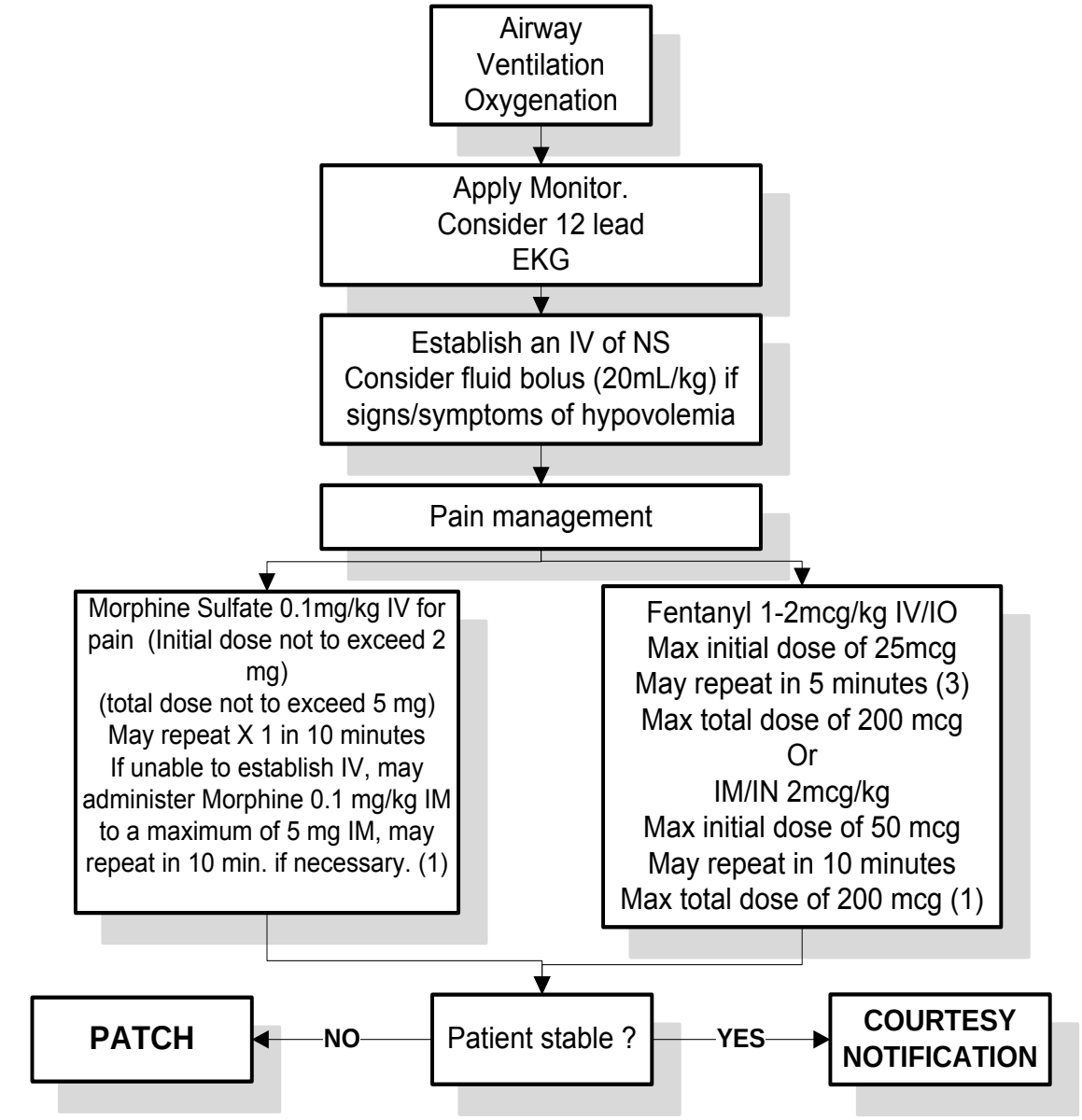


1) Administer 0.5 – 1 Gm/kg of Dextrose. For Neonates to one month old administer D10 2mL/kg. For children one month to one year of age administer D10 5-10mL/kg. For children 1-8 years of age, use D25 2-4 mL/kg. If unable to establish IV, give Glucagon 0.5 mg IM.
2) Do not administer Versed via the IN route if the patient's nose is bleeding or if nasal congestion or nasal discharge is present.
3) The only approved intranasal method of administering medications is with the Mucosal Atomizing Device (MAD)
4) If patient Prolonged, Repetitive, or Status Epilepticus Contact Medical control

PEDIATRIC NAUSEA AND VOMITING

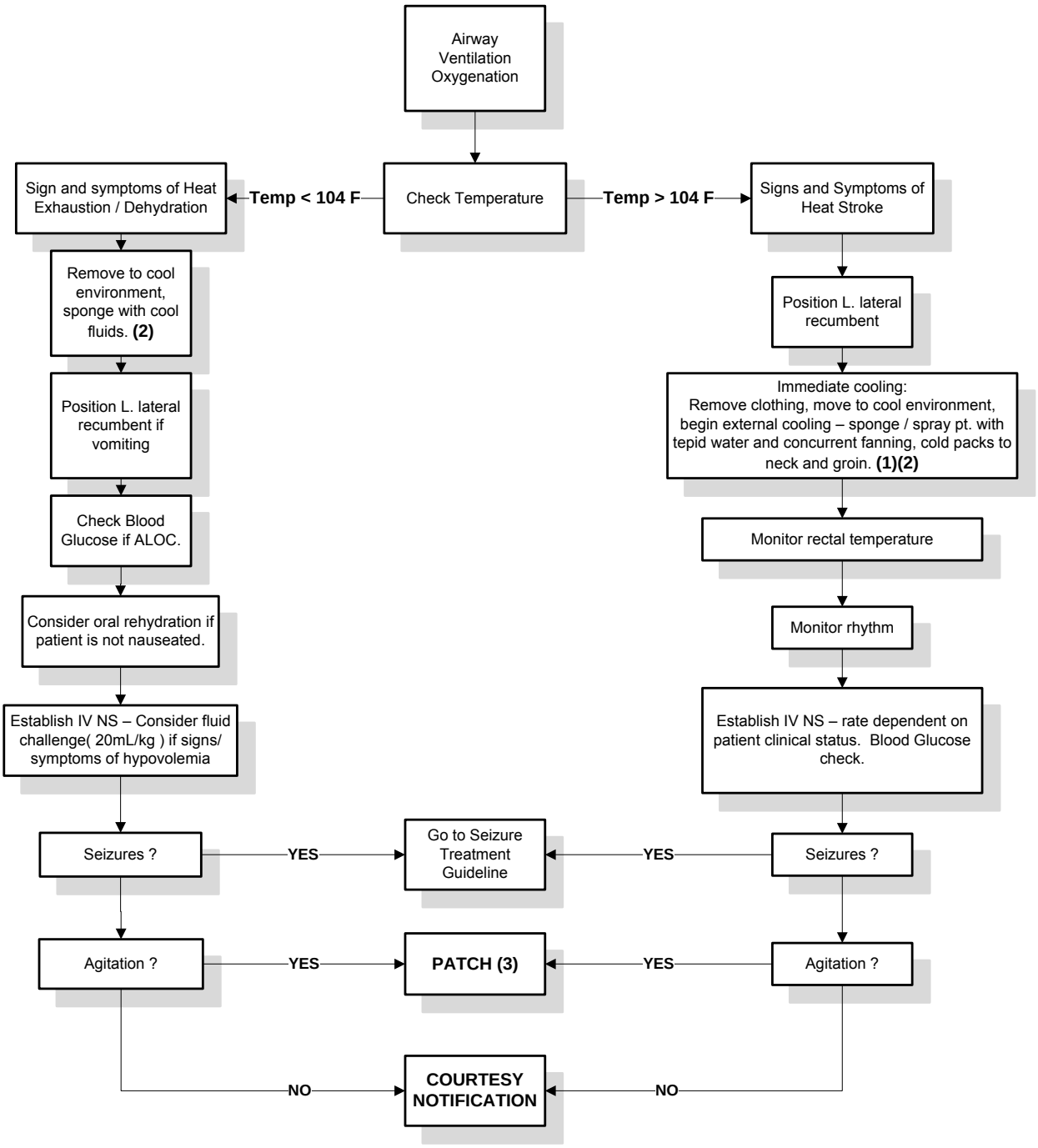


PEDIATRIC ABDOMINAL PAIN, NON TRAUMATIC



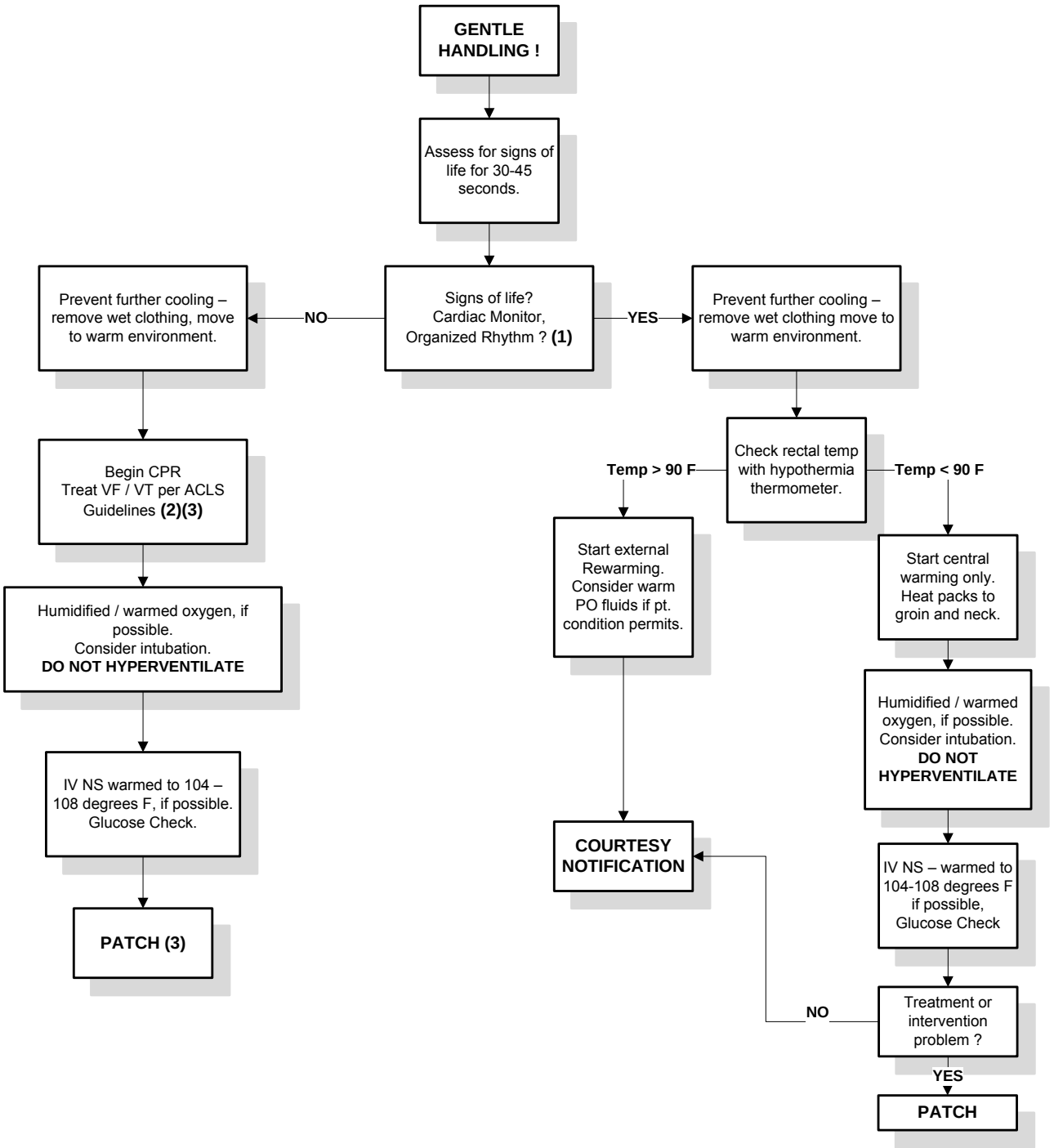
1) Reasses vitals and pain after each administration of Morphine and Fentanyl.

PEDIATRIC ENVIRONMENTAL – HEAT RELATED



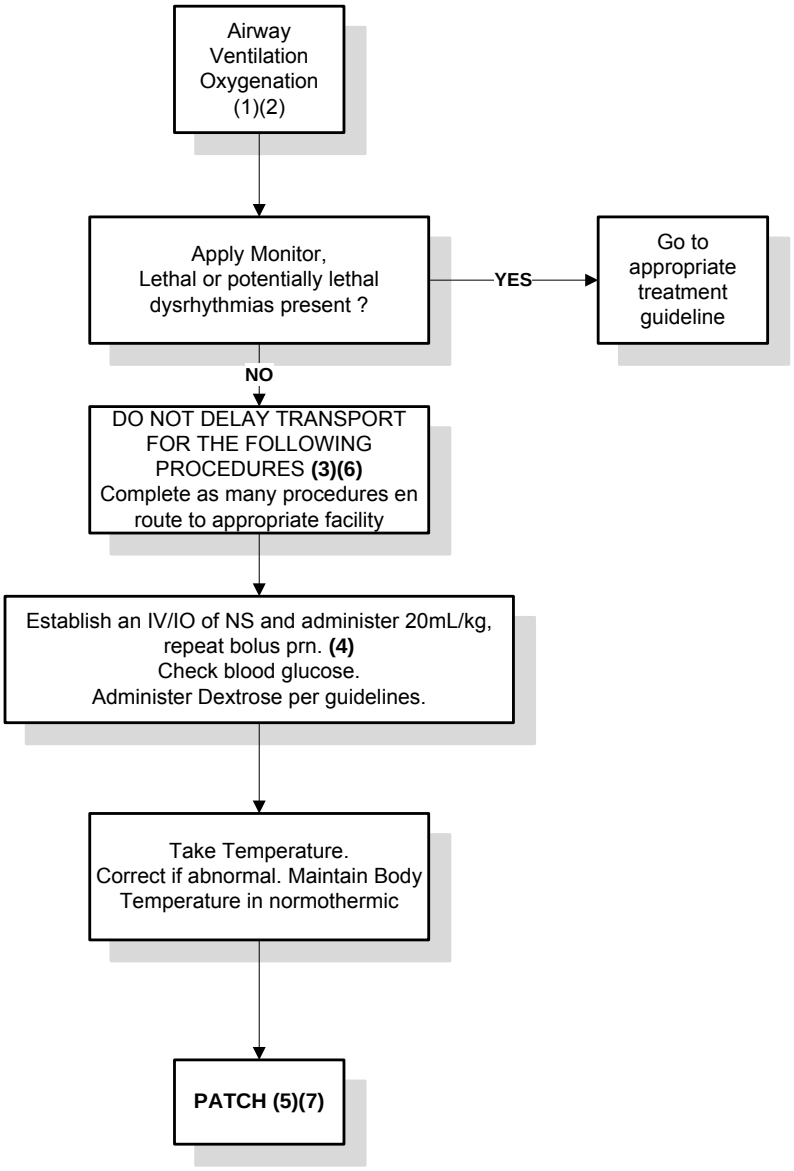
1) Do not cool below 102 degrees F.
2) Do not over cool and cause shivering and reoccurring heat buildup. If patient is shivering contact Medical Control to administer Midazolam or Diazepam.
3) If patient is agitated contact Medical Control to administer Midazolam or Diazepam.

PEDIATRIC ENVIRONMENTAL - HYPOTHERMIA



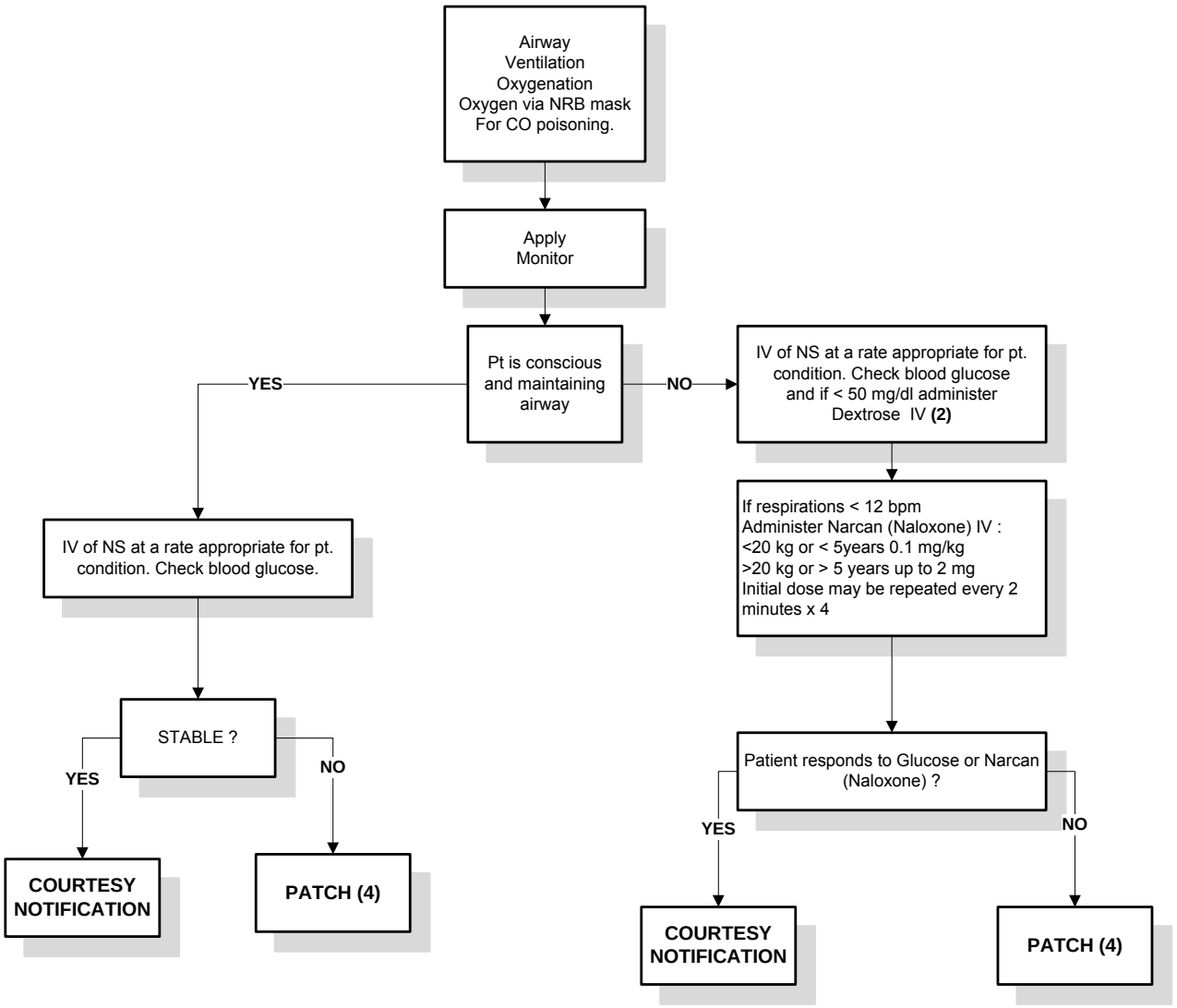
1) If there is an organized rhythm do not begin CPR unless directed by Medical Control.
2) **Utilize only 1 shock.**
3) Contact Medical Control for ACLS medication administration regimen. Consider withholding medications if core temperature is ≤ 86 degrees F and an extended time between doses if temperature is > 86 degrees F.

PEDIATRIC
HYPOTENSION / SHOCK, NON – TRAUMATIC
I-99 Skill/Medication limitation



1) BVM with reservoir with 100% O2 and cricoid pressure is usually adequate to provide ventilation and oxygenation. If ventilation appears clinically inadequate or transport will be greater than 5 minutes, consider intubation.
2) If airway managed with BVM for > 2 minutes, insert 10-16 Fr OG/NG tube. Gastric decompression allows adequate pulmonary tidal volumes.
3) Rapid transport is of the utmost importance. Advanced life support procedures should be attempted at the scene, but if unsuccessful with a short period of time, the patient should be transported to the nearest appropriate facility without further delay.
4) Repeat assessment and lung auscultation before and after each fluid bolus.
5) If patient continues to be hypotensive, contact Medical Control to administer Dopamine 5-20 mcg/kg/min **(7)** and/or Epinephrine infusion 0.1-1 mcg/kg/min.
6) Assess patient and patient symptoms to suggest cause and treat cause.
7) Not in I-99 Scope of practice

PEDIATRIC POISONING / OVERDOSE (1)(3)



1) Patients who are suspected or known to have ingested substances with a suicidal intent may not refuse transport.
2) Administer 0.5 – 1 Gm/kg of Dextrose. For neonates administer D 10 2 mL/kg. For children less than one year of age administer D 10 5-10 mL/kg. For children 1-8 years of age, use D 25 2-4 mL/kg. If unable to establish IV, give Glucagon 0.5 mg IM.
3) Bring bottles / containers if possible. INSPECT SCENE.
4) Consider Medical Control input for Sodium Bicarbonate 1-2 mEq/kg for TCA overdose, Calcium Chloride 0.2 mL/kg very slow for calcium channel blocker overdose, Atropine 0.05 mg/kg every 2-4 min. for organophosphate exposure.

APPENDIX A
PEDIATRIC/NEONATAL STANDARDS/PHARMACOLOGICAL MODALITIES

PEDIATRIC/NEONATAL VITALS

AGE	HEART RATE/MIN	RESPIRATORY RATE/MIN
Newborn	120 (70-180)	30 (30-60)
1 - 2 Years	120 (80-180)	27 (26-34)
2 - 4 Years	110 (80-140)	24 (20-30)
4 - 8 Years	100 (80-120)	22 (18-26)
8 - 12 Years	90 (70-110)	22 (15-24)

BLOOD PRESSURE

(* Never inflate over 200 mmHg.)

(* A convenient formula is: 2 X age in years + 70 = Systolic)

WEIGHT

(* A convenient formula is: 8 + {2 X age in years} = Weight in kilograms)

ENDOTRACHEAL TUBE

(* A convenient formula is: $\frac{16 + \text{age in years}}{4}$ = ET tube size

PEDIATRIC LEVELS FOR DEFIBRILLATION

Defibrillation energy level (2 joules/kg, double if unsuccessful)
Cardioversion energy level (0.5-1 joule/kg)

PEDIATRIC PHARMACOLOGICAL MODALITIES

Establishment of a pediatric IV line is frequently difficult or non-feasible in the field situation. Consider IO if situation dictates.

Dosages shown below are only to provide a standard. Actual dosage ordered by the responsible physician may be different.

Pediatric Age Clarification: VVMC Base Hospital will define the age to begin utilizing adult treatment guidelines as 14 years. In the case of the patient in cardiopulmonary arrest when the age is not known the AHA recommendation of using the presence of secondary sex characteristics as the determining factor of when to use guidelines is acceptable.

PEDIATRIC
DRUG ADMINISTRATION & PRECAUTIONS

ADENOSINE	0.1 mg-0.2 mg/kg Rapid IV Push followed immediately by 2-3 mL NS. Monitor rhythm.
AMIODARONE	**VF/Pulseless VT** 5 mg/kg IV/IO (max 300mg single dose over 20 minutes may repeat every 5 min x 2 **SVT** 5 mg/kg IV/IO (max 150 mg single dose) over 20 minutes may repeat every 20 minutes x2 Mix Amiodarone only with D5W, max. dose is 15 mg/kg/day
AMIODARONE DRIP	1 MG/MIN FOR 6 HOURS, THEN 0.5 MG/MIN FOR UP TO 18 HOURS, MAXIMUM DAILY DOSE IS 15 MG/KG/DAY. Mix 450 mg in 250 ml D5W (special polyolefin bag) and run at 33.3 ml/hr for 1mg/min or 16.7 ml/hr for 0.5 mg/mi
ATROPINE	0.02 mg/kg IV/IO may repeat after 5 min. Min.: 0.1 mg Max: 0.5 mg child 1 mg adolescent
CALCIUM CHLORIDE	20 mg/kg IV/IO slowly over 10 min.
DEXTROSE 50%	(Peds) 0.5-1 Gm/kg diluted to D25W (Neonates) 0.1-0.2 Gm/kg diluted to D10W Slow IV/IO
DIAZEPAM	0.1-0.2 mg/kg IV/IO or 0.5 mg/kg rectal to a total of 20 mg
DIPHENHYDRAMINE	1 mg/kg IV/IO/IM
DOPAMINE	2-20 mcg/kg/min. IV/IO Titrate to effect
EPINEPHRINE 1:1000 (anaphylaxis/bronchospasm)	0.01 mg/kg IM Max 0.3 mg IM/SC
IV EPINEPHRINE 1:10,000 (anaphylaxis)	0.01 mg/kg IV/IO Max single 0.5 mg, Titrate drip to effect
EPINEPHRINE 1:10000 (cardiac)	0.01 mg/kg IV/IO may repeat every 3-5 minutes
EPINEPHRINE	0.1-1 mcg/kg/min. IV/IO Titrate to

DRIP	effect. For major cardiac events. Mix 4 mg 1:1000 in 250 mL NS for a 16 mcg/mL concentration
FENTANYL	1-2mcg/kg IV/IO. Max initial dose of 25mcg May repeat in 5 minutes. Max total dose of 200 mcg or 2mcg/kg IM/IN Max initial dose of 50 mcg May repeat in 10 minutes Max total dose of 200 mcg
FUROSEMIDE	1 mg/kg IV/IO, Push slowly.
GLUCAGON	0.5 mg IM
LIDOCAINE	1 mg/kg IV/IO
LIDOCAINE DRIP	20-50 mcg/kg/min IV/IO When using 2 Gm/500 mL premix the concentration is 4000 mcg/mL
METHYLPREDNISOLONE	1-2 mg/kg IV/IO
MIDAZOLAM	0.05-0.1 mg/kg IV/IO Slowly over > 2 min may repeat every 2 min to a total of 10 mg 0.2 mg/kg IM to a total of 10 mg/0.2 mg/kg IN to a total of 10 mg
MORPHINE	0.1 mg/kg IV/IO/IM max dose 5 mg
NALOXONE	0.1 mg/kg SC/IV/IO If >5 yrs old or >20 kg 2 mg
SODIUM BICARBONATE	1 mEq/kg IV/IO Always dilute with sterile water or D5W 1:1 for infants up to 3 mos. Give slowly
SVN:	
ALBUTEROL/ IPRATROPIUM	2.5 mg/3 mL NS 0.02% 0.5 mg/2.5 mL NS, if < 10 Kg give half dose May repeat as necessary
	IV SOLUTIONS:
RINGERS LACTATE	20 mL/kg IV/IO Requires medical control input DO NOT USE on diabetic acidosis or hypothermia.
NORMAL SALINE	20 mL/kg IV/IO

APPENDIX B
ADULT PHARMACOLOGICAL MODALITIES

Drug dosages listed on this page are intended as a general guideline for the usual dosages used in most situations. Expect to find variations from these standards.

ADENOSINE	6 mg IV/IO Rapid Push with 20 mL NS flush, may repeat in 1-2 min @ 12 mg x two repeats
ALBUTEROL SULFATE-SVN	2.5 mg/3 mL NS Unit Dose may repeat as necessary
AMIODARONE	**VF/Pulseless VT** 300 mg IV/IO push over 30-60 seconds, may repeat in 3-5 minutes with 150 mg once. **Wide-complex Tachycardia, AFib, Aflutter, SVT** 150 mg IV over 10 minutes (mix in 50 ml bag of D5W) may repeat every 10 minutes.
AMIODARONE DRIP	1 mg/min for 6 hours, then0.5 mg/min for up to 18 hours. Maximum daily dose is 2.2 Mix 450 mg in 250 ml D5W (special polyolefin bag) and run at 33.3 ml/hr for 1mg/min or 16.7 ml/hr for 0.5 mg/mi
ASA, BABY 81 mg	4 chewable
ATROPINE - bradycardia asystole organophosphate poisoning	0.5 mg IV/IO, repeat every 5 min. to max of 3 mg 1 mg IV/IO 2 mg IV/IO repeat every 2-3 min prn titrate to atropinization
BUMEX	0.5 to 1.0 mg IV slowly over 1 to 2 min. or IM
CALCIUM CHLORIDE	20 mg/kg of 10% Solution IV/IO for hyperkalemia and Ca Channel Blocker OD
CHARCOAL ACTIVATED	50 Gms
DEXTROSE 50%	25 Gms IV/IO Slow push
DIAZEPAM	2-10 mg Slow IV/IO. Titrate to effect.
DILTIAZEM	0.25 mg/kg IV slowly over 2 minutes, may repeat at 0.35 mg/kg in 15 minutes.
DIPHENHYDRAMINE	25-50 mg Slow IV/IM
DOPAMINE	5-20 mcg/kg/min IV/IO Drip
EPINEPHRINE 1:1000	0.1-0.3 mg IM

EPINEPHRINE DRIP	4 mg of 1:1000 Sol/250 mL D5W (16 mcg/mL concentration) **Initial dose 1 mcg/min.** Titrate to effect.
EPINEPHRINE 1:10,000	1 mg IV/IO
ETOMIDATE (SFD only)	0.3 mg/kg rapid IVP
FENTANYL	50mcg IV/IO slow push. May repeat every 5 minutes at a range of 25-50 mcg IV/IO. Max dose of 200mcg. IM 50 mcg may repeat in 10 minutes.
FUROSEMIDE	20 mg-80 mg IV/IO Slowly
GLUCAGON	1 mg IM - effect in 15-20 min
IPRATROPIUM-SVN	0.5 mg/2.5 mL NS Unit Dose, use with albuterol in first SVN only
LIDOCAINE	1 mg/kg IV/IO- Repeat 0.5 mg/kg every 5-10 min up to 3 mg/kg Cardiopulmonary arrest- 1.5 mg/kg repeat 0.75 mg/kg every 3-5 min. to 3 mg/kg
LIDOCAINE DRIP	2-4 mg/min IV/IO Drip
MAGNESIUM SULFATE	1-2 Gms in 50-100 mL D5W IV/IO over 2 min. (VF/pulseless VT - Give IV Push) GH- 4 GM bolus in 100 ml NS over 15 minutes then 1 –4 Gm/hr continuous infusion, Mix 4 Gm/100mL NS.
METHYLPREDNISOLONE	125 mg IV/IO
MIDAZOLAM	
Seizures	0.2 mg/kg IM or IN to a max of 10 mg 2.5 mg SIVP every 2 min until seizure resolves max of 10 mg
Agitated	5 mg IM or IN age < 60 2.5 mg IM or IN age >60 2.5 -5 mg SIVP age < 60 1-3 mg SIVP age >60
Induction agent for intubation (SFD only)	0.1 mg/kg rapid IVP
Maintenance dose post intubation	5 mg SIVP/PRN

MORPHINE SULFATE	2-6mg IV/IM Slow IV push Initial dose max 2mg May repeat in 5 minutes for pain Max dose 20mg
NALOXONE	2 mg SC/IV every 3 min PRN
NITROGLYCERIN	0.4 mg (1/150) SL every 5 min X 3 if Systolic B/P > 100
ONDANSETRON	4 mg slow IVP may repeat x 1 in 10 minutes if indicated
ROCURONIUM	0.2 mg/kg IV push may repeat as necessary
SODIUM BICARBONATE	1 – 2 mEq/kg IV/IO for wide QRS in tricyclic antidepressants overdose and hyperkalemia.
SUCCININYLCHOLINE (SFD RSI only)	2.0MG/KG rapid IVP
THIAMINE	100 mg IV/IM

APPENDIX C

VVMC PREHOSPITAL STANDARD INFUSION MIXTURES

Amiodarone- Mix 450 mg in 250mL of D5W (special polyolefin bag), concentration 1.8 mg/mL, and run at 33.3 mg/hr for 1 mg/min or 16.7 mL/hr for 0.5 mg/min

Dopamine- 400 mg/ 250 mL D5W premix= 1600 mcg/ml

Epinephrine- mix 4 mg 1:1,000/ 250 mL NS or D5W= 16 mcg/ mL

Lidocaine- 2 Gm in 500 mL D5W premix= 4 mg/ mL, run 1- 4 mg/min 15 to 60 gtts/min for adults.
4000 mcg/ mL to determine pediatric dosing of 20 -50 mcg/kg/min

Magnesium Sulfate- (OB Use) Mix 4 Gm/ 100 mL NS or D5W, run at 1-4 Gm/hr (20-80 mL/hr)

Magnesium Sulfate- (Asthma) Mix 2Gm/ 100mL NS, run over 10-20 minutes

APPENDIX D
AUTHORIZED SUPPLY OF MEDICATION FOR DRUG BOXES
INTERFACILITY TRANSPORT MEDICATION LIST
BLITZ PACK MEDICATION LIST

AGENT	MINIMUM SUPPLY	VVMC DRUG BOX
Adenosine	30 mg	6 mg / 2ml (5)
Albuterol Sulfate	10 mg	0.08% (6)
Amiodarone (optional)	300 mg	900 mg
Antiemetics: (optional) Promethazine HCL Ondansetron HCL/ODT Prochlorperazine edisylate	 25 mg 4 mg 10 mg	 2 mg/ml (2) (HCL) 4 mg tablets (2) (ODT)
Aspirin	324 mg	81 mg (16)
Atropine Sulfate	4 mg 8 mg multi dose	1 mg/10 cc (4) 8mg/20 ml (1)
Bumex (Bumetanide) (in absence of Lasix)	4 mg	0.25 mg/ml (4)
Calcium Chloride	1 gram	2
Charcoal, Activated (without sorbital)	50 G	25 gms (2)
Dexamethasone (optional)	8 mg	NONE
Dextrose	50 g	25g/50 ml (2)
Diazepam (required) Diazepam Rectal Delivery Gel (optional)	20 mg	10mg/2ml (2)
Diltiazam (optional)	25 mg	1
Diphenhydramine HCL	50 mg	2
Dopamine HCL	400 mg	1
Epinephrine HCL 1: 1,000 solution	2 mg Multi-dose	1 cc amp (2) 30 cc (1)
Epinephrine HCL 1: 10,000 solution	5 mg	6
Etomidate (optional) RSI only	40 mg	2
Fentanyl	200 mcg	200 mcg
Furosemide	100 mg	40mg/ml (4)
Glucagon	2 mg	2
Glucose, oral (optional)	30 gm	NONE
Ipratropium Bromide 0.02 %	5 ml	2.5 ml ud (4)
Lidocaine HCL IV Lidocaine Premixed Infusion	300 mg 2 G	100mg/5ml (4) 4mg/ml (500ml) (1)
Lorazepam (optional)	8 mg	NONE
Magnesium Sulfate	5 g	5
Methylprednisolone Sodium Succinate	250 mg	2
Midazolam (optional)	10 mg	5mg/5ml (2) 5mg/1m1 (4)
Morphine Sulfate	20 mg	10 mg/ml (2)

Nalmefene HCL (optional)	4 mg	NONE
Naloxone HCL	10 mg	2 mg (5)
Nitroglycerin Tablets or Nitroglycerin Sublingual Spray	1 bottle 1 bottle	1
Oxytocin (optional)	10 units	20 units
Ondansetron (optional)	8 mg	2 mg/ml (2)
Phenylephrine Nasal Spray 0.5 %	1 bottle	1
Rocuronium (interfacility only)	50 mg	50mg/5ml
Sodium Bicarbonate 8.4 %	100 mEq	50meq/50 ml (2)
Succinylcholine (RSI only)	20 mg/ml	200 mg (2)
Thiamine HCL	100 mg	1
Vasopressin	20 units	NONE
Verapamil HCL	10 mg	NONE
Nitrous Oxide (optional)	1 setup	NONE
Syringes: 1 ml TB 3 ml 10 ml 20 ml 50-60 ml	2 4 4 1 2	
Filter Needles	3	
Intravenous Solutions Dextrose 5% 250 ml (Optional) Lactated Ringers 1000 ml Normal Saline 1000 ml 250 ml 50 ml	 2 2 1 2	 1 4 4 3 2
EMT BASIC DRUG BOX		
Aspirin	324 mg	81 mg (16)
Epi- Auto injector	2 Adult 2 Pediatric	2 2

INTERFACILITY TRANSPORT MEDICATION LIST

IV INFUSIONS	EMT-P	EMT-I(99) Footnote 3	INFUSION PUMP
AMIODARONE	X		X
ANTIBIOTICS	X	X	
BLOOD	X		
CALCIUM CHLORIDE	X		X
COLLOIDS	X	X	X
CORTICOSTEROIDS	X	X	X
DEXAMETHASONE	X		X
DILTIAZEM	X		X
DIURETICS- OTHER THAN FUROSEMIDE OR BUMETANIDE	X	X	X
DOPAMINE HCl	X		X
ELECTROLYTES/CRYSTALLOIDS-COMMERCIAL PREPARATIONS	X	X	
EPINEPHRINE HCL	X	X	X
FOSPHENYTOIN Na or PHENYTOIN Na	X		X
GLUCAGON	X	X	X
GLYCOPROTEIN IIb/IIIa Inhibitors	X		X
HEPARIN Na	X		X

H2 BLOCKERS	X	X	X
MAGNESIUM SULFATE	X		X
METHYPREDNISOLONE SODIUM SUCCINATE	X	X	X
MIDAZOLAM	X		X
MORPHINE SULFATE	X	X	X
NITROGLYCERIN IV SOLUTION	X		X
OXYTOCIN	X		
PHENOBARBITAL Na	X		X
POTASSIUM SALTS	X		X
PROCAINAMIDE	X		X
RACEMIC EPINEPHRINE svn	X		
ROCURONIUM	X		
THEOPHYLLINE	X		X
TOTAL PARENTERAL NUTRITION	X		X
VITAMINS	X	X	

Notes:
1. Only an EMT-P may monitor an intravenous infusion via a central line.
2. Appropriate levels of EMT personnel shall be educated in an approved curriculum (covering both IV pumps and the specific drugs named in Table 1) and approved by their base hospital medical director, before monitoring patients on the listed medications during inter-facity transports.
3. On approval of the medical director on an individual basis.
4. All other medications an individual is authorized to administer by the Administrative Medical Director may be transported but must be on an infusion pump.

APPROVED MEDICATION LIST FOR BLITZ/HIKE OUT

The following list is approved by medical direction as a minimum level of medications to carry in a blitz/hike out pack for standardization of care and compliance to DHS regulations.

Medication	Supply	Amount	Purpose
Epinepherine	**30 mg Vial**	**1**	**Allergic reaction, Anaphylaxis, bradycardia, hypotension, cardiac arrest, etc.**
Versed	**5mg/1ml**	**2**	**Seizures, agitated patients etc.**
Morphine	**10 mg/1ml**	**2**	**Pain management**
Fentanyl	**100mcg/2 ml**	**2**	**Pain management**
Albuterol Sulfate	**2.5 mg/3ml NS**	**2**	**Respiratory**
Oral Glucose	**30 grams**	**1-2**	**Hypoglycemia**
Glucagon	**1mg/ml**	**1**	**Hypoglycemia**
Narcan	**2mg/2ml**	**2**	**Opiate Overdose reversal**
Zofran	**4mg/2ml**	**2**	**Nausea**
ASA	**81 mg**	**4**	**Chest pain**
Ntg	**0.4 mg**	**1 bottle**	**Chest pain**
Benedryl	**50 mg/1ml**	**1**	**Allergic reaction, Anaphylaxis, respiratory, etc.**
Valium	**10mg/2 ml**	**1**	**Large muscle spasms associated with possible Femur, Pelvic fractures and burns.**

APPENDIX E
SCORES AND SCALES

Glasgow Coma Scale- Adult
Level of Consciousness (LOC):

1. Eye opening:

Spontaneously	4
To speech	3
To pain	2
Never	1

2. Best verbal response

Oriented	5
Confused	4
Inappropriate	3
Garbled	2
None	1

3. Best motor response

Obeys commands	6
Localizes pain	5
Withdrawal	4
Abnormal flexion	3
Extension	2
None	1

Total = 3-15 possible

Modified (Pediatric) Glasgow Coma Scale

Infants		**Children**
	Eye Opening	
Spontaneous	4	Spontaneous
To speech or sound	3	To Speech
To painful stimulus	2	To pain
None	1	None
	Best Verbal Response	
Coos, babbles, smiles	5	Cries appropriately, Orientated
Irritable cry but consolable	4	Confused
Cries/screams to pain	3	Inappropriate crying/
Grunts/groans to pain	2	Grunts incomprehensible words
None	1	None
	Best Motor Response	
Spontaneous movement	6	Obeys commands
Localizes pain	5	Localizes pain
Withdrawal from pain	4	Withdrawal from pain
Flexion to pain (decorticate)	3	Flexion to pain
Extension to pain (decerebrate)	2	Extension to pain
None	1	None

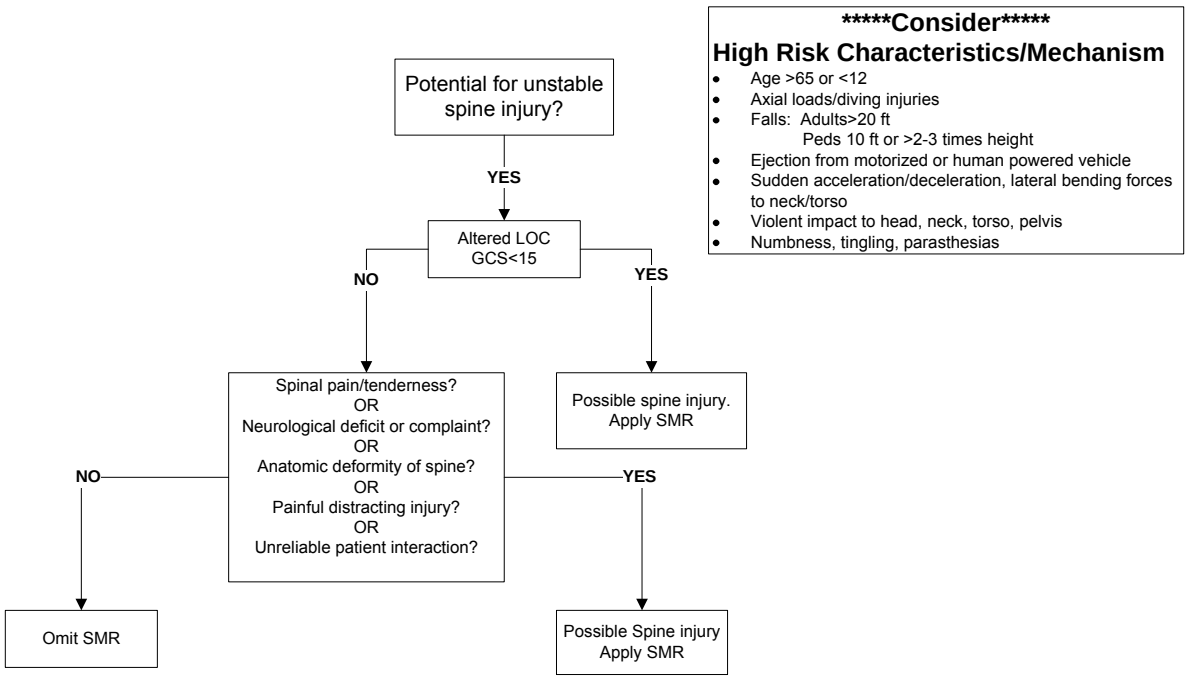
Total = 3-15 possible

THE APGAR SCORE

Appearance (skin color):	
Body and extremities blue, pale	0
Body pink, extremities blue	1
Completely pink	2
Pulse rate:	
Absent	0
Below 100 bpm	1
100 bpm or more	2
Grimace:	
No response	0
Grimace	1
Cough, sneeze, cry	2
Activity:	
Limp	0
Some flexion of extremities	1
Active motion	2
Respiratory effort:	
Absent	0
Slow and irregular	1
Strong cry	2
Total score:	_____

APGAR Score should be assessed at one minute of birth and then reassessed at five minutes.

Spinal Motion Restriction- Blunt Trauma(1)



◄

Unreliable Patient Interactions

- Language barriers; inability to communicate
- Lack of cooperation during exam
- Evidence of drug/alcohol intoxication

Spinal Motion Restriction (SMR)

- Apply appropriate sized cervical collar
- Secure patient to scoop stretcher with strap system if available
- Stabilize head with blocks/pads
- Pad void spaces if possible
- Secure to long spine board if scoop stretcher is not available

Motor/Sensory Exam

- Wrist/hand extension bilaterally
- Foot plantar/flexion bilaterally
- Foot dorsiflexion bilaterally
- Gross sensation in all extremities
- Check for parasthesias

1) Document in PCR indications requiring spinal motion restriction.

APPENDIX F

Transport Guidelines

VVEMS Medical Direction Policy on Transport Destination

When ambulances are requested for a transport to a healthcare facility from the community, a private residence, doctors' offices and/or nursing homes they are to be transported to the closest, most clinically-appropriate facility.

Specific examples would include: Acute cerebral vascular accident (CVA), psychiatric patients, cardiology patients, and multi-trauma patients have specific destinations.

In cases when transport times are roughly equivalent, then considerations should be made on the destination facility based on the receiving facility's patient load or capacity, medical direction preference, and/or patient preference. Patient preference alone may not be sufficient reason to justify transport to a facility farther away then the closest most clinically-appropriate facility.

The goals of all EMS transports are to ensure the highest quality and safest patient care is being delivered while using public resources wisely, i.e. to minimize diversion of limited transport resources away from the community for extended periods of time. This philosophy will serve both patient and physicians' goals with an understanding that patient safety is the most important of these goals.

There may occur that reasonable circumstances in which a patient is best served by transport to a facility other than the closest. State EMS laws allow for these transports, but such transports shall occur subject to both online and administrative medical direction to govern these transport variances.

Under those limited circumstances in which patients may be transported to a facility other than the closest, the following criteria must be met:

1. Patient has been given informed consent to transfer and is aware that they are going to a facility farther away than the closest most appropriate facility.
2. The online medical direction physician (may be via nurse intermediary) has consented to the transport
3. If the transport is from a healthcare facility, both the sending and receiving physicians have consented to the transport and informed the patient of the risk/benefits of the transport to include most appropriate mode, i.e. ground vs. air transport.
4. The EMS crews on scene have determined the patient has been stabilized and is safe for transport to the more distant facility.
5. The EMS agency making the transport has sufficient personnel and resources to initiate the transport without delay or reducing community transport resources without the ability to "backfill" the ambulance being sent on the transport.

If any of the above criteria is not met, then the patient should be taken to the closest appropriate facility.

VVMC PREHOSPITAL CARE
SEDONA FIRE DEPARTMENT TRANSPORT GUIDELINES

Sedona Emergency Center (SEC):
SEC was established to provide rapid treatment of medical emergencies for the patients in the Sedona area. Patients should be transported to SEC unless their Chief Complaint falls into the categories outlined below.

All patients who need emergent stabilization will be transported to the closest facility

Transport to VVMC:

Cardiac: STEMI (transmit ECG ASAP).
PTs from VOC with suspected cardiac in origin chest pain with or without STEMI.
Post cardiac arrest with a return of spontaneous circulation

Respiratory: Patients on CPAP mask who have improved and don't require immediate stabilization

Neurological: CVA—patients with acute onset of symptoms clearly less than 3 hours old can be transported to **SEC**

Exceptions: CVA- Patients with acute onset of symptoms clearly less than 3 hours old between the hours of 22:00 to 07:00 daily, major holidays, and from the **VOC** should be transported to **VVMC.**

Psychiatric: Acute psychosis
Acute suicidal ideation
Combative and/or agitated**

**Any patients requiring security or constant nursing supervision for behavioral reasons are not appropriate for SEC

These guidelines are not all inclusive. Final transport decision is at the discretion of the VVMC Base Station intermediary or physician.

APPENDIX G
RSI, CPAP, IO ACCESS

RAPID SEQUENCE INTUBATION (RSI) USE BY EMT-P'S

VVEMS medical direction supports the use of RSI as an optional advanced airway management skill by properly trained EMT-Ps in recognition of the potentially lifesaving results.

Purpose:
This airway management skill will be used in situations where placement of a prehospital endotracheal tube using RSI is indicated by patient conditions *and* where there is clear benefit of performing RSI in the prehospital environment.

Procedure:

1. EMT-P will work full-time for an agency that supports the optional RSI program.

2. EMT-P will complete the VVMC RSI training program before beginning to perform RSI in the field.

3. EMT-P will perform RSI using the Arizona Department of Health Services Recommendations for RSI in the field (ADHS, 2005).

4. EMT-P will complete a minimum of 12 patient or mannequin intubations a year to continue to be included in the RSI program.

5. EMT-P will complete an annual RSI refresher course.

6. EMT-P will participate in mandatory immediate self assessment and ongoing departmental CQI on all RSI in the field cases.

7. If requested, EMT-P will participate in review of cases through the Prehospital Peer Review Committee.

RAPID SEQUENCE INTUBATION (RSI) USE BY EMT-P'S (CONT.)

INDICATIONS FOR INTUBATION:

- Respiratory Failure
- Loss of gag reflex, protective airway reflex
- Glascow coma scale of 7 or less
- Severe head trauma
- Combative patient
- Spinal cord injury with airway compromise
- Facial or airway burns
- Asthma or other respiratory illness
- Potential increase in ICP

7 P'S FOR RSI

PREPARATION	**ZERO-10 MIN**
Monitor- Sp02, ECG, BP, IV Access, Prepare Meds	
PREOXYGENATION	**ZERO-5 MIN**
5 MIN OF MAX 02 OR 8 VC Breaths	
PRETREATMENT	**ZERO-3 MIN**
LOAD	
PARALYSIS AFTER INDUCTION	**ZERO**
PROTECTION AND POSITIONING	**ZERO-15 SEC**
Sellick's maneuver, sniffing position	
PLACEMENT WITH PROOF	**ZERO + 45 SEC**
Burp, EtC02, EDD (in Cardiac Arrest)	
POST-INTUBATION MANAGEMENT	**ZERO + 1 MIN**
Sedation and paralysis, Auto-Vent, 02 Monitor	

RAPID SEQUENCE INTUBATION (RSI) USE BY EMT-P'S (CONT.)

DRUG DOSES

PRETREATMENT (LOAD)

Lidocaine 1.5 mg/kg

INDUCTION

Etomidate 0.3 mg/kg

Alternate induction agent to be used if no Etomidate:

Midazolam 0.1 mg/kg to a **MAX** dose of **10 mg (With a BP > 100 Systolic)**

Special considerations:
Midazolam duration of action: 2-6 hours
Midazolam will have less sedative effects with an increased duration of action compared to Etomidate.
Be prepared for increased difficulty in intubation.

PARALYTIC AGENTS

Succinylcholine 2.0 mg/kg
Contraindications:

- Hx of malignant hyperthermia
- Burns > 24 hours to healed
- Muscle damage (crush) ?24 to healed
- Spinal cord injury/ stroke > 5 days- 6 mo
- Intra- abdominal sepsis > 5 days - healed

MAINTENANCE/ PAIN MANAGEMENT

Midazolam	5 mg/ PRN
Morphine	2 mg Initial dose
	2-6 mg subsequent doses

Evaluate Vital signs before and after each administration of Midazolam and Morphine.

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)

PURPOSE:

Continuous Positive Airway Pressure has been shown to rapidly improve vital signs, gas exchange, and work of breathing, decrease the sense of dyspnea, and decrease the need for endotracheal intubation in patients who suffer from shortness of breath from asthma, COPD, pulmonary edema, CHF, and pneumonia. In patients with CHF, CPAP improves hemodynamics by reducing cardiac preload and afterload. CPAP decreases mortality when used in COPD exacerbations.

INDICATIONS:

Any patient who is in respiratory distress of any cause who has protective airway reflexes AND

1. Is awake, oriented and able to follow commands
2. Is over 12 years old and is able to fit the CPAP mask
3. Has the ability to maintain an open airway
4. A respiratory rate greater than 25 breaths per minute
5. Has pulse oximetry less than 92%
6. Uses accessory muscles during respirations

CONTRAINDICATIONS:

1. Patient is in respiratory arrest/apneic.
2. Patient is suspected of having a pneumothorax or has suffered trauma to the chest.
3. Patient has a tracheostomy.
4. Patient is actively vomiting or has upper GI bleeding.

PRECAUTIONS:

1. Use care if patient:
    a. Has impaired mental status and is not able to cooperate with the procedure
    b. Has failed at past attempts at noninvasive ventilation
    c. Complains of nausea or vomiting
    d. Has inadequate respiratory effort
    e. Has excessive secretions
    f. Has a facial deformity that prevents the use of CPAP
2. Intubation should be performed by IEMT or Paramedic personnel if the patient:
    a. Goes into respiratory or cardiac arrest
    b. Is unresponsive to verbal stimuli (GCS is <9)
3. CPAP should not be used primarily with portable oxygen tanks because of the large amount of oxygen it takes to operate the device

ADULT PROCEDURE:

1. Make sure patient does not have a pneumothorax!
2. Explain the procedure to the patient
3. Ensure adequate oxygen supply to ventilation device (100% when starting therapy and until Sa02 is >92%)
4. Place the patient on continuous pulse oximetry
5. Place the patient on continuous endtidal CO2 monitoring

6. Place patient on cardiac monitor and record rhythm strips with vital signs (interpretation by ALS personnel only)
7. Place the delivery device over the mouth and nose
8. Secure the mask with provided straps or other provided devices
9. Start CPAP at 5 cm H20 of PEEP. Increase gradually, if necessary, as patient adjusts and tolerates the PEEP to a maximum of 10 cm H20 on the pressure gauge. Document changes in patient status.
10. Check for air leaks
11. Monitor and document the patient's respiratory response to treatment
12. Check and document vital signs (ideally every 5 minutes)—specifically monitor rate, depth and SaO2 and mental status. Some decrease in blood pressure may occur.
13. Continue to coach patient to keep mask in place and readjust as needed
14. Administer appropriate medication if necessary. (Ex. Albuterol/atrovent/methylprednisolone for asthma/COPD and Nitro for CHF)
15. If respiratory status deteriorates, remove device and consider intermittent positive pressure ventilation with or without endotracheal intubation
16. Contact receiving hospital in advance to advise them you have CPAP on the patient so they may prepare since equipment is not based in the ED.

REMOVAL PRODECURE:
1. CPAP therapy needs to be continuous and should not be removed unless the patient cannot tolerate the mask or experiences continued or worsening respiratory failure or begins to vomit.
2. Intermittent positive pressure ventilation and/or intubation should be considered if the patient is removed from CPAP therapy.

PEDIATRIC CONSIDERATIONS:
1.CPAP should not be used in children under 12 years of age.

SPECIAL NOTES:
1. May be performed by Paramedics
2. May use 1 mg slow IV push of Midazolam if patient has high anxiety associated with CPAP device. Use small, repeated doses every 3- 5 minutes. Titrate to effect (*Use Caution in Dosaging to prevent a decrease in Level of Consciousness as Versed has a high potential to sedate patients)*
2. Advise receiving hospital so they can be prepared for the patient
3. Do not remove CPAP until hospital therapy is ready to be placed on patient or if patient can no longer tolerate CPAP
4. Most patients will improve in 5-30 minutes. If no improvement within this time, consider intermittent positive pressure ventilation
5. Watch patient for gastric distention
6. Be cautious when using nitroglycerine spray with CPAP since it could be dispersed on EMT's

IO Protocol for use with Easy IO Gun

Training:
EZ-IO® infusion systems require specific training prior to use.

INDICATIONS:
EZ-IOAD , EZ-IO® PD,and EZ-IO LD
Note: *Utilize manufactures depth marks on needle to determine the proper size. "One size needle set does not fit all"*
1. Immediate vascular access in emergencies. IE. Cardiac Arrest
2. Intravenous fluids or medications are urgently needed and a peripheral IV cannot be established in 2 attempts or 90 seconds
AND the patient exhibits risk of immediate death or loss of function or deterioration.

RELATIVE CONTRAINDICATIONS:
Fracture of the bone selected for IO infusion (*consider alternate sites*)
Excessive tissue at insertion site with the absence of anatomical landmarks (*consider alternate sites*)
Previous significant orthopedic procedures (*IO within 24 hours, prosthesis - consider alternate sites*)
Infection at the site selected for insertion (*consider alternate sites*)

CONSIDERATIONS:
Flow rate: Due to the anatomy of the IO space, flow rates may appear to be slower than those achieved with an IV catheter.

- Ensure the administration of an appropriate rapid **SYRINGE BOLUS (flush)** prior to infusion "**NO FLUSH = NO FLOW"**
  - Rapid syringe bolus (flush) the EZ-IO AD or LD with 10 ml of normal saline
  - Rapid syringe bolus (flush) the EZ-IO PD with 5 ml of normal saline
  - Repeat syringe bolus (flush) as needed
- To improve continuous infusion flow rates always use a syringe, pressure bag or infusion pump

Optional treatment for Pain after stabilization of patient: IO Infusion for conscious patients has been noted to cause severe discomfort

- SLOWLY administer Lidocaine 2% (Preservative Free) through the EZ-IO hub. *Ensure that the patient has no allergies or sensitivity to Lidocaine.*
  - EZ-IO AD and EZ-IO LD Slowly administer 20 – 40 mg Lidocaine 2% (Preservative Free)
  - EZ-IO® PD Slowly administer 0.5 mg /kg Lidocaine 2% (Preservative Free)

EQUIPMENT:
EZ-IO Driver
EZ-IO AD, EZ-IO PD or EZ- IO LD Needle Set
Alcohol or Betadine Swab
EZ-Connect® or Standard Extension Set
10 ml Syringe

Normal Saline (or suitable sterile fluid)
Pressure Bag or Infusion Pump
2 % Lidocaine (preservative free)
EZ-IO® Yellow wristband

PROCEDURE: *If the patient is conscious, advise of EMERGENT NEED for this procedure and why*

1. Wear approved Body Substance Isolation Equipment (BSI) or Personal Protective Equipment (PPE)
2. Determine EZ-IO® Indications
3. Rule out Contraindications
4. Locate appropriate insertion site (*Approved sites:Proximal / Distal Tibia /Proximal Humerus*)
5. Prepare insertion site using aseptic technique
6. Prepare the EZ-IO® driver and appropriate needle set
8. Stabilize site and insert appropriate needle set
9. Remove EZ-IO® driver from needle set while stabilizing catheter hub
10. Remove stylet from catheter, place stylet in shuttle or approved sharps container
11. Confirm placement
12. Connect primed EZ-Connect®
13. Slowly administer appropriate dose of Lidocaine 2% (Preservative Free) IO to conscious patients
14. Syringe bolus (flush) the EZ-IO® catheter with the appropriate amount of normal saline.
15. Begin infusion with pressure (syringe bolus, pressure bag or infusion pump)
17. Dress site, secure tubing and apply wristband as directed
18. Monitor EZ-IO® site and patient condition – Remove catheter within 24 hours.

APPENDIX H

ALS Release of Patients for BLS Transport

Criteria 1: Non- emergency category must have vitals within the following limits:

	Adult
*Respirations	10 to 24
*BP	90 to 160 systolic 60 to 110 diastolic
*Pulse	60 to 100
*Pulse Oximetry	>90% or change from normal
	Pediatric
	Age Appropriate

↓

Criteria 2: The following high- risk indications must be absent:

- □ Abdominal pain- Adult
- □ Altered mental status (Compared to pt's normal status)
- □ Any acute cardiac arrhythmia
- □ Chest pain
- □ Shortness of breath
- □ Syncope/ Dizziness
- □ Overdose/poisoning
- □ Seizures
- □ Pregnancy- related complaint
- □ Significant head/neck/chest/abdomen/pelvis trauma

↓

Criteria 3: Absence of disease or process that would benefit from ALS care

A physical exam must be completed and documented. After evaluation the patient must not have any signs or symptoms that would indicate significant findings or emergent condition. Patient care may be upgraded to ALS at anytime if medic feels patient warrants additional care.

↓

Contact must be made to medical control for final approval to transport BLS. BLS provider may complete courtesy notification with the guidance of ALS provider.

APPENDIX I

VVMC/AZ Scope of Practice Care Levels

Skills-Airway/Ventilation/Oxygenation	**EMT**	**EMT I-99**	**Paramedic**
Airway-esophageal	**STR**	✓	✓
Airway-supraglottic	**STR**	**STR**	✓
Airway-nasal	✓	✓	✓
Airway-oral	✓	✓	✓
Bag-valve-mask (BVM)	✓	✓	✓
BiPAP/CPAP			✓
Chest decompression-needle		✓	✓
Cricoid pressure (Sellick's maneuver)	✓	✓	✓
Cricothyrotomy-needle		**STR**	✓
Cricothyrotomy-percutanious		**STR**	✓
Cricothyrotomy-surgical		**STR**	**STR**
Demand valve-manually triggered ventilation	✓	✓	✓
End tidal CO2 monitoring/capnography		✓	✓
Gastric decompression-NG tube		✓	✓
Gastric decompression- OG tube		✓	✓
Head Tilt chin lift	✓	✓	✓
Intubation-nasotracheal		**STR**	✓
Intubation-orotracheal		✓	✓
Jaw-thrust	✓	✓	✓
Jaw-thrust- modified (trauma)	✓	✓	✓
Medication Assisted Intubation			**STR**
Mouth-to-barrier	✓	✓	✓
Mouth-to-mask	✓	✓	✓
Mouth-to-mouth	✓	✓	✓
Mouth-to-nose	✓	✓	✓
Mouth-to-stoma	✓	✓	✓
Obstruction-direct laryngoscopy		✓	✓
Obstruction-manual	✓	✓	✓
Oxygen therapy-humidifiers	✓	✓	✓
Oxygen therapy-nasal cannula	✓	✓	✓
Oxygen therapy-non rebreather mask	✓	✓	✓
Oxygen therapy-partial non-rebreather	✓	✓	✓
Skill-Airway Continued			
Oxygen therapy-simple face mask	✓	✓	✓
Oxygen therapy-venturi mask	✓	✓	✓
PEEP-therapeutic		✓	✓

Pulse Oximetry	✓	✓	✓
Suctioning-upper airway	✓	✓	✓
Suctioning-tracheobronchial		✓	✓
Automated transport ventilator		✓	✓
Skill-Cardiovascular/Circulation			
Cardiac monitoring –multiple lead interpretive		✓	✓
Cardiac monitoring-single lead interpretive		✓	✓
Cardiac- Multiple lead acquisition	**STR**	✓	✓
Cardiopulmonary resuscitation	✓	✓	✓
Cardioversion-electrical		✓	✓
Defibrillation-automatic/semiautomatic	✓	✓	✓
Debrillation-manual		✓	✓
Hemorrhage control-direct pressure	✓	✓	✓
Hemorrhage control-tourniquet	✓	✓	✓
Internal: cardiac pacing-monitoring only		✓	✓
Mechanical CPR device	**STR**	**STR**	**STR**
Transcutaneous pacing-manual		✓	✓
Immobilization			
Spinal immobilization-cervical collar	✓	✓	✓
Spinal immobilization-long board	✓	✓	✓
Spinal immobilization-manual	✓	✓	✓
Spinal immobilization-seated (KED)	✓	✓	✓
Spinal immobilization-rapid manual extrication	✓	✓	✓
Extremity stabilization-manual	✓	✓	✓
Extremity splinting	✓	✓	✓
Splint-traction	✓	✓	✓
Mechanical patient restraint	✓	✓	✓
Emergency moves for endangered patients	✓	✓	✓
Medication administration-routes			
Assisting patient with his/her own prescribed medications (aerosolized/nebulized)	✓	✓	✓
Aerosolized/nebulized (beta agonist)		✓	✓
Buccal			✓
Endotracheal tube		✓	✓
Inhaled self-administered (nitrous oxide)			✓
Intradermal			✓
Intramuscular		✓	✓
Intranasal		✓	✓

Intravenous push		✓	✓
Intravenous piggyback		✓	✓
Nasogastric			✓
Oral	✓	✓	✓
Rectal		✓	✓
Subcutaneous		✓	✓
Sublingual		✓	✓
Auto-injector (self or peer)	✓	✓	✓
Auto-injector (patients own prescribed medications)	✓	✓	✓
IV initiation/maintenance fluids			
Access indwelling catheters and implanted central IV ports			✓
Central line-monitoring			✓
Intraosseous-initiation		✓	✓
Intravenous access		✓	✓
Intravenous initiation-peripheral	**STR**	✓	✓
Intravenous-maintenance of non-medicated IV fluids	✓	✓	✓
Umbilical initiation			**STR**
Miscellaneous			
Assisted delivery (childbirth)	✓	✓	✓
Assisted complicated delivery (childbirth)	✓	✓	✓
Blood glucose monitoring	✓	✓	✓
Blood pressure-automated	✓	✓	✓
Blood pressure-manual	✓	✓	✓
Eye irrigation	✓	✓	✓
Eye irrigation (Morgan lens)			**STR**
Thrombolytic therapy-initiation			**STR**
Urinary catherization			**STR**
Venous blood sampling		✓	✓
Blood chemistry analysis			**STR**
Interfacility med transport list		**STR**	**STR**
Medications			
Adenosine		✓	✓
Albuterol Sulfate (SVN or MDI)		✓	✓
Amiodarone			✓
Antibiotics		**STR**	**STR**
Aspirin	**Assist with patients prescribed medication**	✓	✓
Atropine Sulfate		✓	✓
Apropine Sulfate (multidose vial)		✓	✓

Atropine Sulfate Auto-injector		✓	✓
Atropine Sulfate and Pralidoxime Chloride (combined)		✓	✓
Blood			✓
Bronchodilator, inhaler		**Assist only**	✓
Calcium Chloride			✓
Calcium Gluconate, 2.5% topical gel			✓
Charcoal, Activated		✓	✓
Colloids		**TA-STR**	**TA-STR**
Corticosteroids		**TA-STR**	**TA-STR**
Dexamethasone		✓	✓
Dextrose D50		✓	✓
Dextrose, 5% in H2O		✓	✓
Diazepam		✓	✓
Diazepam Rectal Delivery Gel		✓	✓
Diltiazem or Verapamil HCl			✓
Diphenhydramine HCl		✓	✓
Diuretics		✓	✓
Dopamine HCl			✓
Electrolytes/Crystalloids (commercial preparations)		✓	✓
Epinephrine Auto-injector		✓	✓
Epinephrine HCl, 1:1000		✓	✓
Epinephrine HCl, 1:1000 Multidose		✓	✓
Epinephrine HCl, 1:10000		✓	✓
Etomidate			**STR**
Fosphenytoin Na or Phenytoin Na			
Furosemide or Bumetanide		✓	✓
Glucagon		✓	✓
Glucose, Oral		✓	✓
Glycoprotien IIb, IIIa Inhibitors			**TA-STR**
H2 Blockers			**TA-STR**
Heparin Na			**TA-STR**
Immunizing Agent		✓	✓
Ipratropium Bromide 0.02%		✓	✓
Lactated Ringers		✓	✓
Lidocaine HCl IV		✓	✓
Lorazepam		✓	✓
Magnesium Sulfate			✓
Methylprednisoloine Sodium Succinate		✓	✓
Midazolam		✓	✓
Morphine Sulfate		✓	✓
Nalmefine HCl		✓	✓
Naloxone HCl		✓	✓
Nitroglycerin IV Solution			✓
Nitroglycerin Sublingual Spray or Nitroglycerin Tablets	**Assist with patients**	✓	✓

	prescribed medication		
Nitrous Oxide		✓	✓
Normal Saline		✓	✓
Ondansetron HCl		✓	✓
Oxygen	✓	✓	✓
Oxytocin		✓	✓
Phenobarbital Na			✓
Phenylephrine Nasal Spray		✓	✓
Potassium Salts			✓
Pralidoxine Chloride, Auto-ejector		Only in Toxicology emergencies	✓
Procainamide HCl			✓
Racemic Epinephrine			✓
Sodium Bicarbonate 8.4%		✓	✓
Succinylcholine			**STR**
Theophylline			✓
Thiamine HCl		✓	✓
Total Parenteral Nutrition, with or without lipids			**TA-STR**
Tuberculin PPD		✓	✓
Vasopressin			✓
Vitamins		**TA-STR**	**TA-STR**

✓	Arizona Scope of Practice skill
STR	Specialty Training Requirement: Skill requires specific specialty training with medical director
TA	Transport agent